

Department of Integrated Science and Technology Faculty Annual Report May 2016 to May 2017

*All responses go into tables and nearly all responses require that you put your name with each entry. This greatly facilitates the compiling of the information into a department summary for the annual report. All entries below should be in **10 point type** to ensure uniformity when compiling. Additionally, accomplishments in a several categories needs to get called out in our departmental annual report.*

Please add the following initials at the end of the row to indicate the following:

- **MC** = Madison Collaborative (anything you are doing that ties in to ethical reasoning in action)
- **EL** = Engaged Learning/Teaching (study abroad/away, hands-on activities, etc.....this also includes capstones, theses, etc. but *no need to indicate this separately in Section I.D.*, since it will all be Engaged Teaching/Learning)
- **CE** = Community Engagement (working with community partners at the local, state, national, regional, or international level)
- **VE** = Civic Engagement (anything outside the classroom related to citizenship, public policy, etc.)
- **Diversity** (including diversity-related outreach, Study Group, etc.)
- **NW** = Newsworthy accomplishment: use this to call my attention to something that you think is exceptional in the sense that it would be worth highlighting in the departmental and/or college report.

TEACHING

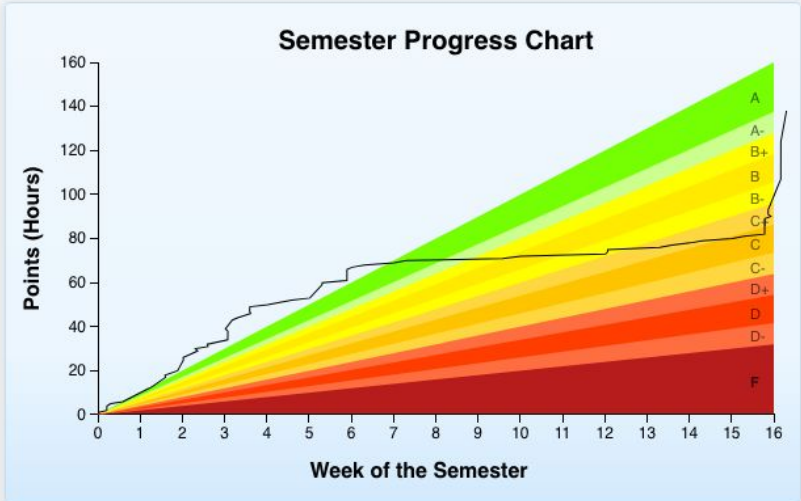
A. Classes Taught. List all courses and sections taught (not including capstones, independent studies, theses, etc.) during the past academic year. If team taught, please indicate lead.

Fall Semester			
Course designator, number and title	Section #	Enrollment	Team (lead)
ISAT 340—Software Development	3	24	
ISAT 345—The Software Industry	1	20	
ISAT 348—The Multimedia Industry	1	22	
ISAT 430—Materials Science in Manufacturing	1	16	Nicole Radziwill
Spring Semester			
CS 330—Societal and Ethical Issues in Computing—MC	3	10	
ISAT 440—Seminar in Knowledge Management—MC	1	16	
ISAT 252—Programming and Problem Solving	1	27	
ISAT 252—Programming and Problem Solving	2	26	
ISAT 480—The JMU Fueled Project—MC	5	10	Co-led w/ Mark Gabriele (Bio)

B. Significant contributions. Describe any significant teaching contributions related to these courses (include development of new courses, substantive revisions in content, new instructional techniques, breadth of teaching expertise and subject areas, teaching in other departments, etc.). Include instructional leadership, such as initiating and/or executing constructive curricular change. Put your name in the left hand cell and the information in the right hand cell of the table.

Morgan Benton	<p>ISAT 432—Product Design & Materials Selection for Manufacturing (led by Radziwill)—EL <i>Revised course offered for first time in Fall 2016 as ISAT 430, Materials Science in Manufacturing.</i> This course deals with the interplay between requirements specification, design, economics, environment, energy, materials selection, fabrication, manufacturing cost, and product life cycle considerations. Students will complete a product design case study from requirements to final design concept, including translating requirements to design, selecting appropriate materials, and choosing between design and production concepts using qualitative and quantitative analytical methods.</p> <p>ISAT 480—The JMU Fueled Project—MC/EL/CE/NW Taught in the JMU X-Labs, funded by the JMU Provost's Office and 4VA, sponsored by Aramark, and team-taught by Mark Gabriele (Bio) and Morgan Benton (ISAT), this cross-disciplinary course attracted upper-level students from across JMU—Bio, ISAT, SMAD, Marketing, Justice Studies, Engineering, etc.—to focus on hands-on problem solving related to Fueled, the student-created and run food truck. This course brought in external guests like Joel Salatin of Polyface Farms, and encouraged students to devise and begin projects related to alternative energy, sustainable agriculture, and conscientious lifestyle choices. As a pilot for an ongoing series of courses, this course resulted in the creation of a university-wide steering committee that will use Fueled as a “living lab,” and also development of the JMU garden and the beginnings of wind energy resource characterization. Concrete efforts were made toward increasing the amount of locally-sourced food served at JMU.</p>
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- C. **Course improvement.** List significant changes to course design or delivery that you have made during the past academic year. Please indicate if these directly resulted from feedback from students (*via* evaluations or otherwise) or colleagues. Put your name in the left hand cell and the information in the right hand cell of the table.

Morgan Benton	<p>ISAT 252—Programming and Problem-Solving Over the years I have experimented with a number of different, relatively radical approaches to teaching this course, most notably the choose-your-own-grade approach. While initially successful, over time, as word spread about the method of delivery and evaluation, actual student engagement and performance dropped significantly. This spring a points-accumulation strategy was implemented and I wrote software to support it. Students earned points by completing “badges” signifying some skill or accomplishment. They had a broad menu of potential badges they could earn, but were still essentially on their own to complete the work in a timely fashion. Here's an example of the charts they could use to monitor their own progress:</p>  <p>This chart is typical in that it shows a student who made extremely quick progress over the first 5-6 weeks but then completely dropped off the map until the very last week of the semester. Surprisingly,</p>
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	<p>there were zero students who made a consistent effort throughout the semester despite numerous reminders and supports designed to encourage them to stay active. Also, the quality of the work turned in at the end of the semester was lackluster given that it was rushed and completed only for the sake of earning points necessary to pass. I remain frustrated by the stubborn refusal of drive and passion to manifest itself among the students in a way that leads to consistent and enthusiastic effort in the course. I saw it appear briefly in the spring of 2009 and I really don't want to believe that it was a fluke.</p> <p>ISAT 345—Software Engineering This course used to be cross-listed with CS 345 and was always taught in CS until fall 2015. The CS program revamped its pre-requisites making it all but impossible for ISAT students to take the CS class. Fall 2016 was the 2nd time that I have taught this course and the second run went MUCH better than the first. The class simulated a software development company working on a real product. In fall 2015, the biggest problem was attendance—people did not show up consistently enough for the class to make progress. This past fall (2016), I put MUCH heavier weight on attendance, and also delegated significant authority to student members of the course. Students responded extremely positively. (It didn't hurt that many of them were being interviewed about the exact topic of the course for jobs at the time.) I'm looking forward to teaching this course in the same manner in the upcoming fall. With any luck we will be able to release the software we're working on.</p>
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- D. Independent study, capstone, thesis, etc. guidance,** including student research not associated with a formal course. Include the topic, the student's name, whether the work is for credit hours or salary, the approximate number of hours per week worked by student, and the outcome(s) for the student. For example, was a paper, a poster, an internal report, an oral presentation, etc. produced? If the student is participating in part of an ongoing project and there is not yet an outcome, indicate this. If a refereed paper was written, a presentation given by the student (oral or poster), or the student simply attended a workshop or conference, note this here.

Fall				
Course and Topic Title	Student Names	Topic Area	Publicly Shared?	Ongoing ?
ISAT 492	Berry, Donovan, Fitzpatrick	Type 1 Diabetes support app	No	Yes
ISAT 492	Cousins, Felice, Gilbert	Home energy auditing app	No	Yes
ISAT 492	Astarita, Brown, Michon	Ridesharing/carpooling app for JMU	No	Yes
ISAT 490	Nangle, Purritano	Type 1 Diabetes support app	No	Yes
ISAT 490	Campbell, Cox	Home energy auditing app	No	Yes
ISAT 490	Ellison, Gerhart, Walsh	Ridesharing/carpooling app for JMU	No	Yes
ISAT 490	Driver, Perry	Breath Sensor for VR/AR	No	Yes
Spring				
ISAT 493	Berry, Donovan, Fitzpatrick	Type 1 Diabetes support app	Sr. Symp. Pres	Yes
ISAT 493	Cousins, Felice, Gilbert	Home energy auditing app	Sr. Symp. Pres	Yes
ISAT 493	Astarita, Brown, Michon	Ridesharing/carpooling app for JMU	Sr. Symp. Pres	Yes
ISAT 491	Nangle, Purritano	Type 1 Diabetes support app	Symp. Poster	Yes
ISAT 491	Campbell, Cox	Home energy auditing app	Symp. Poster	Yes
ISAT 491	Ellison, Gerhart, Walsh	Ridesharing/carpooling app for JMU	Symp. Poster	Yes
ISAT 491	Driver, Perry	Breath Sensor for VR/AR	Symp. Poster	Yes
ISAT 491/492	Abdou	Social Media App for 360° Video	Symp. Poster	Yes

- E. Student projects, accomplishments, etc.** Discuss the significance of these student independent study/research contributions to your research program and to the students. Put your name in the left hand cell and the information in the right hand cell of the table.

Morgan Benton	<p>Berry, R., Donovan, E., Fitzpatrick, A. 2017. <i>Dialoggr: Data Management of Type 1 Diabetes.</i> This team began building an app to help people with type 1 diabetes manage their condition. This is the first in a series of capstone projects that will use Quantified Self technologies to build apps to help people with chronic conditions, their doctors, and the research communities that study the condition. The team successfully recruited a team of juniors to continue their work.</p> <p>Cousins, C., Felice, A., Gilbert, B. 2017. <i>Software Development for Home Energy Audits: Reducing Energy Consumption in Harrisonburg through Technology.</i> This team began an organization called Madison Conservation Corps. The goal of this organization is to provide a free home energy audit to every residence in Harrisonburg. <u><i>Rather than year-after-year one-off projects that audit some structure, this team worked to build a longer-term, sustainable organization that can systematically audit all of the homes in the city.</i></u> This year they began building the home energy auditing app necessary to do this. They have also recruited a team of juniors to carry on their work in the upcoming year.</p> <p>Astarita, A., Brown, M. Michon, A. 2017. <i>JMUScoop: A Progressive Ride Sharing Application for JMU Student Commuters.</i> This team did a systematic study of the ways that JMU students travel to and from campus and found that ride-sharing/carpooling was an under-served niche with high potential to alleviate traffic, parking, and environmental problems surrounding the daily commute. It also had the potential to increase community and reduce absence/tardiness from courses. In addition to building an app, the team recruited a group of juniors to continue their work in the future.</p> <p>Bell, C. 2017. <i>An IoT Sensory System: From Prototype to Production.</i> I served as sponsor to this project which is notable because it is the first capstone to focus on the "Internet of Things." This project is also one of the first to emanate from the newly revamped Production Systems concentration and offers a preview into the type and quality of work we might expect from that group. This project also made extensive use of the X-Labs and included the participation of a sophomore, who joined just for the fun of being a part of it.</p> <p>Driver, T., Perry, B. 2017. <i>Virtual Reality Breathing Sensor.</i> (Capstone Proposal) This project seeks to prototype and build a breath sensor that can be used as an input device for virtual/augmented reality (VR/AR) systems. It also aims to come up with a production strategy that will allow the device to be mass produced affordably. The project is significant because it is the first to support ISAT's partnering with Digital Raign, which touts itself as the Davos of the VR/AR world, JunoVR, an up and coming VR software company, and the JMU X-Labs. Although still at the ISAT 491 phase, the students have already mostly built a prototype and are looking forward to great progress as they complete their capstone next year.</p> <p>Abdou, A. 2017. <i>Presence: A Social-Media App for Sharing 360° Photos and Video.</i> This project is significant because the student has already raised over \$25,000 in funding to start a new kind of social media company. He is a leader in the JMU entrepreneurship club, and a great example of the kind of work that our students can accomplish if we give them the support and freedom to pursue their passions.</p> <p><i>MyTime for Caregivers.</i> This app is the result of work done by a team of students from occupational therapy (OT), social work, and engineering of whom I was the mentor at a hackathon in spring 2016. During the intervening year I helped them win a second competition yielding \$10,000 in seed funds for the LLC which we incorporated during the fall. The goal is to be able to showcase the live app at the next Lindsay Institute hackathon which will be in fall 2017.</p>
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F. **Advising, non-class teaching, and student interaction/support outside of class.** Please list here your activities teaching outside of the classroom (do not include capstones or other teaching listed elsewhere on this form; do include things like guest lectures, etc.) and assisting students, such as writing letters of recommendation, professional development advising, etc. If you have formal advising responsibilities, please include those here as well.

Activity (advising, instruction, letter, etc.)	# of students	Team (lead)
Letter of reference for Andrew Van Dyke for JET Program	1	
Letter of reference for Rachel Berry for Smithsonian Internship	1	
Guest Lecture: Assistive Technology (OT)—9/28/2016	20	For Amy Russell
Pop-Up Classes in JMU X-Labs on Building Wearable Tech	40	11/8/2016,

I. SCHOLARLY ACTIVITY AND PROFESSIONAL DEVELOPMENT

- A. **Grant applications submitted.** Put all submitted and newly funded grants here. Provide complete information. List all PI's and co-PI's. The "life of grant" should give beginning and end dates. Any co-PIs in other departments at JMU should include the name of their respective departments; co-PIs from other institutions should list their institutions.

Grant Title	PI	Co-PI	Agency	Life of Grant	1 st Year Amt	Total Request	Funded Yes/No
Cybersecurity and Society	Morgan Benton		VA Cyber Range	1 year	\$5k	\$5k	Yes
NeurodiVR - Designing Quality and Inclusion into Cyber-Human Systems	Nicole Radziwill	Morgan Benton	NSF	3 years	\$200K	\$500K	No
Transformative Tech Conf. (TTC), Palo Alto, CA	Morgan Benton		TTC	1 year	\$250	\$250	Yes

- B. **Ongoing Grants.** List here all multi-year grants that are in their second or subsequent years. Here, "single year amt" refers the amount for the current year.

N/A

- C. **Publications.** List here all publications. Give complete citation information. For smaller collaborations, always list **all** authors.

Peer Reviewed Journals:

1. Radziwill, N. M. & **Benton, M. C.**, 2017: Evaluating Quality of Chatbots and Intelligent Conversational Agents. *Software Quality Professional*, June.
2. Radziwill, N. M. & **Benton, M. C.**, 2017: Bot or Not? Using Recurrence Maps to Characterize Tweet Interarrival Patterns. Accepted and in revision at *Social Media and Society*.
3. **Benton, M. C.** & Radziwill, N.M., 2016: Merit Pay in Higher Education: Rationale, Unintended Consequences, and Alternatives. *Journal for Quality and Participation*, 39(3), October.
4. **Benton, M. C.** & Radziwill, N.M., 2016: Digging More Deeply into Behaviorism. *Journal for Quality and Participation*, 39, online supplement.
5. **Benton, M. C.** & Radziwill, N.M., 2016: Improving Testability and Reuse by Transitioning to Functional Programming. *Software Quality Professional*, June.

Book Reviews:

1. **Throwing Rocks at the Google Bus: How Growth Became the Enemy of Prosperity.** 2016. Douglas Rushkoff. New York, NY: Portfolio/Penguin. 278 pages. [Published in *Software Quality Professional*, June 2017]

2. **The Code Economy.** 2017. Philip E. Auerswald. New York, NY, Oxford University Press. 298 pages.
[Published in *Software Quality Professional*, June 2017]

D. Manuscripts submitted/in revision/in press

N/A

- E. Scholarly presentations.** List all presentations given, both on and off campus. Under the “Meeting/Venue” heading indicate either the meeting (full meeting name and location) or the on-campus function (give specific class, event or symposium). Indicate whether you, your student or collaborator presented the paper in each case by **putting the presenter’s name in bold**. Asterisk any student presenter.

Title	Presenter	Co-Presenter	Meeting/Venue	Date
Choose-Your-Own-Grade: Instructional Civil Disobedience	Morgan Benton	Nicole Radziwill	HASTAC 2016, Phoenix, AZ	5/12/2016
Design for Neurodiversity (DfN*): A Design for X Process for Alternative Cognitive Styles	Nicole Radziwill	Morgan Benton	HASTAC 2016, Phoenix, AZ	5/12/2016
Neurodiversity for Design and Innovation	Nicole Radziwill	Morgan Benton	SXSW, Austin TX	3/12/2017

- F. Invited presentations.** List all presentations given, both on and off campus. Presentations given to school groups or to general audiences should be listed under outreach (section IIID). Under the “Meeting/Venue” heading indicate either the meeting (full name and location) or the on-campus function (class, event, etc.). Indicate whether you, your student or collaborator presented the paper in each case by **putting the presenter’s name in bold**. Asterisk any student presenter.

N/A

- G. Conferences Attended.** Make entries here if either you or your student(s) or both attended a conference or collaboration meeting.

Conference Title	Faculty	Date
Cyber-Physical Systems Summit (Newport News, VA)	Benton	2016 Sep 19-21
Digital Raign “Shifting the Paradigm” VR/AR Summit (Big Sur, CA)	Benton	2016 Oct 9-14
Transformative Technology Conference (Palo Alto, CA)	Benton	2016 Oct 14-15
South By Southwest (SXSW) (Austin, TX)	Benton	2017 Mar 8-15
First International Seasteading Conference (Papeete, Tahiti, French Polynesia)	Benton	2017 May 15-18

H. Professional Workshop/Short Course Participation.

Faculty	Role	Workshop/Short Course	Where	Dates
Morgan Benton	Participant	LoopBack, MongoDB, and Continuous Integration	Webinar	2017 Mar 28
Morgan Benton	Participant	Harassment in the Sciences	Webinar	2016 Sep 19

- I. Membership in Professional Organizations.** Please give the full organization name, not just the abbreviation or acronym.

Organization	Faculty name	Office Held
Association of Computing Machinery	Morgan Benton	Member
IEEE Computer Society	Morgan Benton	Member

- J. Scholarly projects.** List work in your area of professional expertise. These might include projects for non-profit or government organizations, for businesses, for JMU, or for some other entity.

Faculty name	Project title or tagline	Brief description
Morgan Benton	MyTime for Caregivers	I lead development of an app to help promote the health of caregivers.

K. Honors and Special Recognition Received.

N/A

L. Review work for publication or conferences. Include JMU publications but clearly indicate them as such. This includes service as editor of a national or international journal or referee of papers for such a journal.

N/A

M. Reviewing Proposals for funding agencies. If the review is done as a member of a panel, give the panel dates, give the number of proposals you read and the subject area of the panel.

N/A

N. Professional Consulting.

Faculty name	Company or Organization	Brief description of work
Morgan Benton	Morphatic	I am the owner/founder of a web consulting company and do small projects for a number of private clients.
Morgan Benton	Tony Britt's Spotter Charts, LLC	I am part owner and founding member of this company that produces "cheat sheets" for TV/radio football announcers.

O. Ongoing, unpublished scholarly activity or other significant contributions. List any other scholarly achievements that you feel are significant but do not fit into the above categories. For example, indicate contributions to funded research for which you are not listed as a PI or co-PI or patents granted. If you organized a conference or workshop, please list it here. Put your name in the left hand cell and the information in the right hand cell.

N/A

P. Ongoing unpublished/un-presented work. Discuss the significance of the items listed in II.A through II.N. Particularly discuss your contributions to collaborative efforts and put these in context. Indicate which items are particularly noteworthy and explain why. For efforts that are part of an ongoing program, put this year's work into a context. Indicate which, if any, items represent the conclusion of a particular component in your work or the initiation of a new direction. Put your name in the left hand cell and the information in the right hand cell.

Morgan Benton	<i>Grades Suck.</i> This is a book which gives a cross-disciplinary analysis of the institution of grades, primarily in academic settings, why we should get rid of them, and some possible avenues.
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II. PROFESSIONAL SERVICE**A. Service to the University, College, and Department (including programs).** List the name of the committee chair and indicate the level of the committee. Your name will appear twice if you are the chair of the committee. Please list any student group/club advising here.

			Level		
Your name	Committee or Group	Chairperson	Dept	College	Univ
Morgan Benton	Assessment	Morgan Benton	X		

Morgan Benton	IKM/TNS Technician Search	El-Tawab	X		
Morgan Benton	Teaching Evaluation Task Force	Pappas	X		
Morgan Benton	ISAT Capstone Load Distribution Task Force	Benzing	X		
Morgan Benton	IKM Team	Morgan Benton	X		
Morgan Benton	Social Context Team		X		
Morgan Benton	Foundations Review Team	CJ Brodrick-Hartman	X		
Morgan Benton	Ethics Slam Team			X	
Morgan Benton	CISE IT Committee	Livia Griffith		X	
Morgan Benton	Faculty Senate	Audrey Burnett	X		X
Morgan Benton	Senate Academic Policies Committee	Morgan Benton			X
Morgan Benton	Academic Calendar Review Committee	Donna Harper			X
Morgan Benton	Fueled Food Truck Course	Benton/Gabriele			X
Morgan Benton	Japanese Language and Culture Club Sponsor				X
Morgan Benton	Provost Search (met with all candidates)				X

B. Service to your professional community.

N/A

C. Service to the Community.

N/A

- D. Exceptional contributions.** If your contributions to any of the above committees are significant (beyond the usual work load and/or of particular importance to the department, college or university, instructional leadership), please explain. Include here, as well, any major effort to solve a problem at the local, state, national, or international level providing a significant benefit to society and in an area directly related to one's professional expertise.) Put your name in the left hand cell and the information in the right hand cell of the table.

Morgan Benton	<p>JMU Academic Calendar Review Feedback</p> <p>As chair of the Senate APC and as the Senate Faculty Representative to the JMU Academic Calendar Review Committee, I led an effort to collect feedback from all of the faculty at JMU with regard to their thoughts and attitudes toward a set of proposed changes to the JMU Academic Calendar. We had an over 80% response rate and submitted a very thorough and detailed report back to the Senate and to the Calendar Committee.</p> <p>Assessment Committee Chair</p> <p>As chair this year, I organized the collection of videos from the ISAT Senior Symposium which required training and overseeing approximately 40 students as they accomplished a very logistically complex task. I also uploaded hundreds of gigabytes of videos to the web, put together a system for having them rated using the ISAT Spine rubric, and oversaw the rating. I also contributed to the production of the ISAT APT.</p> <p>SET Task Force</p> <p>Although not chair, I have led the SET Task Force. I wrote up a 3000 word analysis of our goals and operating principles, gathered all of the materials and sample instruments that we've used as the basis for our work, and I initiated and coordinated a thorough evaluation of the IDEA SET instrument, which involved conducting a webinar with the CISE Dean, Associate Dean, and AUH from ISAT and Engineering. I also met with Sarah Cheverton and other university-level officials with regard to the possibilities of acquiring a new SET delivery tool.</p>
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- E. **Administrative role.** If you had a significant administrative role, please list your position title in the left hand cell and a brief description of your work and major accomplishments in this role in the right hand cell.

N/A

- F. **Other professional service.** List here anything that does not fit into any of the above categories, including initiating and carrying out a program which leads to a significant increase in ISAT departmental or JMU resources, or in ISAT's or JMU's ability to perform its mission. Explain why these are noteworthy and how they impact your scholarship, teaching or service. Put your name in the left hand cell and the information in the right hand cell of the table.

N/A

III. THIS YEAR'S MAJOR ACCOMPLISHMENT

Indicate what you feel is your single most significant accomplishment this year. Explain why it is particularly important to you, your students or the department. Describe how it has or will impact your scholarship, teaching or service. If you expect this accomplishment to have a continuing impact and appear in your anticipated activities report, note this and explain. If this will have a broader impact on the department, discuss this. Put your name in the left hand cell and the information in the right hand cell of the table.

Morgan Benton	This is a subtle but very significant accomplishment. This year I began to integrate the junior ISAT 490 students into the senior ISAT 492 capstone meetings. I had my capstone students present as early as possible in the fall semester in 490, and as soon as we'd accepted a student onto a team, we invited them to join our weekly meetings. That meant that by the time they reached the end of the spring semester, they were fully up-to-speed on the work that the seniors had done, had carved out their own niche in the project and wrote some of the best 491 proposals I've ever seen. After this year, I'm confident that I'll never have abandoned projects that are 75% done left over when my seniors graduate. Now I know that I'll have continuity from year-to-year and this will lend to a great increase in the quality and impact of the capstone projects over time as the research strands mature.
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IV. Self-Reflection

Please spend a little time to reflect upon your professional performance during the past year. Write up a short essay (no more than one page, please...one good paragraph may be sufficient) **for each of the following four areas.** Please include specifics as well as a general overview. Include highlights, lowlights, ongoing challenges, or other meaningful commentary. The goal is for you to reflect on your professional experiences during the past year

A. Teaching

Although it hasn't all gone according to design, I'm much more satisfied with my teaching this year than I was last year. Last year I felt very demoralized and struggled to bring energy to my teaching. This year, I feel I've regrouped somewhat and have several accomplishments to show for it.

First, I'm extraordinarily pleased with how my capstone teaching is going. By the end of the spring I was successfully managing 19 students in 5 projects. About half of them were seniors and the other half juniors. The senior teams have all recruited juniors to take over their work and have incorporated their efforts into their weekly

work. I meet with all the teams at least an hour a week, and I really feel like I've got a sustainable system in place. In the past, my biggest complaint was that students got about 75% of the way towards completing the software they were building, which was enough to present at symposium, but not enough to launch a product, and then they would graduate and abandon the project. In 11 years, I've only had one project that ended up getting launched and commercialized. Now that we have the new 4-semester 49x sequence, I'm really excited that this won't happen as much anymore because I can recruit students to carry on the projects and get them involved much sooner. This seems to be happening better than I'd hoped.

Second, I'm really pleased with how the ISAT 345 Software Engineering class ran in the fall. It really felt like a little software company, and the students raved about how much the content of the course helped them in their interviews for jobs and internships. In fall 2015, the class was a bust. In 2016, I took the learnings from the previous year and turned it into a vibrant community. In 2017, I hope to build upon that success and actually deliver some working software by the end of the semester.

Finally, ISAT 252 Programming and Problem Solving, continues to frustrate me. I have a well-developed structure for the class, including software I wrote specifically to manage the class. I've got excellent attendance. I have first-rate content. And yet, students are not responding with the enthusiasm or the effort that I'd like. I think I moved in the right direction this spring, but I'm going to have to work harder on it next year to really get people hooked.

B. Scholarship

Nicole and I carved out a brand new research area this year. After attending the Digital Raign "Shifting the Paradigm" Summit on virtual/augmented reality (VR/AR) in October, we were able to leverage the relationships we formed there with industry leaders to initiate a number of new VR/AR projects. Specifically:

- o We wrote a grant proposal to NSF for \$500K. It was not funded, but we got valuable feedback and already have identified opportunities to break it up and resubmit pieces of it elsewhere.
- o I started a capstone project with JunoVR to help them prototype and build breath sensors meant to work with VR systems (Oculus Rift to start).
- o Our student Skylar Jared, who attended the Summit with us on behalf of the X-Labs, taught a course in the X-Labs on VR/AR development (in conjunction with 4VA and a professor from GMU), and gained a lot of experience on how to teach VR/AR
- o I was able to mentor Akram Abdou as he launches his business, Presence, which is a social media platform for 360° photo/video

We're at the bleeding edge of a new wave of technology, and I'm proud of the fact that Nicole and I have put ISAT in a place to claim that we are on that cutting edge.

Similarly, we are doing the same for Internet of Things (IoT) work. We mentored a capstone (Chris Bell) in which he worked to come up with a design and production strategy for IoT bubble tubes (an assistive technology for people on the autism spectrum). Also, the breath sensor we're designing for JunoVR will also incorporate wireless technology and could potentially be harnessed for IoT applications outside of VR/AR.

C. Service

I'm most pleased with my efforts as chair of the Faculty Senate Academic Policies Committee, particularly as it pertains to the work we've done collecting feedback related to my work on the JMU Academic Calendar Review Committee. Not only was I successful at running a process that garnered feedback from over 80% of JMU faculty members, but also I was able to craft the questionnaire and manage communications in a way that prevented any sort of major uproar or conflict between the faculty and the administration. I feel like I'm demonstrating the ability to work strategically and collegially at the university level, and that I'm building credibility that will come in handy when attempting more ambitious projects at the university level. In particular, this year the acting Speaker of the Faculty Senate, Mark Piper, and I would like to float an initiative to change the university's grading system

to go from its current A-F, to the model that Brown, Tufts, and some other major schools use: A-B-C-no-credit. We're convinced that JMU will not become the national model of anything unless it is willing to take some risks and do some things that no other colleges in the country are doing.

Second, I'm pleased with the leadership I've shown on the student evaluation of teaching (SET) task force. The majority of the documents that the committee has developed were written by me, and I don't think we would be in the position we are in now if I weren't able to bring my years of experience in assessment and evaluation to bear upon this problem. I feel very good about the chances the task force has to show up at the August summit with a well-thought-out instrument that we can share with the faculty.

- D. Department/University citizenship (Include any contributions or responsibilities that may not fit in other categories of this report.)

Departmental Feedback

What do you feel we have accomplished, as a Department, in 2016-2017?

The effort to create and vote on our **Departmental Values statement** was a good first step towards creating a safe, welcoming, thriving community within which we can all grow and work towards our goals, both personal and collective.

What should our priorities be for improvement, as a Department, for 2017-2018?

I'll say again, as I've said in almost *every* FAR/FAAP that I've written since 2007: **uncollegial behavior is a HUGE problem in our department!!!** The Values statement that we developed last year needs teeth that can be used to resolve disputes (as a last resort), but more pro-actively to foster a culture that prevents us from having so many conflicts in the first place. There are pro-active things we can do to accomplish this, mostly revolving around creating opportunities for low-stress, highly-enjoyable interaction amongst the faculty, and then working really hard to make sure that the "problem" people are there and participate. We could also have sensitivity training so people can understand what harassment really is. We should have conversations about what a faculty member's role really needs to be, so that we can exempt people from having to do things they really would rather not do, and give people more opportunities to exercise their strengths.

Suggested Discussion Topics for the August 2017 Summit:

1. ABET Self-Study
2. How to make the Values Statement enforceable
3. Pro-active ways to foster the culture that we'd like to see

Faculty Anticipated Activities Plan For 2017 - 2018

1. Teaching Activities

Percentage of Load: 50%

Classes to be taught: ISAT 252, 340, 345, 348, 440, 430?, 492/493

Other discussion:

2. Professional Service Activities

Percentage of Load: 20%

Department committees, roles, rough effort levels (hours/month): Assessment (4), IKM (1)

College committees, roles, rough effort levels (hours/month): CISE IT (0.5)

University committees, roles, rough effort levels (hours/month): Faculty Senate and APC (6)

External committees, roles, rough effort levels (hours/month):

Other (describe):

3. Scholarship and Professional Development Activities

Percentage of Load: 30%

Projects or other efforts, roles, rough effort levels (hours/month):

- Capstone projects: 12
- Software development: 12
- Book writing: 6

Other (describe):

4. Other Activities

Percentage of Load:

Description of Activities:

Equipment needs: If there is a piece of equipment that you would like the Department to purchase, please list it below. (Note that writing it here does NOT mean that we necessarily will buy it!)

Nicole and I need a computer that is powerful enough to run our Oculus Rift VR system. Not having such a computer is blocking us from doing basic research with our students. We *might* be able to do this by just purchasing a graphics card that is powerful enough and will fit into the computer that Chrissy has already set up for us, but of course it would be preferable to get an entirely new system. It has to be a high-end system in order to handle the VR, so we're probably talking about something in the neighborhood of \$4,000.