

AC 2009-1909: TEAMING WITH POSSIBILITIES: WORKING TOGETHER TO ENGAGE WITH ENGINEERING FACULTY AND STUDENTS

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Jan Fransen is the Civil and Aerospace Engineering and Mechanics Librarian at the University of Minnesota—Twin Cities. Jan earned her MLIS from Dominican University/College of St. Catherine in 2008, joining the library world after two decades as a computer consultant, trainer, and writer. Her undergraduate degrees are from the University of Minnesota: a B.A. in Speech-Communication, and a B.S. in Aerospace Engineering and Mechanics.

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Jon Jeffryes is the new Biomedical and Mechanical Engineering and Standards Librarian at the University of Minnesota—Twin Cities. Jon graduated with an MA-LIS from the School of Library and Information Studies at the University of Wisconsin—Madison in 2006 and has a B.A. in English from Grinnell College. Jon previously worked as an instruction and reference librarian at UW-Madison's Wendt Engineering Library.

Teaming with Possibilities: Working Together to Engage with Engineering Faculty and Students

Last summer two of us moved into a shared office, starting our new positions as engineering librarians at the University of Minnesota. We support four engineering departments that total more than 100 full-time faculty, nearly 500 graduate students, and well over 1000 undergraduates. Janet Fransen has an undergraduate degree in engineering and was beginning her first library position after 20 years working in the technology sector. Jon Jeffryes has a background in the humanities and two years of professional library experience at the engineering library of another university. But neither of us had experience as a liaison librarian.

When we started our jobs, we found ourselves sifting through the long list of duties in our job descriptions, contemplating just where to begin. As newly-minted librarians, we looked to the literature as well as our fellow liaisons for guidance. The job of a liaison librarian is busy and multi-faceted. The Reference and User Services Association division of the American Library Association includes expectations ranging from formal activities—"surveys of library users, faculty, staff and students to evaluate their satisfaction with library resources; regular meetings with faculty to ascertain planned curriculum developments and to identify new resources; communication of available materials and services; and establishment of a process by which library users can suggest purchases"—to the informal "participation in campus organizations and activities, monitoring campus media for activities and events that affect collections, and encouraging library use and support by nonusers."¹

As if these static lists weren't enough, the liaison's role continues to evolve. As Frank, et al. posit, "the changing nature of scholarly communication and inquiry requires a more dynamic, communicative, and customized approach."² As the needs of our users change with the times, the trend in liaison librarianship is a move toward more time-intensive, personalized services. With such a wide variety of activities ahead of us and limited hours in the day to test all possible methods, we decided to make the most of our differing strengths and experiences and formed a team approach to meeting the information needs of our engineering audience.

Both overachievers, we tend to want to do it all ourselves. But between the numbers and the quickly changing landscape, we saw that we could be more effective if we worked together. So together we're reaching out to our users through instruction, scholarly communication, and—of course—marketing. Katzenbach and Smith's definition of *team* has helped us step back and learn from each other's experiences: "a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable."³ Echoing Baughman's findings at the University of Maryland, we hoped that our team would "bring together a broad range and mix of individuals' skills in a collective way to support problem solving."⁴

Marketing

Before we started our jobs, our academic departments had, naturally, worked with other librarians. Our predecessors had formed relationships with their departments and particular faculty members. In some cases, we were able to pick up where they left off. But we've found

that many faculty members and most students don't yet know of all the services that an engineering librarian can provide. We're trying several different avenues to communicate with our users. When possible, we're finding ways to assess the effectiveness of these avenues using different statistic aggregators or anecdotes.

With so many people to meet and few opportunities to do so in person, we set about creating an online presence for ourselves and our library that allows us to enter our users' worlds at their convenience. We continue to add facets to that presence as we encounter new tools, giving our users a variety of options for finding out about library happenings as a part of their personal workflow. By experimenting broadly with different means of promotion and communication, we will gain a better sense of what works with our user communities.

Marketing: About Me Page

The University provides a small amount of server space for individual websites, so Jan set up the **About Me page** shown in Figure 1 with information on the library services she can provide. She's also highlighted the fact that she is an alumna of the University's Aerospace Engineering department, one of the departments she now supports. A link to the About Me page appears on all other web pages where Jan is listed, as well as in her email signature. Except for a Twitter feed in the sidebar, the content is static.

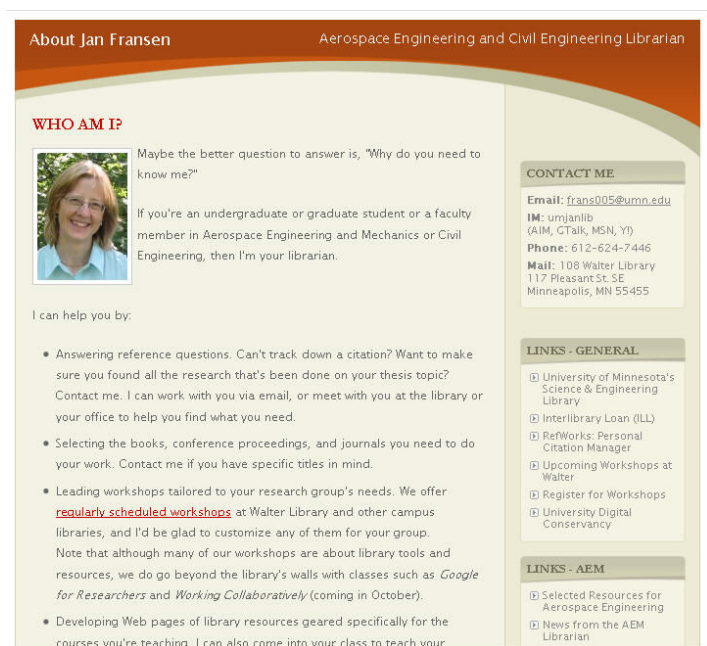


Figure 1. Jan's About Me page introduces her to students, faculty, and staff in her departments.

Marketing: Blogs

Following the lead of our fellow Science & Engineering librarians, we've set up **blogs** for each of our departments. The University of Minnesota Libraries offers free Movable Type-based blogs to any affiliate, so maintaining our own blogs advertises our services and also helps us maintain the skills we need to offer technical support to our users. We assume that our users will only

subscribe to one of our blogs at most, so we save time and keep the content fresh and relevant by copying posts from each other. Jon is particularly adept at searching Flickr for Creative Commons images to dress up the posts, as shown in Figure 2.



Figure 2. We use our blogs to promote workshops, new resources, and library events.

In such a large institution with so many web pages, blogs, and resources, our blogs are difficult to discover. We have included links to our blogs on our subject resource pages, so when library users go to our “Mechanical Engineering” resources page they are greeted with a link to “Mechanical Engineering Library News.” We also publicized the blogs in our initial meetings with our departments and in our graduate student orientations. One colleague has addressed this issue successfully by emailing a monthly summary of blog posts to the people in her departments. We’ll be adding that approach in the Fall 2009 semester.

Marketing: Twitter

As **Twitter** began to grow in popularity, our library's staff decided to set up Twitter accounts for sharing links and other quick bits of information. We set up an account for the library itself, initially for posting news for internal use. But after that account received numerous "follow" requests, Jon took responsibility for the account and made it public, as shown in Figure 3. He uses it to do last minute advertising of our public workshops, push traffic to announcements on our blogs, and notify followers of changing library policies and hours.



Figure 3. Find our Twitter feed at <http://twitter.com/umsciref>.

Although many users have found our Twitter account on their own we also publicize it. We recently posted print advertisements around the library detailing our new online presences. We're also working to incorporate a Twitter Feed on to our library's website. Jon also does periodic searches on Twitter to see what users are saying about the library. When appropriate he responds as the library, which has also brought some users to our Twitter account.

Marketing: Facebook

Meanwhile, Jan noticed that the campus auditorium near the library had started a **Facebook** page and was using it to advertise upcoming events. During the quiet winter break, she set up a page and added the library's winter workshops as events, as shown in Figure 4. Each member of the staff with a Facebook account is an administrator for the page, so library instructors can add links and images to the workshops they teach.



Figure 4. We use our Facebook page to promote library workshops and other events.

We ran a Facebook ad, shown in Figure 5, at the beginning of the semester, targeting 18-25 year

old students at the University of Minnesota's Twin Cities campus, and received a surprising number of click-throughs, as well as a few new fans. At least one workshop attendee found out about and registered for that workshop after seeing that one of her Facebook friends was attending.

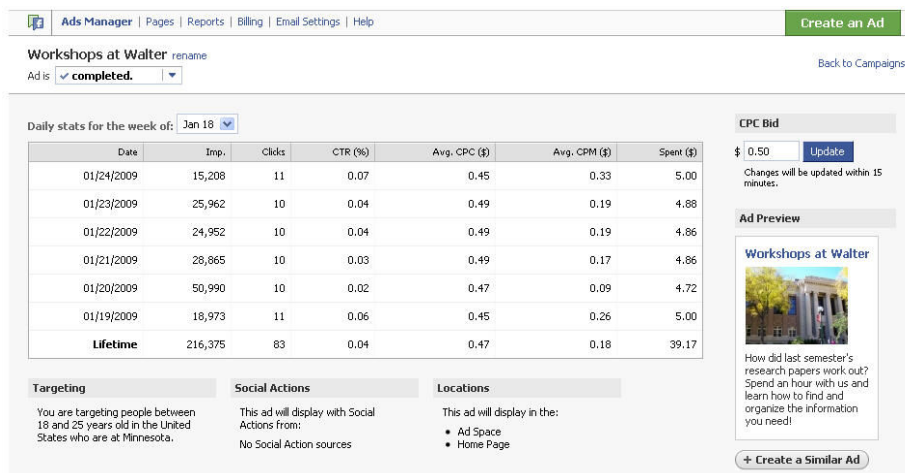


Figure 5. During the week our ad ran, 83 students looked at our page.

Marketing: Measuring Results

With so many services available, it would be easy to spend all of our time updating and tweaking our various social networks. Whenever possible, we find ways to cross-pollinate these services, advertising our Facebook presence on Twitter and adding our tweets to our Facebook page as an RSS feed. To determine whether our efforts are paying off, we are using a URL shortener, bit.ly (http://bit.ly), that allows us to track how many clicks the links we post receive. By using bit.ly we can tell, for example, how many people are motivated to find out more about a workshop after seeing it listed as an event on Facebook. The spreadsheet in Figure 6 shows a spike in clicks between February 20 and February 28; that coincides with Jan emailing a list of upcoming workshops that included the bit.ly links to faculty and graduate students in her departments.

	B	C	D	E	F	G	H	I	J
	Description (for Info tab)	Bit.ly link	21-Jan	22-Jan	26-Jan	16-Feb	20-Feb	28-Feb	6-Mar
1	Refworks Basics	http://bit.ly/pkHS	0	0	0	0	0	0	0
2	Wikipedia	http://bit.ly/od7p	0	0	0	0	0	7	8
3	Collaborating	http://bit.ly/157nC	0	0	0	0	0	0	0
4	EndNote	http://bit.ly/Y5ci	0	0	0	0	0	0	0
5	Keeping Up	http://bit.ly/Z8l	0	0	0	0	0	1	1
6	Zotero	http://bit.ly/90NG	0	0	0	0	0	5	6
7	Web of Science	http://bit.ly/RF8X	0	0	0	0	0	0	0
8	Grant Funding	http://bit.ly/OQ5T	0	0	0	0	0	0	0
9	Quiz Bowl	http://bit.ly/h75W	0	0	0	1	1	1	1
10	SciFinder Scholar	http://bit.ly/EBPY	1	1	1	1	1	1	1
11	Engineering Info	http://bit.ly/iTRr	0	0	0	0	0	0	0
12	Getting Published	http://bit.ly/15iFG	0	0	0	0	0	4	4
13	Dissertation	http://bit.ly/wl5s	1	1	1	1	1	1	1
14	Grant Funding	http://bit.ly/deWX	1	1	1	1	1	1	1
15	Autoalerts	http://bit.ly/98RN	0	0	0	0	0	0	0
16	PowerPoint	http://bit.ly/YnBG	1	1	2	2	2	2	2
17	Creative Commons	http://bit.ly/VmYm	0	0	0	0	0	0	0
18			4	4	5	6	6	23	25

Figure 6. With the Bit.ly API and a little bit of code, Jan put together a spreadsheet that tracks clicks on links to our workshops.

Marketing: Being Present

Web-based tools have opened up new marketing avenues, and we've found them to be worthwhile overall. But our interest in these tools does not mean we want to be available to our users solely online. In addition to offering instruction to our faculty and students, we are looking for more subtle ways to make sure they know who we are. On a large, sprawling campus like ours, and with most of our library resources available online from any location, we're unlikely to encounter the people we support without some kind of plan. As a start, we're finding out about and attending events and seminars organized by or marketed to the departments we support.

During the Fall semester, Jan attended weekly graduate seminars in the Aerospace Engineering department. The experience helped her become more familiar with research interests within the department, and served to remind students and faculty that there is someone at the library who is focusing on their information needs. Just in case seminar attendees don't yet know who she is, she always wears her Library nametag and carries a bright orange library-supplied messenger bag. Effectiveness can only be measured anecdotally, but partway through the semester graduate students were asking her quick questions about the library's collections before and after the seminars. By sharing her continued anecdotes of success at particular events, Jan assists Jon in his strategic planning of attendance at departmental events.

Instruction

As academic librarians, we consider instruction to be one of our core responsibilities. We both love to work directly with students through in-person instruction, but know that at an institution of this size we need to provide quality instruction in other ways as well.

Course-based Live Instruction


Each of our departments offers a Senior Design class with 50-100 students each. The library is currently integrated into the Mechanical Engineering and Biomedical Engineering classes. Those two departments are Jon's liaison assignments. Jon, working with the faculty and from the notes of his predecessors, has taught these classes solo this first year in a lecture-style format that briefly discusses the different types of information that can be found in the various forms of engineering literature, as well as best practices in searching. Over the semester Jon is tracking the amount and type of questions that come from that course, noting when students mention the library session or course number in their emails and conversations, and keeping track of any follow-up research sessions that come from the class. Jon plans to analyze those messages as well as usage statistics from the pages of library resource links that he created for the classes in the library's LibData system (see "Course-based Online Instruction" below) and advertises in the sessions.

With all of this data Jon, along with Jan, will begin to discuss ways that we can support one another in the instruction of these large, course-integrated classes. We will use the data to illustrate the benefits of incorporating a library session in the Senior Design classes and provide these stories to the Civil Engineering and Aerospace Engineering departments which are not currently incorporating library sessions. The data will also shed light on how students are reacting to the information as we currently provide it: We will learn what is not being conveyed

successfully in the library sessions and whether the current content meets the actual research needs of the students. We can use this information to re-evaluate our instruction scripts and look at ways to incorporate active learning and team teaching. Our goals include making the library sessions more engaging and giving the impression of "shrinking" the size of these large classes.

Live Workshops

We are also teaming up together and with our library's successful workshop program to pilot new stand-alone library classes. The Science & Engineering Library's promotional strategy for workshops includes posters in the library and in the academic departments we serve (shown in Figure 7), a blog that feeds the sidebar on the library's home page, and regular emails from the liaison librarians to the faculty and students in their departments. Occasionally our workshops catch the attention of those who put together UM Brief, a weekly University-wide email that highlights campus news, attracting staff in addition to students. Certain classes are cross-promoted with other University entities. We began using the Facebook page and Twitter feed as promotional tools during the Spring 2009 semester.



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WORKSHOP SERIES

MARCH 2009

SCIENCE Workshops:

Zotero : an introduction
An introduction to the "free" Firefox extension that allows you to collect, manage and cite your research citations with ease.

Google for Researchers
We'll look at tools such as, Google Docs, RSS Reader, Google Scholar, and iGoogle Research Gadgets that will help you access, evaluate, and share information in an easy collaborate environment.

Grant Funding for Grads
Find out more about funding opportunities available to graduate students. Learn how to use IRIS, SPIN, and Community of Science and the Foundation Directory to search for grant opportunities. Setting up e-mail updates on specific subjects will also be covered, as well as how to find internal U of M funding sources.

RefWorks Basics
Learn the basics of using RefWorks, the Web-based citation manager that is available to all U of M Faculty, students and staff. Adding references to RefWorks will be covered, as well as exporting them to Word, and selecting a style (MLA, APA, etc) for your bibliography. See <http://www.lib.umn.edu/refworks/> for more details about RefWorks.

Autoalerts for Research
This is an easy-to-use technique for staying up to date with news and research literature for a specific discipline or topic. This workshop will demonstrate some introductory methods for setting up autoalerts for your work. Demonstrations will focus on health and science topics.

Create your Poster in Powerpoint
Getting ready to do a poster at an upcoming conference? Learn pointers about using Powerpoint to create the poster as one giant slide, and send it to a large-scale printer.

Introduction to SciFinder Scholar
Learn how to use SciFinder Scholar to find information on chemical substances and literature from chemistry and a wide variety of related fields including food science, geochemistry, materials science, medicine, and more. We'll cover tips and tricks and the basics of structure drawing.

Endnote for Science & Engineering
An introduction to using EndNote. Learn to import citations, customize your account, and format your bibliographies and in-text citations. We'll also discuss EndNoteWeb, a web-based version of EndNote available for free to current U affiliates.

DATE	WORKSHOP	TIME
March 9	Zotero	1:25 - 2:25 pm
March 10	Google for Researchers	2:30 - 3:30 pm
March 17	Grant Funding for Grads	2:00 - 3:15 pm
March 23	RefWorks Basics	2:30 - 3:30 pm
March 24	Autoalerts for Research	1:30 - 2:30 pm
March 25	Create your poster in PPT	3:30 - 4:30 pm
March 30	Intro to SciFinder	4:00 - 5:15 pm
April 8	EndNote for Sci / Eng	3:30 - 4:30 pm

...and more!

These workshops take place in Room 310 Walter Library

Many more workshops are available through the Libraries:

find out more at the registration website below

Questions about workshops? Contact:

Jody Kempf
j-kemp@umn.edu
612.626.1676

To register for a class, go to: <http://www.lib.umn.edu/registration/>

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Figure 7. We continue to find that "old school" posters make effective advertising.

In the Spring 2009 semester we created a new drop-in workshop directed specifically to engineering majors, "Engineering: Find Better Information Faster." This workshop covers information that might be missing for those students who aren't in a class that includes a library component. We show the engineering students the different types of resources available to them for research (resources such as patent searching information, the library's standards collection, and book and journal article searching), as well as tips and techniques for the research process. We provide attendees with hands-on experience searching in relevant databases and search engines.

We hope to use "Engineering: Find Better Information Faster" to meet the information needs of our users that aren't being met in the current curriculum. If the workshop is well-received, we will use attendee statistics and student comments from our workshop evaluations to build a case for faculty to bring our workshops into their classrooms and integrate these skills into their syllabi and assignments.

Another stand-alone workshop that we started teaching in Spring 2009 comes from a collaboration with our library's instruction coordinator. This workshop assists in the library's mission to meet the general information needs of the larger campus community with a workshop on the new free reference manager, Zotero. ("Zotero: An Introduction"). Splitting up the development of the instructional script and handouts among three people makes for less individual preparatory work and provides the library with three "experts" to whom others can refer reference questions.

Jan and Jon have also taught two pre-existing library workshops together: RefWorks Basics and Google for Researchers. The experience of co-teaching these drop-in workshops has been positive. Not only has the team approach cut down on prep time, but having another person to roam the classroom and help students troubleshoot issues—instead of stopping the class or allowing the student to remain lost—makes for more effective teaching. We've also found that having two personalities interacting in front of the class makes for a more dynamic instruction session. Having one instructor interject their thoughts and questions tends to loosen up the class, modeling for them that they too can feel free to add their own questions and comments.

Course-based Online Instruction

In addition to the wide world of social media, we are reaching out to students and faculty online through the courses they take and teach. We are able to attend and present to a few classes in person, but most engineering syllabi don't set aside a time for bibliographic instruction. Instead, we're using LibData (<http://libdata.sourceforge.net/>), an open-source tool used throughout our library system, to create course-specific web pages for instructors and students. When possible, we collaborate with instructors as we choose resources to include. In preparation for the Fall 2008 semester, Jon took a proactive approach and created pages for the 47 courses offered by his departments and sent instructors links to the finished products such as the page shown in Figure 8.

BMEN 4002W: Biomedical Engineering Design II

Relevant Library Resources

Course Instructors:
Emily Habisch

Table of Contents:

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- [Find Books And More](#)
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- [Find E-Books](#)
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- [Standards](#)
- [Patents](#)
- [Manage Your Research](#)

Your Librarian

- [Jon Jeffries](#)
Biomedical Engineering Librarian
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An industry perspective on biomedical engineering design. Full-text coverage of more than 2,800 journals in business, economics, political science and public administration.
- [Engineering Village](#) 
Find articles, conference papers, and technical reports from every engineering discipline going back to 1884.
- [PubMed - U of M Students, Staff & Faculty](#) 
Find articles on health sciences topics.
- [Web of Science \(ISI\)](#) 
Search 8,000 international journals in the sciences, social sciences, and arts and humanities.

Figure 8. An example of our CourseLib pages that allow us to suggest course-related resources to the students in our departments.

By delivering a finished product instead of just telling faculty about the benefits of the program, Jon found that most instructors are happy to include a link on their course website or in the syllabus.

LibData provides statistics on how many people click each resource link on a course page. The Fall Semester statistics show that the pages were used, especially when linked to by professors or complemented by an in-person class session. The statistics show that less well known resources, such as e-book selections and standards databases, were most popular. We hope that usage will continue to grow as students and instructors begin to expect to find CourseLib pages.

Online Workshop Instruction

We are teaming to explore other means of instructing users with different asynchronous formats. Each of us has taken a different platform for online asynchronous instruction and explored it to see the accompanying positive and negative aspects of the tool. Jan is exploring the uses of Adobe Presenter to recreate some of our live library class sessions. Meanwhile, Jon is using Moodle to create online modules that act as electronic handouts that can reinforce or replace the lessons taught in some of our person-to-person library sessions.

One of the topics that comes up in our library's discussions of instruction is scalability. Our library is staffed by a number of people proportionally meager compared to our user population, and all of us have many other responsibilities. One solution to this is to make our instruction

sessions remotely accessible. With this goal in mind Jan is looking into the possibility of translating some of the in-person instruction sessions she teaches into an online format by means of Adobe Presenter. With these learning objects Jan is hoping to re-create that class feel: Presenter allows you to record audio tracks to narrate the learning, providing an experience similar to attending an in-person workshop. At the same time, the content is self-paced so the user can move through the material at a rate that is comfortable for them. The material is available for viewing at any time that the user wishes to explore or review a topic.

With Moodle Jon is also attacking the issue of scalability, but this tool provides an end product with different strengths. The final learning object in Moodle, shown in Figure 9 is highly modularized, with a table of contents that allows users to jump to specific portions of the class's content. Students can go directly to the information they need and approach the workshop's content in any order they wish. These modules supplement classroom instruction much like handouts, but can provide more depth and easy access through any Internet connection once the workshop is done.

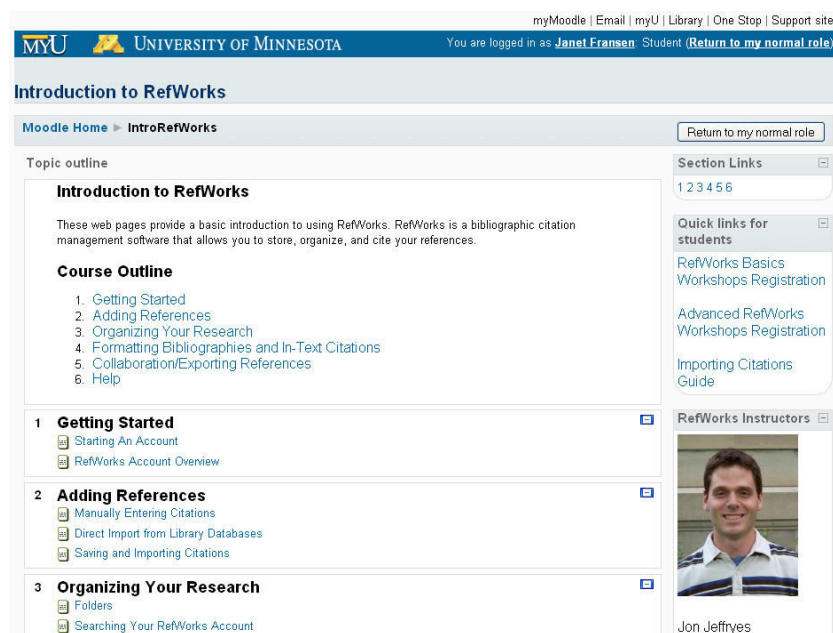


Figure 9. Moodle pages for our courses give the students an effective way to review what they learned.

As we produce more learning objects we will be able to develop best practices about the types of technology that best complement a particular course. We will get a sense of the types of information best suited to each type of technology and adapt accordingly. We can analyze web statistics and view the number of enrollees in our Moodle class and attendees of our classes created in Adobe Presenter to determine the preferences of our users. With each of us taking a particular technology and gaining a facility with it, we're able to cut the time expended in the exploration process in half.

Scholarly Communication

Shortly before we were hired, the library launched a digital repository known as the University Digital Conservancy (UDC) to house the work of the university and its scholars. Building on the

work of her predecessor, Jan assisted the Aerospace Engineering department head in submitting many of his published papers to the UDC. Along the way, she learned about the benefits and pitfalls involved in making published works available to the world through an open institutional repository and shared that knowledge with Jon and other librarian colleagues. By helping one faculty member to create a UDC collection, we have gained a champion who not only understands the value in having his work more widely—and perpetually—available but also sees how librarians can facilitate the process.

Jan is currently working on another, larger UDC project. It involves moving research reports from a university institute's website to the UDC. This large collection includes work by faculty in all of the departments supported by our library, and requires us to check report citations to discover whether each work was later published.

Through Jan's experiences, we have learned how to deal with issues particular to researchers in the engineering disciplines. We are lucky to have another colleague at our library with significant expertise in authors' rights and have found ways to work with particular publishers to gain or retain the rights necessary to deposit work in an institutional repository. In the coming year, we will be leveraging this experience to make a plan for recruiting content and creating collections for our faculty and their departments.

Conclusion

Either of us working alone would not have been able to generate and try as many ideas as we have in our first year. As a team one of us can take the lead on an idea and test the waters, bringing back a model, suggestions for improvement, and best practices to make a wider implementation more successful. As we build relationships with our departments, we are expanding our team to include not just librarians, but the faculty and students we serve along the way.

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