Student research in the institutional repository: The tip of the iceberg

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Student Research in the Institutional Repository

The Tip of the Iceberg
What Is the Institutional Repository?

- An archive for the intellectual output of USU—its faculty, staff, and students
- A tool to make the great work being done at USU accessible to people around the world
- A platform to showcase unique and exciting projects
- And so much more!

Fun facts:
Over 41,000 items in Digital Commons
Nearly 2.5 million downloads total—including one million+ in the last year
Why Put Scholarship in the IR?

- Exposure
- Freely available
- For “gray literature” provides access to work otherwise lost
- Avenue to new opportunities for collaboration
- Alternative metric to demonstrate scholarly impact
Research in Librarianship

- Practicing profession
  - Do something; wonder—what’s up with that?
  - See something; wonder—what’s going on?
  - Plan something; share—what did we learn?

- Student research
  - Not much is being written or studied about it
  - Area ripe for examination
  - Good area for sharing with fellow librarians
  - Potential benefit to USU and other universities and students/faculty
Student Research

- What we are doing at USU
  - Student venues
    - Student Showcase (fairly common at other institutions)
    - Research on Capitol Hill
    - Utah Council on Undergraduate Research, NCUR
  - Off Campus Venues
    - Physics pilot (ALO, Materials Physics, Student Research)
Examples of Collections

ALO Materials Physics

Physics Student Research
People Are Interested in Student Research

- Student research is downloaded
  - Physics student research (UG and Grad)
    - average 47 downloads per item
    - 53 items in series
  - All UG research
    - Average 241 downloads per item
    - 80 items in series
  - All Grad research
    - Average 138 downloads per item
    - 42 items in collections (posters, presentations, publications)
Initial Survey at American Geophysical Union Fall Meeting

- Presented poster about Digital Commons
- Opportunity to survey scientists regarding views on student work in IRs
- When looking to recruit students/employees:

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<th>Response %</th>
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When recruiting students or employees, would the information housed in an IR, such as USU’s, be:
When promoting your programs to prospective students

Do you feel that highlighting your research group's publications in an institutional repository will aid in attracting high caliber students to your program?

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Some Comments We’ve Received

- These group pages make it much easier to evaluate whether a group would be a good fit for a potential student or employees.

- I’ve received several comments at conferences about our group’s site.

- I was contacted for an interview because my research was visible in DigitalCommons (undergrad researcher).
Use + Initial Survey + Local Interest = Time for further exploration

- Questions we want to answer:
  - Who else is actively collecting and promoting student research?
    - 38% if IR’s have some (mostly minimal) student research
  - What can we learn from our colleagues who do capture student research? Plenty!
    - Poor citations (we are guilty too! Fixing now)
    - Poor identification of student level (UG, Grad) or if student or faculty
    - Poor identification of venue—brag about where you send your students (we have fixed this in our IR)
  - Hope to develop “best practices” for profession
### Tuning a Bowtie Slot Antenna with an Equation Based Curve for 900 and 2400 MHz ISM Bands

A dual-band bowtie slot antenna is proposed and designed for the 900 and 2400 MHz ISM bands. Using Rogers 4003C substrate (εr = 3.55) with a thickness of 1.6 mm, the antenna is produced and tested. A comparison is made between measured and simulated data from both a Method of Moments and Finite-Element method software packages. By using a parabolic curve to form the sides of the bowtie slot, the new antenna integrates features from a Vivaldi antenna into its design. Using these features, the antenna achieves dual-band operation while maintaining an omni-directional pattern similar to a normal bowtie slot. The parabolic sides of this bowtie slot antenna offers an additional design element for other CPW fed slot antenna designs.

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- Student Research
Tuning a dual-band bowtie slot antenna with parabolic radiating slots for the 900 MHz and 2400 MHz bands (Conference Paper)

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USU Examples – What We Have Learned So Far

- We learned it is important to add citations and include conference locations and more data:
  - http://digitalcommons.usu.edu/undergrad_research/
Our Questions for...

Faculty

Benefits to faculty
- Would accessibility of student research enhance your reputation or reputation of your department?
- Would this be beneficial to you for any grant funding (showing student involvement in your research)?

Benefits to student
- Would availability of faculty/student research be useful in identifying good matches for grad school?
- Would accessibility of student research on the USU site enhance student’s reputation when applying to grad school or for work?
Our Questions for...

Students...

Impact on school choice (current or future)
- For USU students involved in research...how did you learn about the research conducted at USU before your arrival? What, if anything, would facilitate learning about it?
- What information would you glean by looking at student research at another institution?
- What influences your decision for school choice?

Use of IR
- If you have produced scholarship (posters, papers, presentations), have you deposited it in the IR? If not, why?

Personal Benefit of Use of IR
- If you have a Selected Works Site, have you been contacted by researchers or others as result?
- If you have works in the IR, have you been contacted as a result?
Our Questions for…

- Other IR Librarians:
  - Do you actively collect student research? If so, what scholarship do you collect?
  - What benefits do you see to collecting student research?
  - What challenges do you have collecting student research?
Benefits We Can Imagine…

- Catch the eye of high caliber students, aid in recruitment
  - Prospective students can easily see faculty are involved with students
  - Demonstrates support of student travel and research – indicates climate where student research is valued
  - Shows USU is actively engaged in student research, enhancing reputation

- Provides student with opportunity to build online vita (Selected Works site) when they are active researchers

- Gray literature is captured that is otherwise lost (reports, presentations, posters)

- Students are taught early how to archive and are introduced to concepts of copyright
Next Steps

- Developing Surveys
  - In process of seeking feedback from faculty about questions for survey. Please contact us if interested in helping!

- Examining Other Institutional Repositories
  - Initial review complete
    - Two major software sites (bepress, Dspace)
    - Additional analysis of content over summer