2-12-2014

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

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Recommended Citation
Thoms, Becky L. and Rozum, Betty, "Student research in the institutional repository: The tip of the iceberg" (2014). Library Faculty & Staff Publications. Paper 176.
https://digitalcommons.usu.edu/lib_pubs/176

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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: Green Beam (Rayleigh-Scatter LIDAR)

Materials Physics

Physics Student Research

Utah State University
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)
Presented poster about Digital Commons

Opportunity to survey scientists regarding views on student work in IRs

When looking to recruit students/employees:

<table>
<thead>
<tr>
<th>When recruiting students or employees, would the information housed in an IR, such as USU’s, be:</th>
<th>Response %</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very helpful</td>
<td>68.4</td>
<td>13</td>
</tr>
<tr>
<td>Somewhat helpful</td>
<td>26.3</td>
<td>5</td>
</tr>
<tr>
<td>Not helpful</td>
<td>5.3</td>
<td>1</td>
</tr>
</tbody>
</table>
Do you feel that highlighting your research group's publications in an institutional repository will aid in attracting high caliber students to your program?

<table>
<thead>
<tr>
<th>Response</th>
<th>Response %</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
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<td>9</td>
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<tr>
<td>Agree</td>
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<tr>
<td>Neutral</td>
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<tr>
<td>Strongly Disagree</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
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.
Tuning a dual-band bowtie slot antenna with parabolic radiating slots for the 900 MHz and 2400 MHz bands (Conference Paper)

Berge, L.A.\textsuperscript{a}, Reich, M.T.\textsuperscript{a}, Aziz, M.A.\textsuperscript{b}, Braaten, B.D.\textsuperscript{b}

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Abstract
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 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