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

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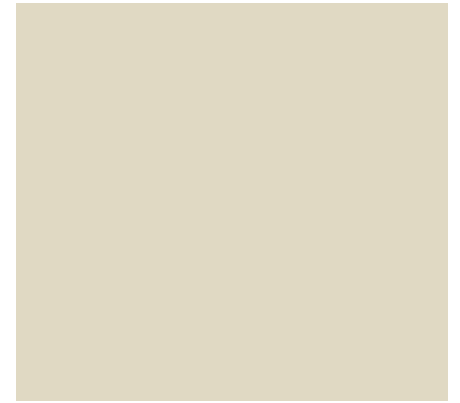
Recommended Citation

Thoms, Becky and Rozum, Betty, "Student research in the institutional repository: The tip of the iceberg" (2014). *Library Faculty & Staff Publications*. Paper 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)

department of physics

Department »

Research ≈

- Overview
- Complexity
- Field Theory
- Mathematical Physics
- Plasma Physics
- Quantum Devices
- Space Science
- Surface Physics
- Student Research**
- Theses and Dissertations

re space activities index LISA Relativity black

Physics Department

Science Week moves forward with a bang

Rocks floated, eggs showed their super strength, balloons exploded and electricity flew at the "What's Cool About Physics?" demo show presented by Physics Department laboratory supervisor James Coburn.

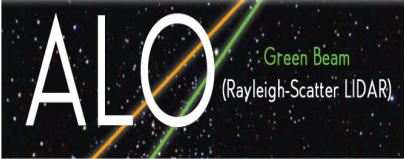
Happenings

Feb 10, 2014
Tuning Evaluation Meeting

Feb 11, 2014
Celebrating 100 Years of



Examples of Collections



POSTERS

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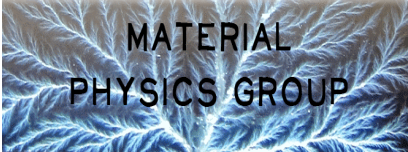
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2013

- [PDF: Mesospheric Density Climatologies Determined at Midlatitudes Using Rayleigh Lidar](#), David L. Barton, Vincent B. Wickwar, Leda Sox, and Joshua P. Herron; International Association of Geomagnetism and Aeronomy, Mexico; 2013
- [PDF: Rayleigh Lidar Temperature Studies in the Upper Mesosphere and Lower Thermosphere](#), Leda Sox, Vincent B. Wickwar, Joshua P. Herron, and Matthew T. Emerick; CEDAR Workshop
- [PDF: Mid-Latitude Rayleigh-Mie-Raman Lidar for Observations from 15 to 120 km](#), Vincent B. Wickwar, Leda Sox, Joshua P. Herron, and Matthew T. Emerick; AGU Fall Meeting 2013

2012

ALO



PRESENTATIONS

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2013

- [Charge Transport and Electrical Degradation Research for Power Grid Applications](#), Allen Andersen and JR Dennison; Utah State University Graduate Student Research Symposium
- [Electrostatic Discharge in Solids](#), Allen Andersen and JR Dennison; USU Physics Colloquium
- [Pre-breakdown Arcing in Dielectrics under Electric Field Stress](#), Allen Andersen and JR Dennison; American Physical Society Four Corner Section Meeting, University of Denver, Denver, CO, October 18-19, 2013
- [PDF: Simulation of UV Radiation Degradation of Polymers on MISSE-6 in the Low Earth Orbit Environment](#), Kelby T. Peterson; Utah Council for Undergraduate Research; Utah State University; February 22, 2013

Materials
Physics

PHYSICS STUDENT RESEARCH

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2014

- [PDF: Characterizing and Quantifying Time Dependent Night Sky Brightness in and around Tucson, Arizona](#), Rachel K. Nydegger and Constance E. Walker; 223rd AAS Meeting; 5-9 January 2014, Washington, DC
- [PDF: Modeling Spiral Galaxy Surface Luminosity to Explain Non-Uniform Inclination Distributions](#), Jordan C. Rozum and Shane L. Larson; 223rd American Astronomical Meeting, 5-9 January 2014, Washington, DC

2013

- [File: Charge Transport and Electrical Degradation Research for Power Grid Applications](#), Allen Andersen and JR Dennison; Utah State University Graduate Student Research Symposium
- [File: Electrostatic Discharge in Solids](#), Allen Andersen and JR Dennison; USU Physics Colloquium
- [File: Pre-breakdown Arcing in Dielectrics under Electric Field Stress](#), Allen Andersen and JR Dennison; American Physical Society Four Corner Section Meeting, University of Denver, Denver, CO, October 18-19, 2013
- [PDF: Mesospheric Density Climatologies Determined at Midlatitudes Using Rayleigh Lidar](#), David L. Barton, Vincent B. Wickwar, Leda Sox, and Joshua P. Herron; International Association of Geomagnetism and Aeronomy, Mexico; 2013
- [PDF: Carrier capture dynamics of single InGaAs/InAs quantum-dot layers](#), K. N. Chauhan, D. Mark Riffe, Addison E. Everett, D. J. Kim, H Yang, and F. K. Shen; Journal of Applied 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:

*When recruiting students or employees,
would the information housed in an IR,
such as USU's, be:*

	Response %	Response Count
Very helpful	68.4	13
Somewhat helpful	26.3	5
Not helpful	5.3	1

AGU Meeting Survey



- 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?

Response % Response Count

	Response %	Response Count
Strongly Agree	47.4	9
Agree	47.4	9
Neutral	5.3	1
Disagree	0	0
Strongly Disagree	0	0

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)

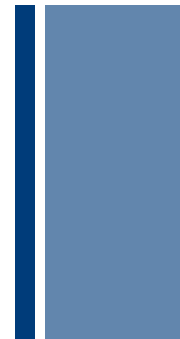


Use + Initial Survey + Local Interest = Time for further exploration

- Questions we want to answer:
- Who else is actively collecting and promoting student research?
 - 38% of 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



Best Practices: Student Research from NDSU




■ Electrical & Computer Engineering Dept.

Tuning a Bowtie Slot Antenna with an Equation Based Curve for 900 and 2400 MHz ISM Bands

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dc.contributor.author	Berge, Layne A.	
dc.contributor.author	Reich, Michael T.	
dc.contributor.author	Aziz, Masud A.	
dc.contributor.author	Braaten, Benjamin D.	
dc.description.abstract	A dual-band bowtie slot antenna is proposed and designed for the 900 and 2400 MHz ISM bands. Using Rogers 4003C substrate ($\epsilon_r = 3.55$) 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.	en_US
dc.title	Tuning a Bowtie Slot Antenna with an Equation Based Curve for 900 and 2400 MHz ISM Bands	en_US
dc.date.accessioned	2011-10-17T14:19:44Z	
dc.date.available	2011-10-17T14:19:44Z	
dc.date.issued	2011-10-17	
dc.identifier.uri	http://hdl.handle.net/10365/18312	
dc.date	2010-01	en_US

THIS ITEM APPEARS IN THE FOLLOWING COLLECTION(S)

- Student Research 

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NDSU Example

Proceedings of 6th European Conference on Antennas and Propagation, EuCAP 2012

2012, Article number 6206023, Pages 2376-2379

6th European Conference on Antennas and Propagation, EuCAP 2012; Prague; Czech Republic; 26 March 2012 through 30 March 2012;
Code 90735

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

Berge, L.A.^a , Reich, M.T.^a, Aziz, M.A.^b, Braaten, B.D.^b 

^a Center for Nanoscale Science and Engineering, North Dakota State University, 1805 Research Park Dr., Fargo, ND 58102, United States

^b Electrical and Computer Engineering, North Dakota State University, 1411 Centennial Boulevard, Fargo, ND 58102, United States

Abstract

 [View references \(8\)](#)

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