So Your Poster Got Accepted -- Now What?

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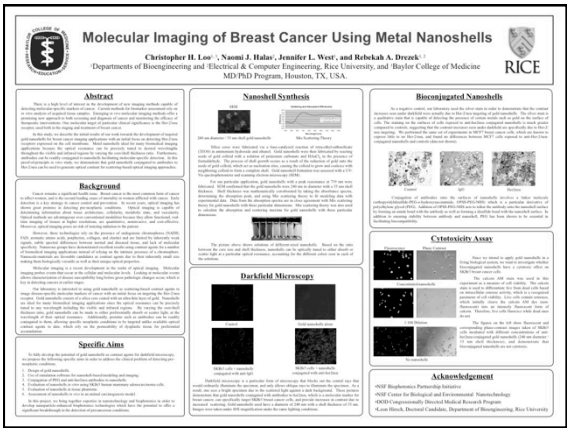
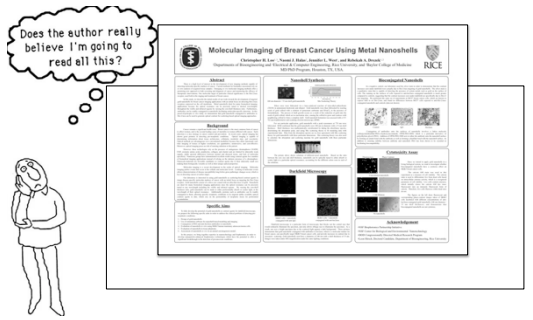
http://math.rice.edu/VIGRE/Images/2009FallPosterAlbum/2009FallPhoto.html

How would you react if you encountered a poster that looked like this?



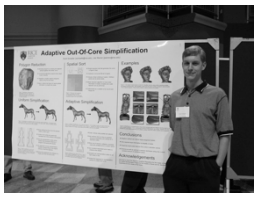


Posters present a challenge

- Audiences
  - Make decisions quickly
  - Come and go
- Posters must be lean and clean
  - Accessible
  - Comprehensible
  - Attractive
- Posters must stand alone

Agenda

- Review design principles
- Apply design principles to poster
- Present poster with confidence



Design for the audience

Why are they interested?
What are their backgrounds?
How will they benefit?
What are their questions?

What's the research story?

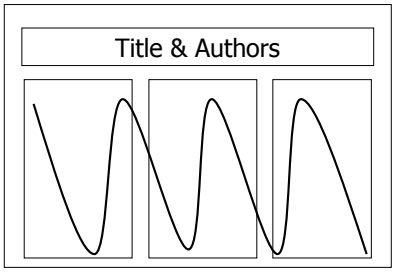
- What problem are you investigating?
- Why is it important?
- What's your objective? research question?
- What's your approach?
- * **What are your results/conclusions?**
- How can your work be extended or applied?

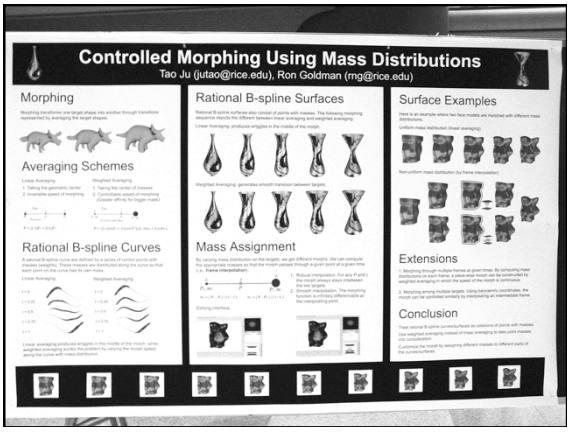
Make the story accessible

- Provide gist
- Use informative headings
  - **Generic**: Results
  - **Topic-oriented**: Cell Proliferation Results
  - **Informative:** Cells Display Exponential Growth
- Reduce jargon/acronyms

Visualize "the story"

L-to-R flow in vertical columns



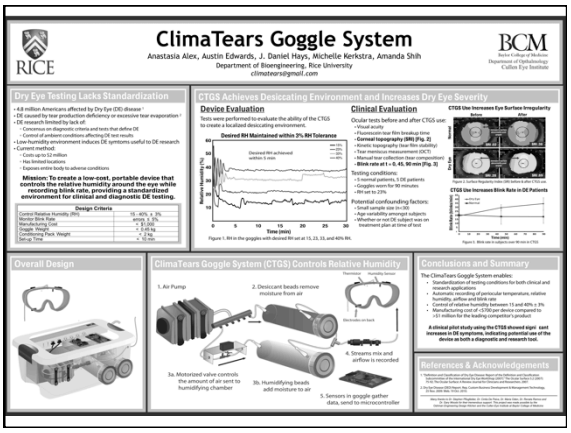


L-to-R flow in rows

Title & Authors

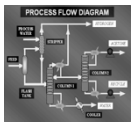
Part 1

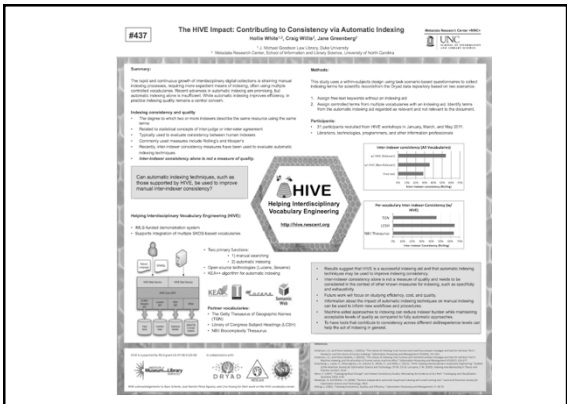
Part 2



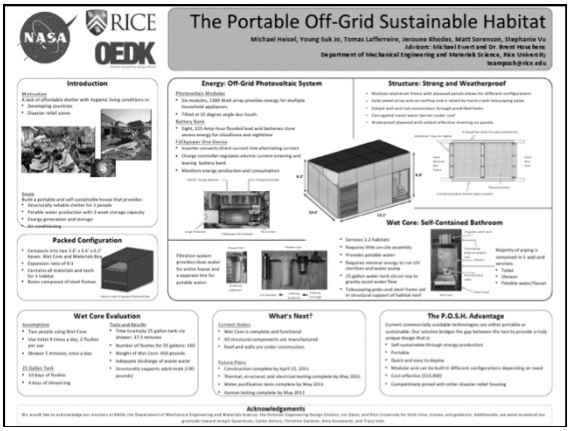
Centered image & explanations

Title & Authors



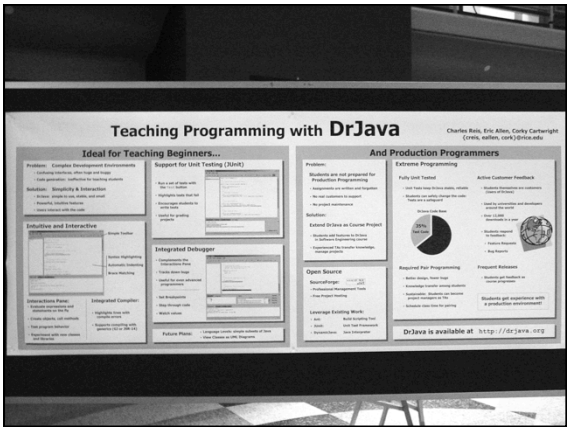


White, et al., 2012

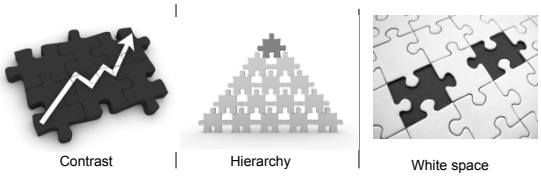


Two fields in contrast

Title & Authors



Arrangement



Contrast | Hierarchy | White space

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Contrast

- Size
- Shape
- Color
- Shade
- Proximity

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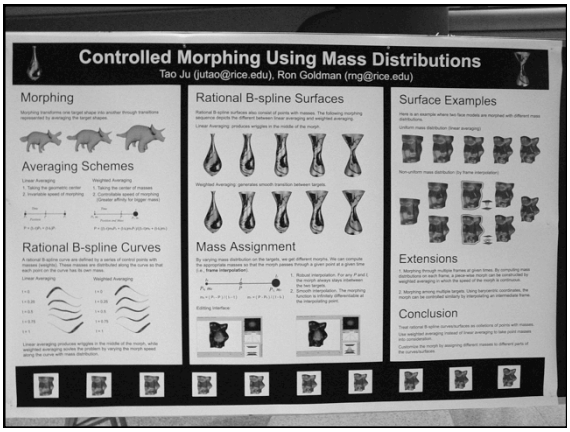
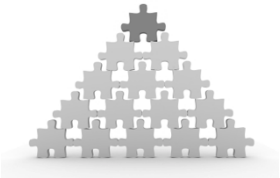


Hierarchy



Enables audience to discern relationships

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Bulleted List Layout

- This is a primary bullet.
  - This is a secondary bullet.
    - This is subordinate to the bullets above it.
    - This is subordinate to the bullets above it.
- This is a primary bullet.
  - This is a secondary bullet.

Bulleted List Layout

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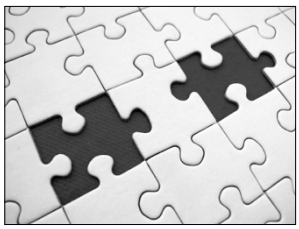
White space



Directs gaze

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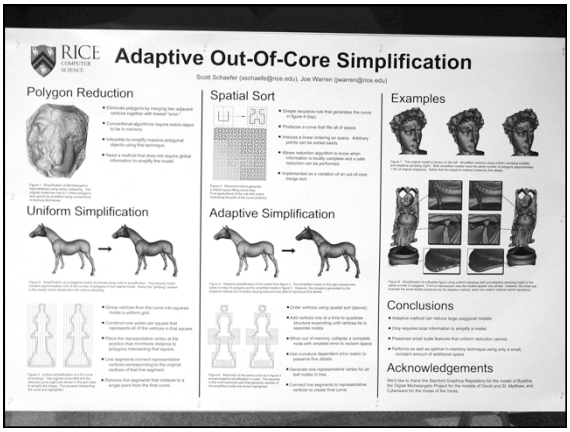

- *Therapeutic Systems and Technologies* –
  - Dorin Panescu, Refractec Inc., Irvine , CA, **Chair,** Cardiac Catheter Ablation
  - Jean-Yves Chapelon Ph.D., INSERM, Lyon, France, High Intensity Focused Ultrasound for Prostate Tumor Ablation
  - Rahul Mehra Ph.D., Medtronic, Inc. Minneapolis, MN, Cardioverter-defibrillators, Tachyarrhythmia Research
  - Tim McIntyre M.S.,Manager, St. Jude Medical, St Paul, MN, Medical Device Industry R&D and Management
  - John Pearce Ph.D., ECE Department, University of Texas, Austin, TX, Electromagnetics and Acoustics Applied to Medical Devices
  - Kouros Azar M.D., B.S.BME, Thousand Oaks, CA, Reconstructive Surgeon
  - Reese Terry M.S., Co-founder/Board Member Cyberonics, Inc., Houston, TX, Neurostimulation Devices

Therapeutic Systems & Technologies

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Neurostimulation Devices

EMB

Text

- Legible
- Large
- Succinct
- Parallel
- Conservative
- Consistent

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Sans serif font best

Good for posters

E

Sans Serif
Arial
Helvetica
Calibri

Good for print

E

Serif ("tail")
Times New Roman
Courier
Garamond

Large font sizes

Title — 90-120 pt

Headings — 36-54 pt

- Text — 24-36 pt

Captions and data labels — 18-20 pt

Fat text ⟶ lean text

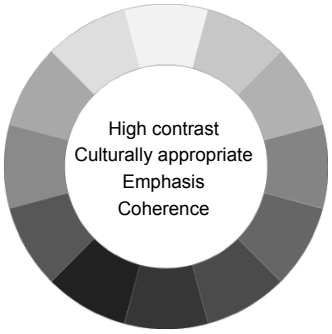
Advantages of optical imaging

Optical methods are advantageous over conventional modalities because they allow functional, real-time imaging of tissues at higher resolutions, are quantitative, noninvasive, and cost-effective. Moreover, optical imaging poses no risk of ionizing radiation to the patient.

Advantages of optical imaging

- Functional, real-time
- Higher resolution
- Quantitative
- Noninvasive
- Cost-effective
- No risk of ionizing radiation to patient

Color



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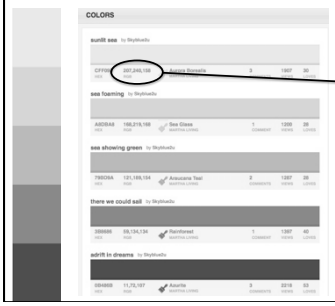
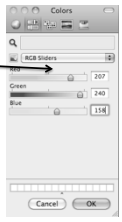
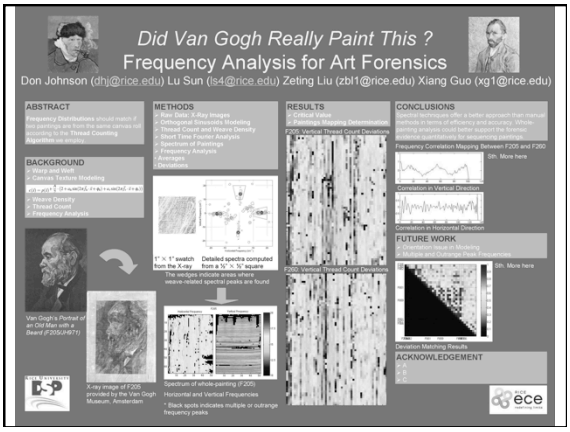
Selecting a palette

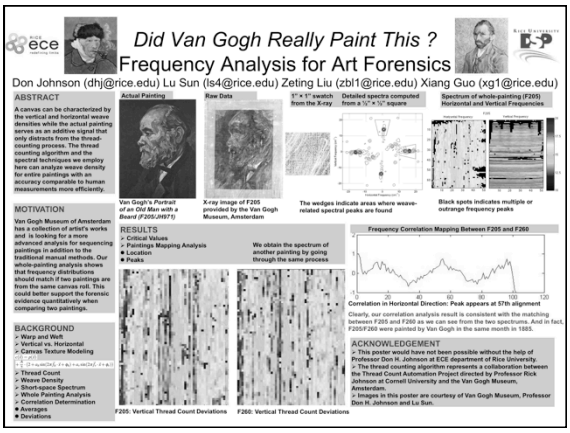
http://www.colourlovers.com/palettes

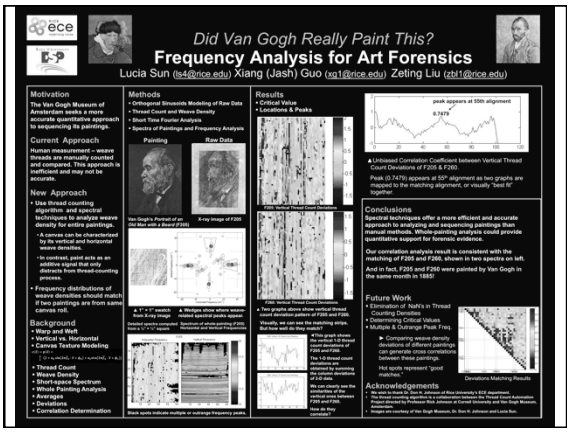


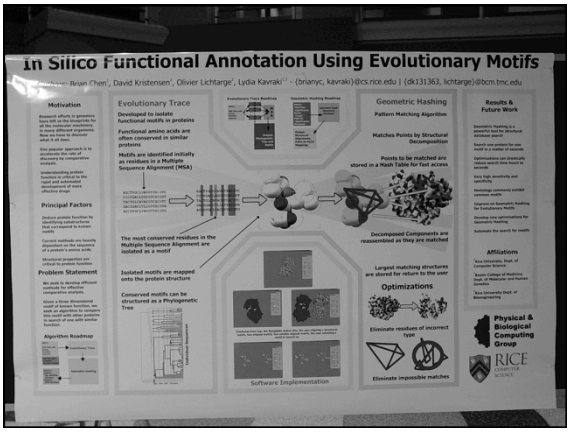
PowerPoint's RGB Slider



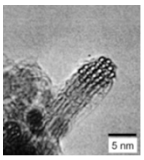








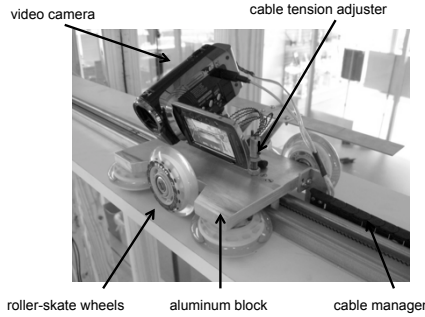
Visuals



SWCNTs before dispersion in Superacid.

- Relevant
- High quality
- Cropped
- Scale bar
- Caption
- Labels

Label images



Data display

- Size
- Colors
- Labels
- Units
- Chart junk

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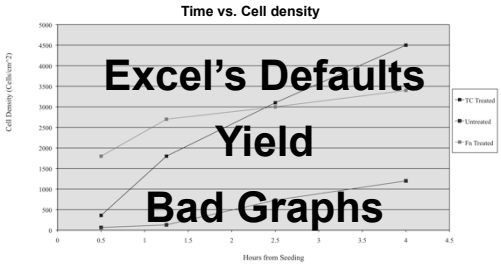
Results



Excel's Defaults Yield Bad Graphs

Results

Vague title; double title

Border retained

No separators

Too many gridlines

Thin lines

Shading

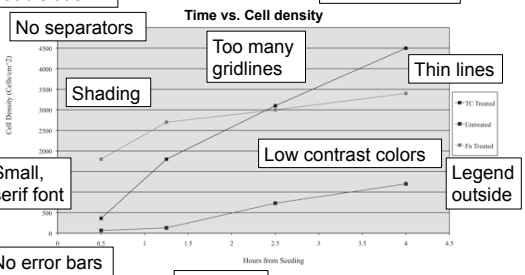
Low contrast colors

Small, serif font

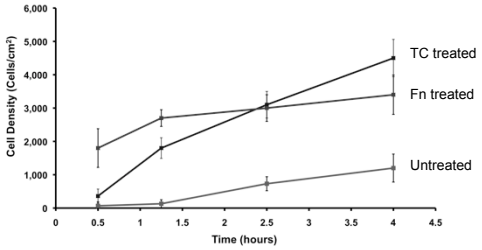
Legend outside

No error bars

Axis label



Cell Density Higher in Treated Wells



General title

Revenue

No visual cues to signal what s important

Region	Q1	Q2	Q3	Q4	Total
Americas	-18%	7%	25%	2%	2%
Australia	47%	-7%	26%	15%	17%
China	16%	-5%	1%	7%	19%
Europe	57%	10%	-3%	7%	13%
India	57%	57%	-3%	7%	13%

Too many gridlines

Values not centered

Adapted from Duarte's Slide:ology

1st quarter most profitable

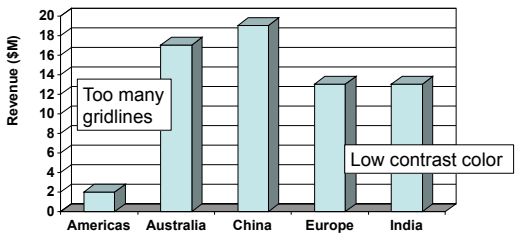
Region	Q1 ($M)	Q2 ($M)	Q3 ($M)	Q4 ($M)	Total ($M)
Americas	-18	7	25	2	2
Australia	47	-7	26	15	17
China	16	-5	1	7	19
Europe	57	10	-3	7	13
India	57	57	-3	7	13

Adapted from Duarte's Slide:ology

Change PPT Chart Defaults

3-D effect

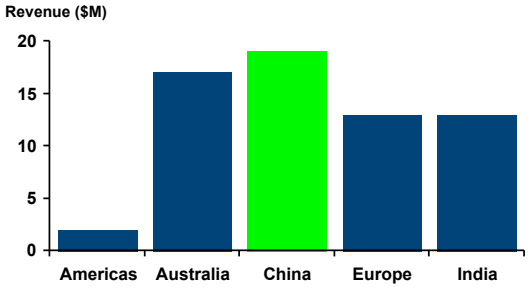
Border retained



Too many values on Y-axis

Too much space between bars

China generates highest total revenue for 2010



Quote research subjects

Metadata Usage

Student quotes from focus group interviews

1."Being able to see what other people in my group were calling, I mean labeling, plants was really helpful in the learning process. It made the lesson feel more collaborative and we could figure out where we were in relation to others that were studying the same plants."

2. "I really hadn't used the tagging function in Flickr before, but doing tagging at BotCamp… I'm hooked. It makes the photos have more meaning."

An example of tagging and other metadata creation by students in the Bot 2.0 project.

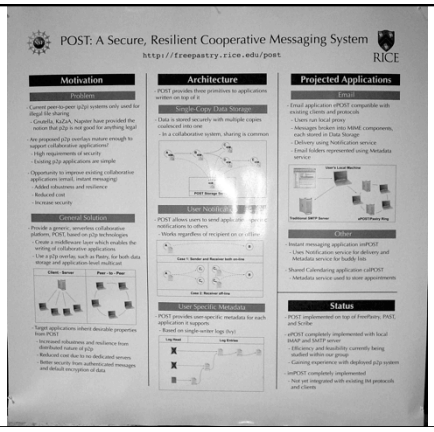
Excerpt from Shoffner, M., et al., 2008.

Communication Important in Performance Reviews

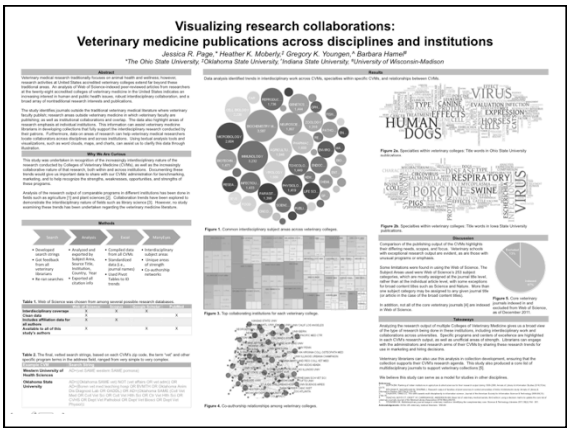
Interview Findings	Representative Quotations
Employees realize communication is important in reviews.	1. "My ability to communicate was highlighted as my main strength in my performance review." 2. "My communication skills kept me from getting promoted."
Employees evaluated as "high" in communication effectiveness are rewarded.	1. "No matter what kind of deal maker you are, only good communicators rise to the top here." 2. "Employees with good soft skills get noticed by management."

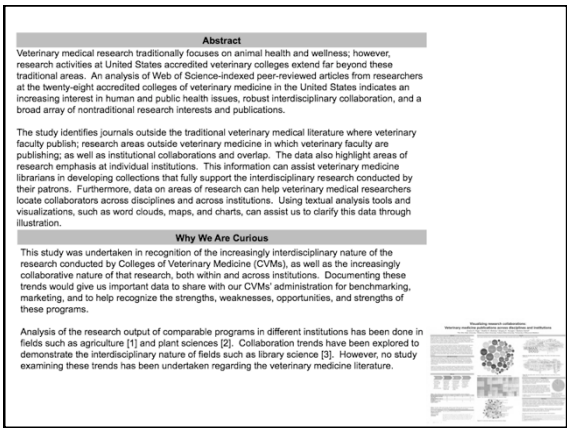
Details matter!

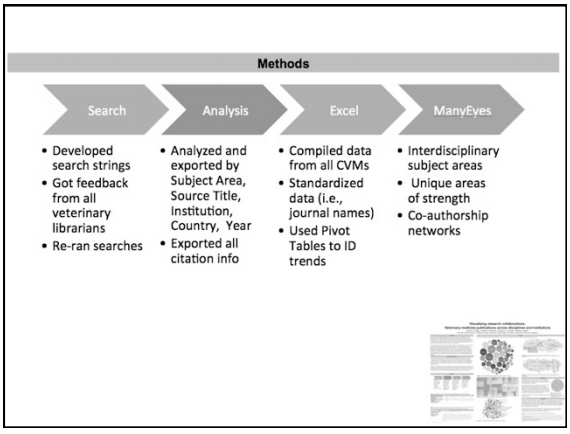
- Apply consistent formatting
- Check grammar and spelling
- Cite sources
- Acknowledge support
- Include contact info

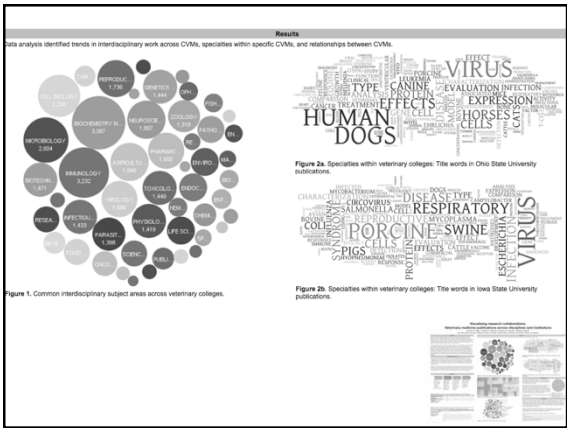


Apply design principles to draft poster


Visualizing research collaborations:
Veterinary medicine publications across disciplines and institutions
Jessica R. Page,* Heather K. Moberly,† Gregory K. Youngen,* Barbara Hamel‡
*The Ohio State University, †Oklahoma State University, ‡Indiana State University, §University of Wisconsin-Madison
Abstract
Why We Are Curious
Methods
Results
Discussion
Takeaways


Abstract
Veterinary medical research traditionally focuses on animal health and wellness; however, research activities at United States accredited veterinary colleges extend far beyond these traditional areas. An analysis of Web of Science-indexed peer-reviewed articles from researchers at the twenty-eight accredited colleges of veterinary medicine in the United States indicates an increasing interest in human and public health issues, robust interdisciplinary collaboration, and a broad array of nontraditional research interests and publications.
The study identifies journals outside the traditional veterinary medical literature where veterinary faculty publish; research areas outside veterinary medicine in which veterinary faculty are publishing; as well as institutional collaborations and overlap. The data also highlight areas of research emphasis at individual institutions. This information can assist veterinary medicine librarians in developing collections that fully support the interdisciplinary research conducted by their patrons. Furthermore, data on areas of research can help veterinary medical researchers locate collaborators across disciplines and across institutions. Using textual analysis tools and visualizations, such as word clouds, maps, and charts, can assist us to clarify this data through illustration.
Why We Are Curious
This study was undertaken in recognition of the increasingly interdisciplinary nature of the research conducted by Colleges of Veterinary Medicine (CVMs), as well as the increasingly collaborative nature of that research, both within and across institutions. Documenting these trends would give us important data to share with our CVMs' administration for benchmarking, marketing, and to help recognize the strengths, weaknesses, opportunities, and strengths of these programs.
Analysis of the research output of comparable programs in different institutions has been done in fields such as agriculture [1] and plant sciences [2]. Collaboration trends have been explored to demonstrate the interdisciplinary nature of fields such as library science [3]. However, no study examining these trends has been undertaken regarding the veterinary medicine literature.


Methods
Search
Analysis
Excel
ManyEyes
• Developed search strings
• Got feedback from all veterinary librarians
• Re-ran searches
• Analyzed and exported by Subject Area, Source Title, Institution, Country, Year
• Exported all citation info
• Compiled data from all CVMs
• Standardized data (i.e., journal names)
• Used Pivot Tables to ID trends
• Interdisciplinary subject areas
• Unique areas of strength
• Co-authorship networks


Results
Data analysis identified trends in interdisciplinary work across CVMs, specialties within specific CVMs, and relationships between CVMs.
Figure 1. Common interdisciplinary subject areas across veterinary colleges.
Figure 2a. Specialties within veterinary colleges: Title words in Ohio State University publications.
Figure 2b. Specialties within veterinary colleges: Title words in Iowa State University publications.

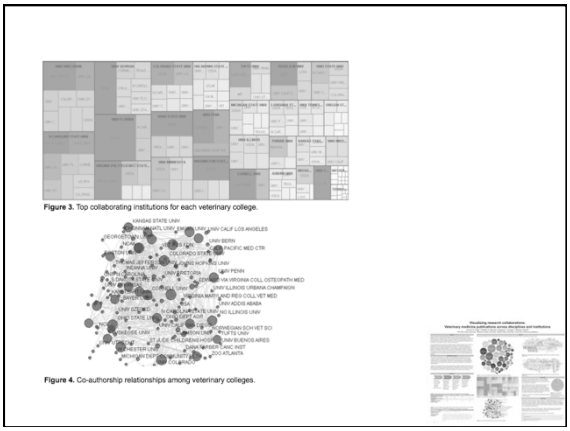
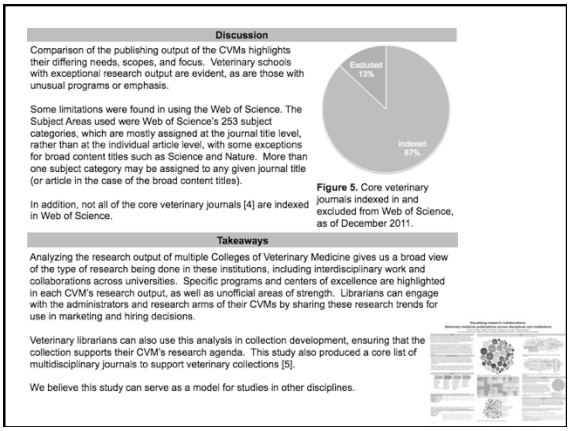


Figure 3. Top collaborating institutions for each veterinary college.
Figure 4. Co-authorship relationships among veterinary colleges.


Discussion
Comparison of the publishing output of the CVMs highlights their differing needs, scopes, and focus. Veterinary schools with exceptional research output are evident, as are those with unusual programs or emphasis.
Some limitations were found in using the Web of Science. The Subject Areas used were Web of Science's 253 subject categories, which are mostly assigned at the journal title level, rather than at the individual article level, with some exceptions for broad content titles such as Science and Nature. More than one subject category may be assigned to any given journal title (or article in the case of the broad content titles).
In addition, not all of the core veterinary journals [4] are indexed in Web of Science.
Excluded 13%
Indexed 87%
Figure 5. Core veterinary journals indexed in and excluded from Web of Science, as of December 2011.
Takeaways
Analyzing the research output of multiple Colleges of Veterinary Medicine gives us a broad view of the type of research being done in these institutions, including interdisciplinary work and collaborations across universities. Specific programs and centers of excellence are highlighted in each CVM's research output, as well as unofficial areas of strength. Librarians can engage with the administrators and research arms of their CVMs by sharing these research trends for use in marketing and hiring decisions.
Veterinary librarians can also use this analysis in collection development, ensuring that the collection supports their CVM's research agenda. This study also produced a core list of multidisciplinary journals to support veterinary collections [5].
We believe this study can serve as a model for studies in other disciplines.

Revised poster

Visualizing research collaborations:
Veterinary medicine publications across disciplines and institutions

Jessica R. Page[1], Heather K. Moberly[2], Gregory K. Youngen[3], Barbara Hamel[4]

1. The Ohio State University, 2. Oklahoma State University, 3. Indiana State University, 4. University of Wisconsin-Madison

Research Collaborations Lead to Questions

We presumed College of Veterinary Medicine (CVMs) research is:
- interdisciplinary
- collaborative within each institution
- collaborative among institutions

We wondered if:
- it is increasingly so
- and how this could, or should, influence collection development
- an analysis could be useful to CVM librarians

Commensurate Research Is Located

We discovered:
- analyses of research output in the agricultural [1] and plant sciences [2]
- collaborative trends, demonstrating the interdisciplinary nature of library science [3]
- no studies examining these trends about the veterinary medicine domain

Methodology Is Developed And Revised

We got to work, and:
- enlisted exploration to United States accredited veterinary colleges [4]
- divided this list among investigators
- created searches for test group
- tried searches in several search products

We settled on using ISI Web of Science, MyEyes, and Excel.

Then we noted that some search results were odd. We revised the searches and asked each CVM librarian to examine the search for their school. The response was overwhelmingly positive and helpful. Most searches were revised, some more dramatically than others (Table 2).

Search → Analysis → Excel → ManyEyes

- Search: Developed search strings; Got feedback from all veterinary CVMs; Re-ran searches
- Analysis: Analyzed and exported by Subject Area, Source Title, Institution, Country, Year; Exported all citation info
- Excel: Compiled data from all CVMs; Standardized data (i.e., source titles); Used Pivot Tables to ID trends
- ManyEyes: Interdisciplinary subject areas; Unique areas of strength; Relationship networks

Table 1. Information resources considered and variables investigated

	Web of Science	Scopus	Google Scholar	PubMed
Interdisciplinary coverage	X	X	X	
Cited data	X	X		X
Affiliation data for all authors indexed	X	X		
All of this study's authors subscribe	X		X	X

Table 2. Sample search strings, before and after local librarian's assistance

Formerly CVM	Original Search Strings	Revised Search Strings
Virginia Polytechnic Institute and State University	AD=(cvet med or vet coll or cull vet) same (virginia tech or virginia polytechnic) same blacksburg)	AD=(cvet med or vet coll or cull vet) same (virginia tech or virginia polytechnic) same blacksburg) or (virginia-maryland reg or VA MD or anim clin sci) same blacksburg) or (equine med same leesburg))
Western University of Health Sciences	AD=(vet SAME western SAME pomona)	AD=(vet SAME western SAME pomona)

Large Data Sets Are Visualized Using ManyEyes

Data analysis identified trends in interdisciplinary work across CVMs, specialties within specific CVMs, and relationships between CVMs. Visualizations are from ManyEyes [5]. Comparison of the publishing output of five CVMs highlights three differing needs, scopes, and focus. Veterinary schools with exceptional research output are evident, as are those with unusual programs or emphases.

Additional visualizations were also developed, and are displayed on the accompanying laptop.

Figure 1. Bubble chart of the 20 most common interdisciplinary subjects identified in the CVMs' research. The size of the bubble corresponds to the subject and the number of articles published. Circle size corresponds to number of articles.

Figure 2. Word clouds illustrating the prevalence of words in article titles at each of two CVMs. Figure 2a, a cloud of research output from a CVM with a large animal program and vets nearby, but does not have meaning. Three figures illustrate publication differences between The Ohio State University (Figure 2a) and Iowa State University (Figure 2b).

Notable Quirks

Given the interdisciplinary nature of this topic and the disciplinary nature of publishing and indexing, Web of Science and ManyEyes have limitations.

Interdisciplinary subject analysis: We used Web of Science's 253 subject categories, which are typically assigned at the journal level, rather than the individual article level. There are some exceptions for broad scope journals, such as Nature and Science. Additionally, more than one subject category may be assigned to any given journal title, or article in the case of the broad content titles.

Journal title inclusion: We define the core veterinary journals using the most recently "Basic list of veterinary medical serials" [6]. As of December 2011, only 87% were indexed in Web of Science.

Visualizing network data: ManyEyes is easier to use and produces cleaner figures than many network visualization tools, but these can still be hard to view and understand in print or at a small scale.

Our Lessons And Your Opportunities

Analyzing research output of CVMs provides a broad view of research, including interdisciplinary work and collaborations across universities.

Specific programs and centers of excellence are highlighted in each CVM's research output, as well as unofficial areas of strength.

Librarians can engage CVM general and research administrators by sharing these research trends.

This analysis supports veterinary collection development as a tool to ensure collections support individual CVM research agendas.

Preliminary data produced a core list of multidisciplinary journals to support veterinary collections. [7]

Visualizations help summarize and make sense of large datasets like this, and can make a bigger impact than just text.

This study can serve as a model for investigating other disciplines.

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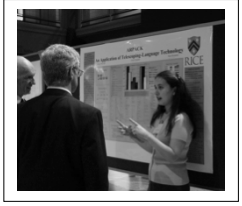
Present your poster with confidence

Connect with audience

- Greet people
- Prepare 30 sec, 90 sec, 3 min talks
- Summarize "gist" in 2-3 sentences
- Reinforce key points
- Be able to start spiel from any section
- Catch up newcomers quickly
- End with impact

Communicate with confidence

- Be enthusiastic
- Maintain eye contact
- Don't block poster



- Integrate gestures
- Speak up
- Adjust pace

Wrap up

- Engage audience's interest
- Align the argument with the visual flow
- Use images/figures/tables to make data accessible
- Analyze and interpret data
- Edit for brevity and precision
- Practice your spiel

Acknowledgements

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