1-9-2019

Librarians as Researchers and Academics

David Ehrensperger
Embry-Riddle Aeronautical University Prescott Campus, ehrenspd@erau.edu

Librarians as Researchers and Academics

What do I mean by this?

True Interdisciplinarity

Library / Scholarly Community

Relationship

Discrete Silos vs. Parts of a whole?

My case:

Parts of a larger whole

With very fluid boundaries

Ramifications

An idea (not TRUTH)

American Library Association


LIBRARIES
TRANSFORM®
An initiative of the American Library Association

Libraries Transform?

Proposal for a starting place

Librarians Transform!

Change starting with us…

One of many ways

David Ehrensperger

/Air' – ents – pur – gur/

Scholarly Communication and Research Librarian

Embry-Riddle Aeronautical University

Prescott, AZ

EMBRY-RIDDLE Aeronautical University

BS Secondary Education

UIUC 1989/1990 (Emphasis: History, Political Science)

ILLINOIS College of Education

MS in LIS

UIUC 1996

ILLINOIS
School of Information Sciences

IT - Graceland College/University

2000/2001

MA Philosophy

COLORADO STATE UNIVERSITY

2006

Also

Musician/Singer

(Saxophone, Barbershop Lead, Conga)

Hear/Feel Dissonance

Thinking differently

Noticing/Feeling disconnects

My perspective

Being differently

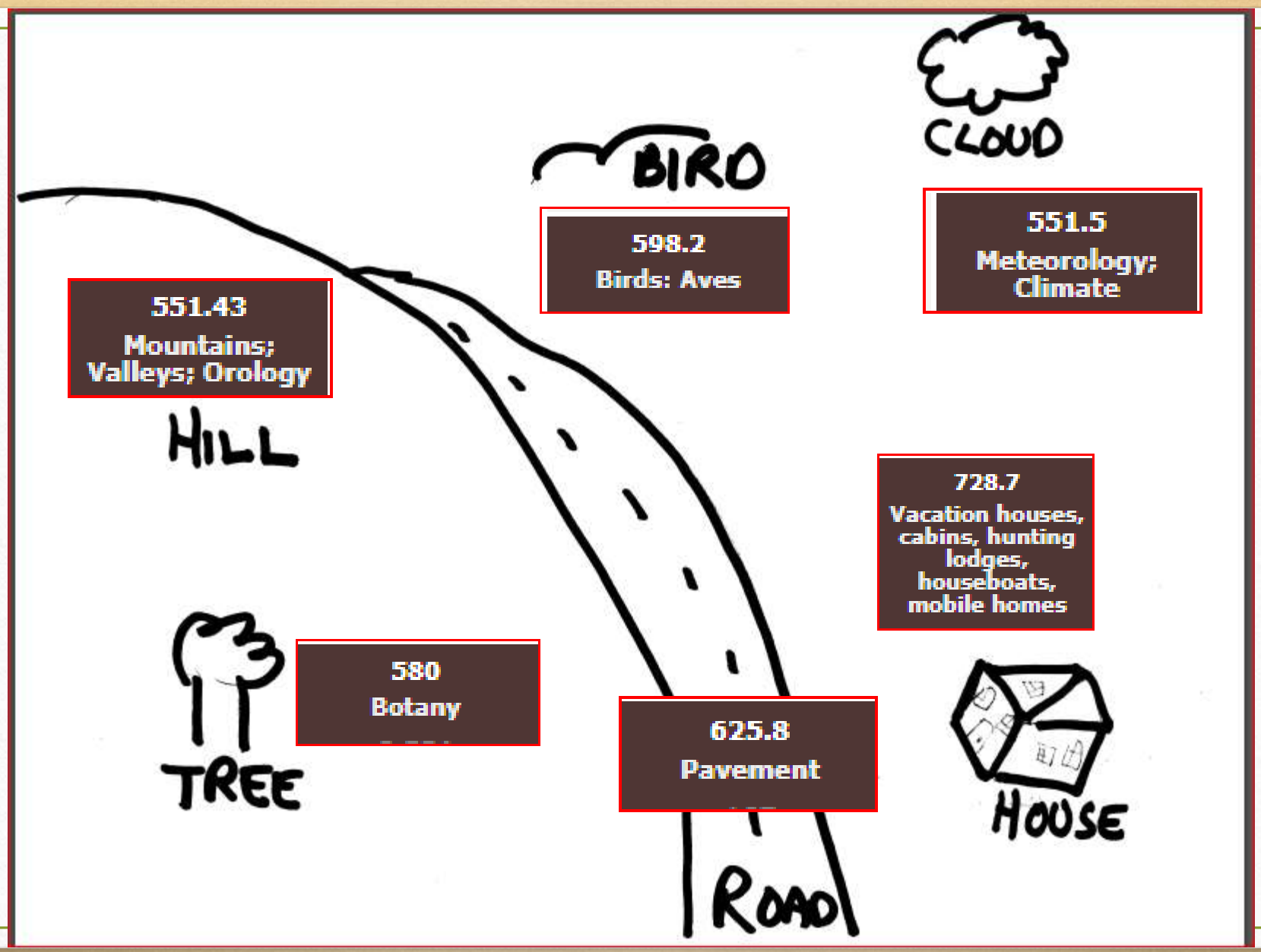
From Plato

Appearance vs. Reality

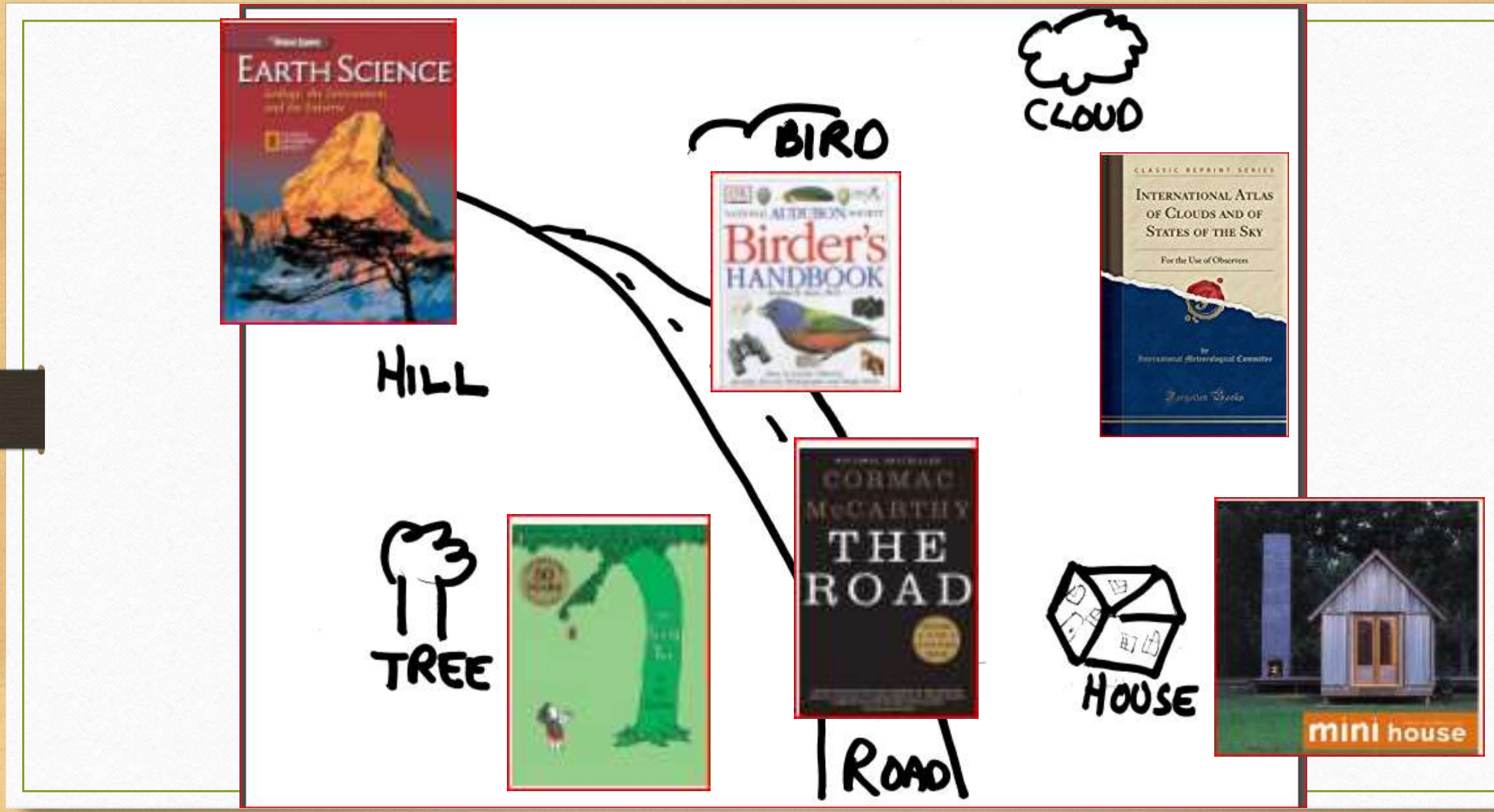
(Important as I reach my conclusion)

Librarian vs. Academic

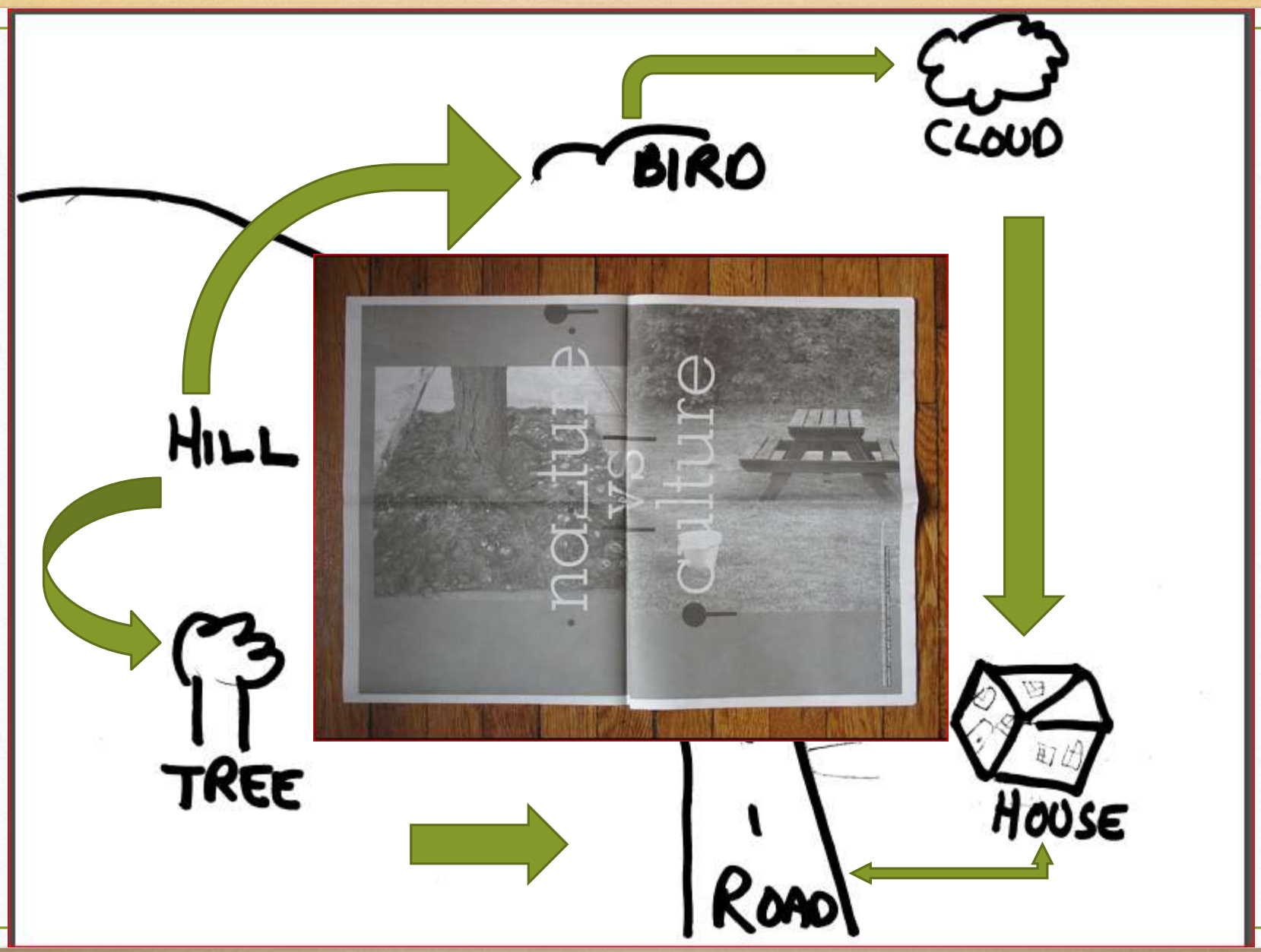
Librarian's View of the World


CLOUD
BIRD
551.5
Meteorology; Climate
598.2
Birds: Aves
551.43
Mountains; Valleys; Orology
HILL
728.7
Vacation houses, cabins, hunting lodges, houseboats, mobile homes
580
Botany
TREE
625.8
Pavement
HOUSE
ROAD

or


EARTH SCIENCE
CLOUD
BIRD
Birder's HANDBOOK
CLASSIC REPRINT SERIES
INTERNATIONAL ATLAS OF CLOUDS AND OF STATES OF THE SKY
For the Use of Observers
HILL
CORMAC McCARTHY
THE ROAD
TREE
HOUSE
mini house
ROAD

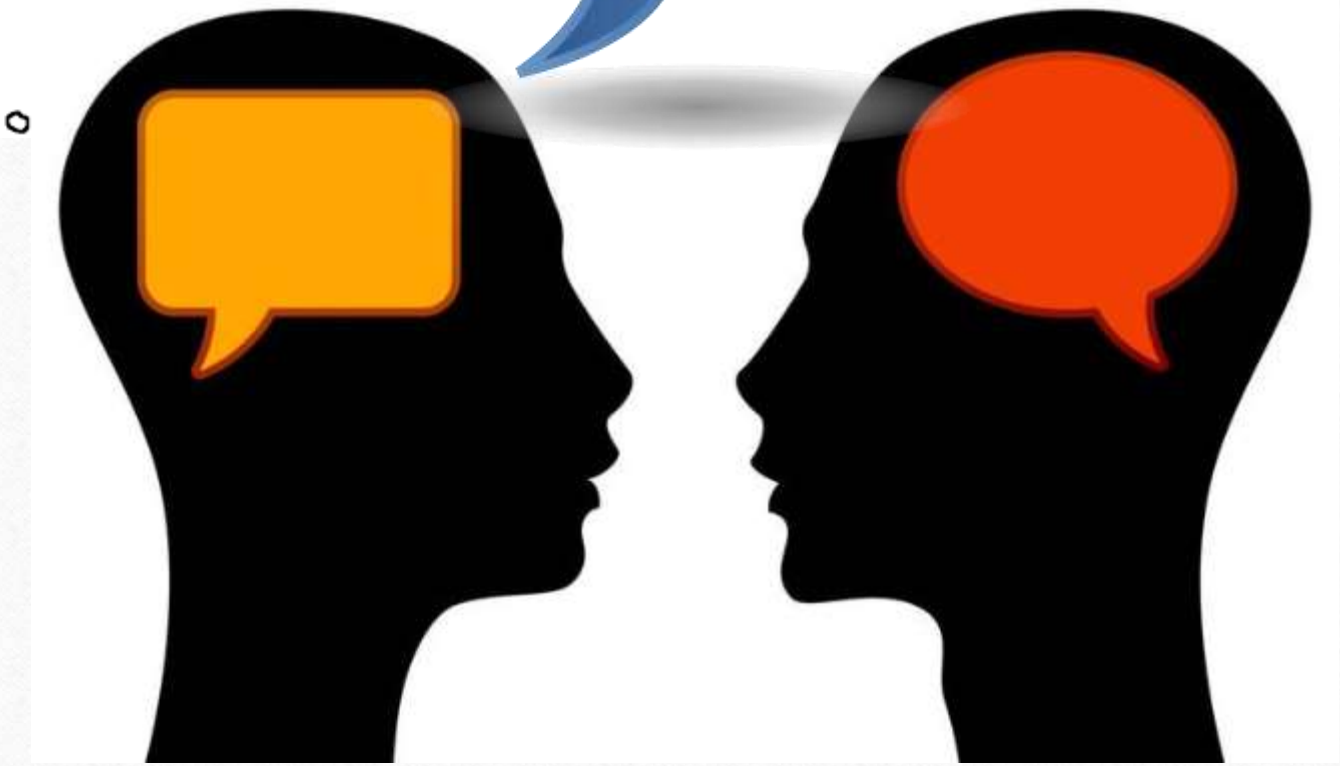
An Academic's View of the World


BIRD
CLOUD
HILL
nature
vs
culture
TREE
HOUSE
ROAD

Classification vs. Relationship

Result

551.5
Meteorology; Climate



Feels much different

Article

Friends vs. Classmates

MRI

LA Times Article / Nature Commmunications

Brain scans reveal that friends really are on the same wavelength

Karen Kaplan

Los Angeles Times – Science Section - Jan. 30, 2018

Similar neural responses predict friendship

Nature Communications (2018) 9:332, pp. 1-14

Friends vs. Classmates

More similarities →

Trust & Comfort

Co-workers vs. Partners

Epiphany

(Explained my experience, well)

Departmental Liaisons - Dilemma

Faculty only trust librarians so far.

Why?

MRI

One starting place to start getting past this?

Faculty Learning Community

Center for Teaching and Learning Excellence

Doing research together

Personal Examples

(CTLE)

2016-2017

Scholarship of Learning: An Outcomes Oriented Approach

Bowen, B.D., Ehrensperger, D. A., Groh, D., Holt, T.B., Luedtke, J.R., Pavlina, J.M., Perry, J.C., Rehbach, R.R., Roth, S., & Thomas, S.K.

TAKING LEARNING TO NEW HEIGHTS

Goals

1. Promote and expand research authorship and presentation opportunities.
2. Build on cross campus collaboration.
3. Increase presentation opportunities for undergraduate students.
4. Utilize scholarly accomplishment to aid in the classroom for the benefit of all students.

Mission

To foster a culture of cross campus collaboration that includes faculty, staff, and student participation. The building of an atmosphere of knowledge sharing, by utilizing the social learning theory, to help all members learn in a societal context (learning from each other). By constructing an active learning community, critical thinking is not only developed, but it is also amplified. Following the steps; 1. Collaboration on projects, 2. Choosing relevant, meaningful and challenging tasks, and 3. Managing a Socratic dialogue that helps promote deeper learning, curriculum and teaching methods are expanded upon.

1. •Collaboration on projects
2. •Choosing relevant, meaningful, and challenging tasks
3. •Managing a Socratic dialogue that helps promote deeper learning, curriculum, and teaching methods

Selected References

Bowen, B., Boettcher, A., Gallimore, J., Groh, T., Luedtke, J., & Holt, T. (2017, April 6-8). Curricular Modification to Maximize Capstone Research Outcomes. Accepted for presentation and published paper for the *31st National Conference on Undergraduate Research*, University of Memphis, Memphis, TN.

Bowen, B., Luedtke, J., Holt, T., Ehrensperger, D., & Watson, H. (2017, January 30-31). Impact Factor and Scholarly Research: The Traditional Media with a Social Media Influence. Presentation/paper accepted for the *Annual American Association of Behavioral and Social Sciences Conference*, Las Vegas, Nevada.

Holt, T., Luedtke, J., Bowen, B., Groh, D., et.al. (2017, June 27-29). A Missing Link? Assessing the Connection between Student Research Skills and Capstone Performance. *Paper presented at the Undergraduate Research Collaborations*. Northern Arizona University, Flagstaff, AZ. Proposal in process.

Holt, T., Luedtke, J., Bowen, B. & Watson, H. (2017, April 1). Leveraging the Media Impact Factor for Dissemination of the National Airline Quality Rating. *Proceedings of the 61st Annual Meeting of the Arizona-Nevada Academy of Science*. Glendale, AZ. Submission in Progress.

Luedtke, J., Diels, E., Holt, T., Merkt, J., & Schindler, C. (2017, January 30-31). The Utilization of Peer Mentorship and its Positive Impact on Student Retention. Presentation/paper accepted for the *Annual American Association of Behavioral and Social Sciences Conference*, Las Vegas, Nevada.

McIntire, S., Merkt, J., Luedtke, J., Holt., T., Bowen, B., & Brown, J. (2017, May 8-11). Advancement in Pedagogical Foundations: Developing Language Proficiency for Student Success. Accepted for presentation and published paper for the *19th International Symposium on Aviation Psychology*. Dayton, OH.

Olaganathan, R., Holt, T., & Luedtke, J. (2017, January 30-31). Modeling Fatigue for Management Decision Making: A Case Study. Presentation/paper accepted for the *Annual Ethnographic and Qualitative Research Conference*, Las Vegas, Nevada.

Schindler, C., Holt, T., & Luedtke, J. (2017, April 6-8). General Aviation Hypoxia and Reporting Statistics. Accepted for presentation and published paper for the *National Conference on Undergraduate Research*, Memphis, TN.

2017-2018

UAS Instrumentation Platform for STEM Education

Dorothea Ivanov, David Ehrensperger, Curtis N. James, Jackie Luedtke, Mark Sinclair, Jennifer Perry, Nicholas Harris, Johnny Young, Tim Holt

Department of Applied Aviation Sciences, College of Aviation, Embry-Riddle Aeronautical University, Prescott, AZ

[1] Hazy Library and Learning Center, Prescott Campus

1. Innovative Teaching Strategies

Seeing the world from above can stimulate curiosity and give students a reason to engage in many facets of STEM (Science, Technology, Aeronautics, Engineering & Math) learning.

Our goal is to inspire learners to conduct remote-sensing investigations, collecting and analyzing data by using Unmanned Aerial Systems (UAS) as platforms to carry scientific sensors, payloads, and/or capture imagery. We want to collect, interpret, and develop applications for UAS remotely sensed data and to prepare our students for an interdisciplinary future.

Our Faculty Learning Community (FLC) shares student-focused activities using UAS to pursue STEM projects and investigations! We discuss the pedagogical approach and implications for student learning and aim to engage the students in active learning, undergraduate research, working in teams, and working with real data.

Fig. 1. Educate Students about Unmanned Aerial Systems and Unmanned Air Traffic Management and Automatic Dependent Surveillance Broadcast. Describe initial ideas to generate discussions and understand the relationships above.

2. Meteorological data from quadcopter

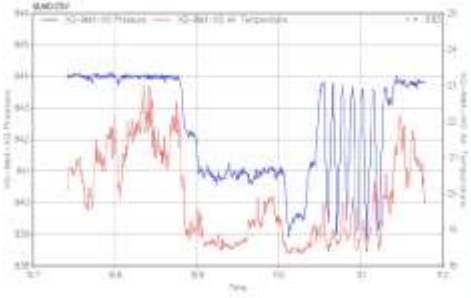


Fig. 2. ***WX353 Thermodynamics of the Atmosphere:*** Data from Wednesday Nov 15, 2017 flight.

3. Analysis and Discussions in WX classes

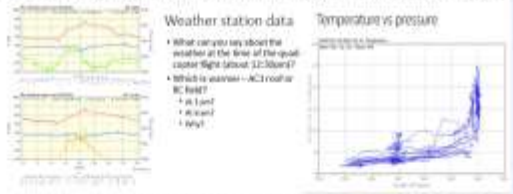


Fig. 3. ***WX353 Thermodynamics of the Atmosphere***: Weather station data and UAS data: Temperature vs pressure data from Wednesday Nov 15, 2017.

Fig. 4. The ***WX270 Weather Information Systems*** class during the UAS demonstrations as seen from the quadcopter.

Fig. 5. March 07, 2018 UAS flight during ***WX270 Weather Information Systems*** class. Dr. Curtis James discussing the UAS with the students.

Fig. 6. An excerpt of Python code written by Daniel Ryu, a ***WX390 Physics of the Atmosphere*** student for Raspberry Pi micro-computer to read, display and save data from the meteorological sensors attached, during UAS flight.

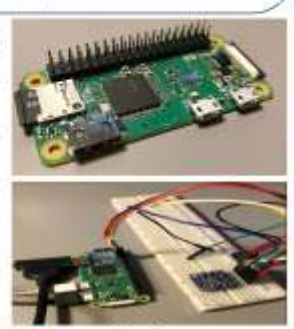
Fig. 7. Daniel Ryu, writing Python code for his ***WX390 Physics of the Atmosphere*** research project to communicate with meteorology sensors onboard the UAS.

4. AS 480 Capstone Aeronautics Projects

Spring 2018 projects concentrate on policy design, applications, ethics, and systems management:

1. Future Applications of Drone Laws
2. Exploring the Safety of UAS Operations in the Industrial Inspection Field
3. Drone Technology in the Medical Field
4. Unmanned Commercial Airlines
5. United States UAS Law and Commercial Industry Growth: Comparing United States Drone Industry to Other English Speaking Countries
6. Integration of Unmanned Aerial Vehicles into the National Airspace
7. Border Patrol, Drones and Drugs, America's Air Space in Turmoil

Fig. 8. The Raspberry Pi assembly alone (above) and connected to meteorology sensors (below) to be incorporated in the UAS like the quadcopter to the left.



5. Suggestions for Future Work

Engage the students from ***WX270 Weather Information Systems*** class in the following projects and enhancements:

- Work on a more compact configuration for mounting the Raspberry Pi and sensors on a quadcopter with the sensor board exposed to the air.
- Research additional sensors that we want to purchase: more pressure sensors, temperature sensors with higher accuracy, relative humidity, flexibility sensors to make a 2-D wind sensor, GPS, more Raspberry Pi kits.
- Research a way to power Raspberry Pi using the aircraft battery (5v transformer).
- Improve the Python code, making it more self-sufficient and user-friendly.

Engage the students from ***other classes and AS 480 Capstone Aeronautics Projects*** in data analysis, visualizations, discussions and interpretations of data after various UAS flights.

The proposed future work will engage the students in active learning, undergraduate research, working in teams, working with real data and visualizations.

ALA Member Digest for Monday December 31, 2018

Role of librarians in faculty learning community

Abid Hussain, Pakistan Observer

December 30, 2018

(https://tinyurl.com/y84n4jmh)

Transform institutions of higher education into learning organizations

A good start

But still discrete entities

- “As a community builder, the librarian should also participate in the FLC activities in order to encourage them to various library services to explore opportunities for collaborative teaching and research projects.” - Hussain

Librarians vs. Faculty

Going further while remaining librarians

Possible next steps

- Additional CTLE (and other) research activities
- Making a habit of reading professional literature…*meteorological* literature, for example.
- Take classes and/or attend conferences (like ASLI)
- Get another degree

Avoid *selling* library services to faculty

Supports us/them mentality

Appearance that we librarians have faculty best interests in mind

But what do we emphasize?

ACRL Framework

Scaffolding

What we do

Not discipline specific

Being faculty/researchers as well as librarians

Use librarian-ese, but

But value what faculty value

Reality → Integrity

(Don't fake it! There is no faking it!)

MRI will not lie

Or let you ‘bridge a gap’

Approach faculty as faculty/researcher

Do what faculty do as faculty do it

Would Require Resources (Part or Full)

- Administrative buy-in
- Time
- Money
- Desire of librarian

Probably wouldn't be easy

But remember

Change starts with us…

One path toward participating in the scholarly conversation.

Questions?

Bibliographic Sources

- Hussain, Abid." Role of Librarians in Faculty Learning Community." *Pakistan Observer,* 30 December 2018. (https://tinyurl.com/y84n4jmh)
- Kaplan, Karen. *Brain Scans Reveal that Friends really are on the Same Wavelength.* Tribune Interactive, LLC, Los Angeles, 2018.
- Parkinson, Carolyn, Adam M. Kleinbaum, and Thalia Wheatley. "Similar Neural Responses Predict Friendship." *Nature Communications*, vol. 9, 2018, pp. 1-14.

Image Sources - 1

- Slide 12: http://www.ilovelibraries.org/librariestransform/
- Slide 19: https://erau.edu/
- Slide 20: https://education.illinois.edu/
- Slide 21: https://ischool.illinois.edu/
- Slide 22: https://www.graceland.edu/
- Slide 23: https://www.colostate.edu/

Image Sources - 2

- Slide 35: LibraryThing - https://www.librarything.com/mds/ - Call numbers (also Slide # 42)
- Slide 39: http://fourcallahans.net/sister/graphicunionpress/nature_vs_culture/ - Slide #4 (also Slide #42)
- Slide 42: http://everything-voluntary.com/language-intent-bigotry

Complementary Reading

- Kinreich, Sivan, et al. "Brain-to-Brain Synchrony during Naturalistic Social Interactions." *Scientific Reports (Nature Publisher Group)*, vol. 7, 2017, pp. 1-12
- Kreijns, Karel, et al. "Determining Sociability, Social Space, and Social Presence in (A)Synchronous Collaborative Groups." *CyberPsychology & Behavior*, vol. 7, no. 2, 2004, pp. 155-172.
- Lozares, Carlos, et al. "Homophily and Heterophily in Personal Networks. from Mutual Acquaintance to Relationship Intensity." *Quality and Quantity*, vol. 48, no. 5, 2014, pp. 2657-2670.

The end?