

Teaching & Research Connections

(Research & Data Services)

March 26, 2019 | ARL-CNI Digital Scholarship Workshop

Ted Baldwin | **University of Cincinnati** | @TedBaldwinUC

About UC & UC Libraries

- Urban, Public R1 institution with origins to 1819
- 46K enrollment, 11K employees (6.8K faculty)
- Campuses: main, medical, two regionals
- Founder of co-operative education (co-op)

UC Libraries | libraries.uc.edu

- ARL member
- ~ 125 faculty/staff
- 10 library locations



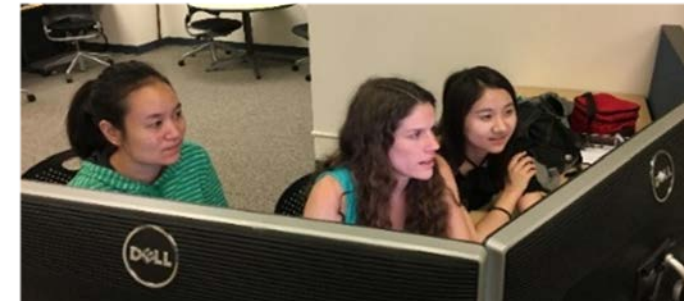
Research & Data Services

- Work began 2013 (E-Science Institute)
- Support from libraries as strategic priority (Area of Distinctive Excellence)
- Co-leadership – STEM & medical
- Scope isn't only STEMM – apply to all disciplines
 - Focus areas: data (management, analysis, visualization), public datasets, reproducibility, GIS, bio/informatics
- Staff: informationists, specialist staff and student consultants/instructors

INITIATIVE CHARTER

1. General Information

Initiative Name:	Developing a Suite of Programs for UC Researchers (Research, Implement)
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Research & Data Services

Distinct operational unit as of 2019

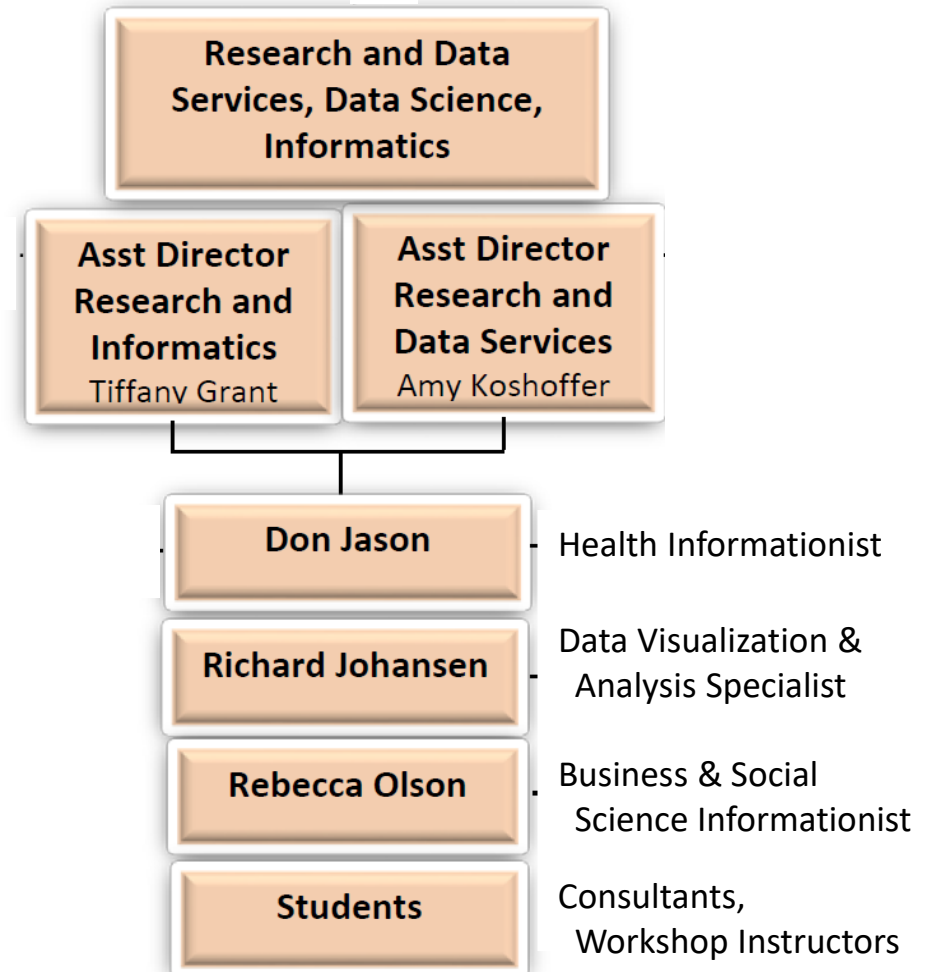
- Informationist co-leaders
- Streamline team & program development

Purpose

- Advance a service model
- Align for increased grants activity, partnerships relating to data science

Challenge

- Balance campus-wide services and deep research collaborations



Tools for Researchers

• Advocacy & outreach on research best practices and workflow tools such as:

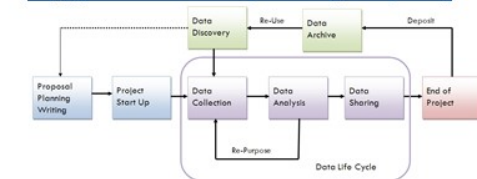
- DMPTool
- RedCap, Box.com, Scholar@UC (IR)
- Open Science Framework (ambassador)
- ORCID integration
- NCBI resources (biotechnology)
- ICPSR (social science data archive)

Research & Data Services

University of
CINCINNATI | LIBRARIES

The UCL Research Data Services group inspires the creation of knowledge and enhances research productivity across the UC research community through the development and implementation of interdisciplinary research data services that enables research and promotes synergistic collaborations between UCL and UC researchers.

<http://guides.libraries.uc.edu/datamanagementplanning>



scholar@uc

DMPTool
Build your Data Management Plan

ORCID
Connecting Research and Researchers

OSF
Open Science Framework

box

REDCap
Research Electronic Data Capture

Name	Description	Location
Research Labs @ GMP	- Data Visualization - Geographic Information Systems	Geography, Math, Physics Library https://libraries.uc.edu/gmp.html
Informatics Lab	- Data Analysis Software - Collaborative, Hands-on learning	Health Sciences Library https://libraries.uc.edu/hsl.html
Scholar	- Data Preservation and Archiving - DOI Creation - Public Data Sharing - Provides templates and instructions for federal data management plans	https://scholar.uc.edu/
DMPTool	Provides a unique and persistent research identifier for researchers	https://dmp.cdlib.org/
ORCID (Open Researcher and Contributor ID)	Provides project management support	https://orcid.org/
OSF (Open Science Framework)		https://osf.io/
Box	- UC's preferred cloud based storage platform - Data Sharing - Cloud based electronic data capture - Ideal for human subjects research and research involving protected information	https://canopy.uc.edu/ https://cctst.uc.edu/redcap
REDCap (Research Electronic Data Capture)		

Email: AskData@uc.edu

Web: <https://libraries.uc.edu/digital-scholarship/data-services>

User Spaces

Data & GIS Collab = group analyses & projects

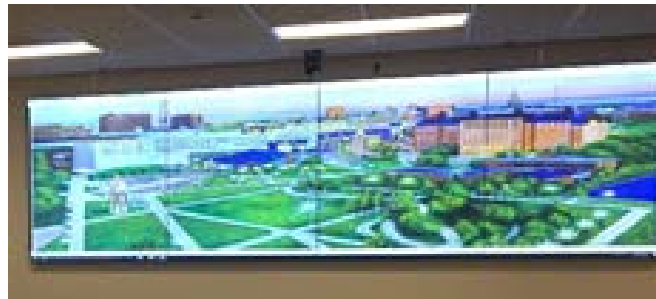
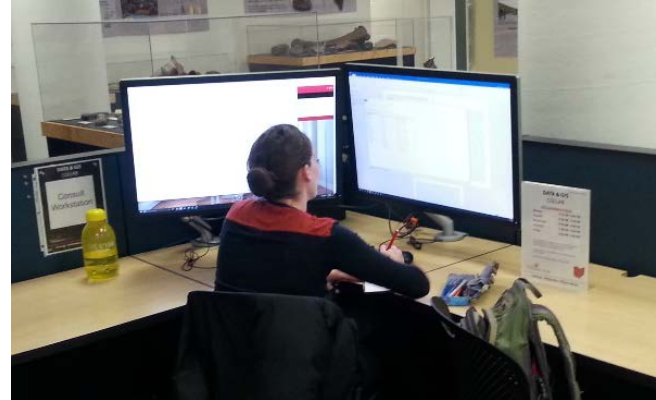
- 2 high-end workstations
- Dual 36" monitors
- Advanced software, 3-D mouse

Visualization Lab = large scale presentation

- 8-panel, 14' x 5' display wall
- Multi-device display
- Controller station + bring your own device

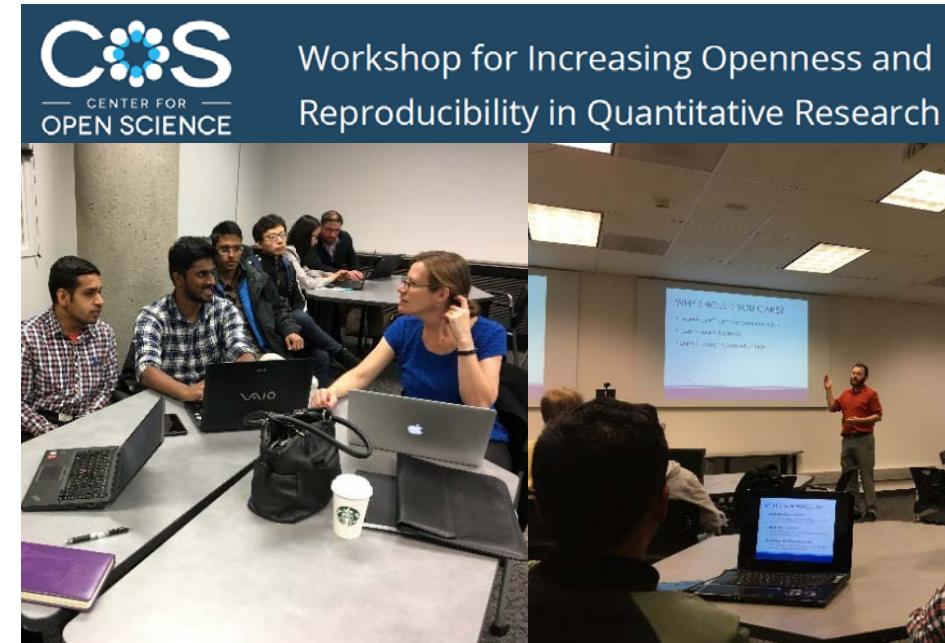
Informatics Lab (medical) = collaboration

- 80" display monitor
- Whiteboard tables, rolling whiteboards
- Virtual dissection table



Teaching & Education

- Began with basic workshops - e.g., Python, GitHub, OpenRefine, Data Management & Visualization
- Expand to advanced topics in-house: Python/R packages, QGIS, Gephi
- External partnerships:
 - Center for Open Science: Research Reproducibility Workshops
 - UCSC Genome Browser, NCBI trainings



Teaching & Education

- Fall 2017 course: “Informatics for the 21st Century Medical Professional”
- Spring 2020 Honors course: “The Power and Politics of Data”
- Course mentors for Level 1 & 2 - NNLM “Biomedical & Health Research Data Management for Librarians”

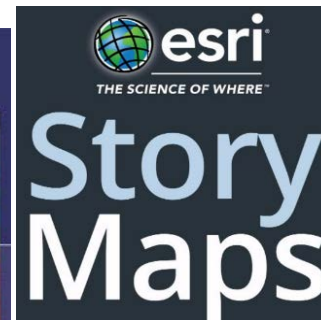
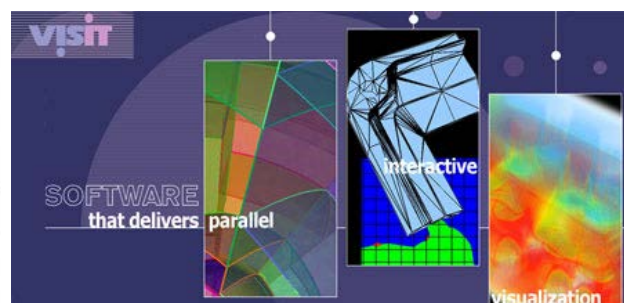
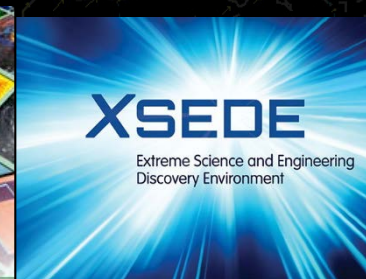
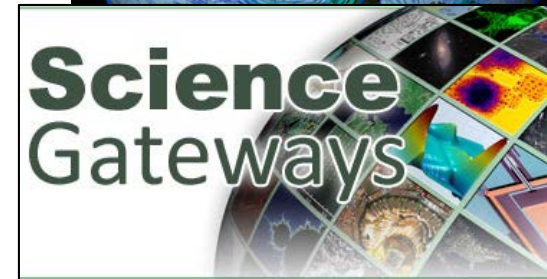
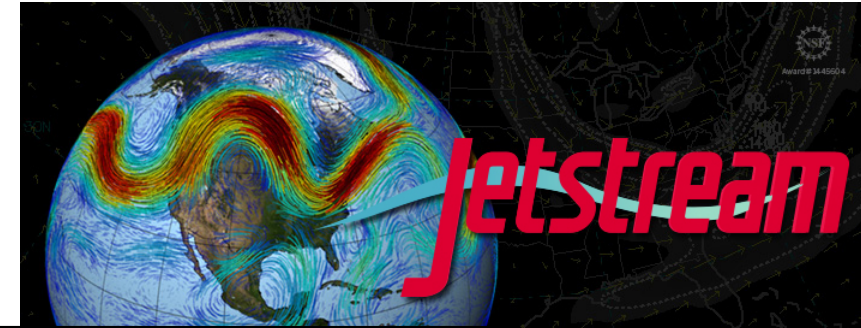
**UNIVERSITY
HONORS
PROGRAM**
experience **reflect** integrate **transform**



Education and Training

Data & Computational Science Series (DSC²)

- RDS and UCIT R&D partnership
- Seminars & trainings on advanced research data topics: HPC, cloud computing, data visualization and analytics, research story-mapping, spatial analysis, artificial intelligence, machine learning
- Community building to enhance collaborations



Teaching & Education

- Challenges
 - Scale growing relationships with so many
 - Leverage interactions to increase value
 - How to determine which interactions may move to 'research' level interactions?
- Lessons Learned:
 - GIS Learning Community
 - Data Carpentry
 - Master contact list



Campus & External Engagements

- Precision Genomics Midwest Conference
- Red Cross “Missing Maps” Mapathon
- UC GIS Day



Putting the World's Vulnerable People on the Map

www.libraries.uc.edu

GISday

Wednesday, November 14, 2018

TUC 427

11:00 a.m. - 2:00 p.m.

Free Event

10:00 a.m. - 11:00 a.m.

Open meet and greet
(402 Braunstein Hall)

11:00 a.m. - 12:00 p.m.

Lunch

12:00 p.m. - 1:00 p.m.

Featured Speaker:

Daniel Sui

Vice President for Research
University of Arkansas;
Former Division Director
National Science Foundation

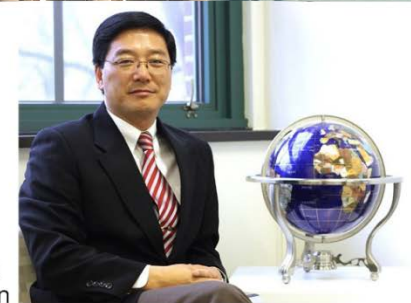
1:00 p.m. - 2:00 p.m.

Question and Answer Session



University of
CINCINNATI

Department of Geography & GIS
UC Libraries | UC GSGA | GISSA



Speech topic :

GIS and Emerging Convergence Research

Campus & External Engagements

UC Data Day

3rd annual,
March 6, 2018



Campus & External Engagements

(NNLM Greater Midwest Region (GMR) “Research Data” Award)

4th UC Data Day – April 1, 2019

- **Theme: Diversity, Equity and Inclusion in Data**
- **Keynotes**
 - Amanda Wilson - Head, National Network Coordinating Office of the National Network of Libraries of Medicine
 - Deborah Duran, Ph.D. - Director, National Institute on Minority Health and Health Disparities, Office of Science Policy, Strategic Planning, Assessment, Reporting & Data
- **Panels**
 - Health Equities and Health Disparities
 - Data Empowering Social Justice
 - Big Data: For or Against Health Disparities?
 - Service Provider Presentations (UC & external)
 - Mapping social vulnerability caused by climate change (hands-on workshop)



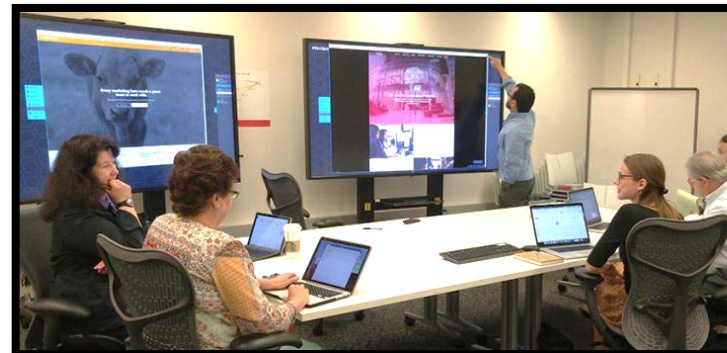
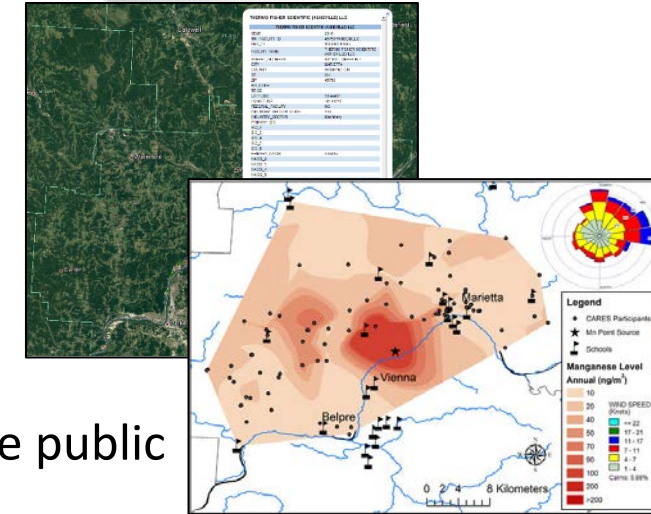
Deborah Duran, PhD



Amanda Wilson

Research Connections

- 2nd NIH Informationist Supplement (2017)
 - Dr. Erin Haynes – Manganese (Mn) pollution in rural Ohio
 - Help research team communicate research findings and data to the public
 - Incorporate data visualization, data accessibility, and data sharing
- Provost Technology Award (with Digital Scholarship Center)
 - Visualization Lab tech
 - Prysm 85" touchscreens



Research Connections

Health Sciences Library-College of Medicine (COM) Grant Program

- Funded by COM Associate Dean for Research
- Goal: Embed informationists and information specialists to enhance study design, data collection, data presentation.
- Projects: data management, systematic reviews, literature meta-analysis
 - Pediatrics - Serum Biomarkers for Traumatic Brain Injury
 - Internal Medicine - Pregnancy Outcomes in Women with Chronic Kidney Disease
 - Emergency Medicine - Integrating Informationists into a Knowledge Translation/Quality Improvement Curriculum for EM Residents
- Publications and program assessment forthcoming

White Paper on Research & Data Services

- Follow-up to March 2018 retreat
- Goal: Increase Distinction in RDS
- Detailed an RDS Service Catalog
 - Identified programs of support and education provided under a broad umbrella of research data support, GIS, visualization, informatics
- Examined service units at institutions and research centers in the areas of advanced data analysis/data science

Researcher Services: Proposal to Increase Distinctive Excellence

July 20, 2018

Tiffany Grant & Ted Baldwin (Co-Leaders, Researcher Services) with co-authors Amy Koshoffer (Science Informationist) and Kristen Burgess (Special Advisor to the Senior Associate Dean)

Table 3: 2018 Comprehensive Service Catalog and Skill Gaps (Sorted by Tier - Triage / Amplify / Partnership)

Tier	Category	Skill	Status	Primary Person Responsible	Example
Triage	Data Management	Data Management Consultation	Operational	Informationist	Meeting with lab groups to discuss data management practices
Triage	Data Management	Data Management Plan Consultation/Construction	Operational	Informationist	Provided Edits to UC internal Grant data management plan for School of Social Work Professor
Triage	Research Data	ORCID Profile Assistance	Operational	Librarian	Helping Students and Faculty register for ORCID
Triage	Research Data	Altmetrics Instruction	Operational	Informationist	Research Impact workshops, Literature database workshops i.e. Scopus

White Paper on Research & Data Services

Rebalancing & Refocusing (mid-2018)

- Develop a 3-tiered model of engagement, with recognition for deeper research partnerships
- Expand vision and mission for RDS
- Recommend professional development & staffing to address gaps in service catalog

<u>Research Data Services</u>		
<u>Triage</u>	<u>Amplify</u>	<u>Partner</u>
Staffing • Data Management Consultation • Data management plan construction • ORCID profile assistance • Altmetrics instruction • Evaluate data collections for library collections • GIS research guide • Data management compliance with federal and university regulations	• Education workshops and consultation • Research services outreach • Data management ethics consultation • Research data modeling • Bibliometric network analysis • Data literacy education • Extensive workshop series: Bioinformatics, REDCap, literature searching, R, ArcGIS, QGIS, MyNCBI, SciENcv, data management, LabArchives, Research Impact factor, data preservation • Project design and planning • Publishing assistance • Systematic or integrative reviews	Partnerships • Metadata creation • Data storage and archive • Data visualization • Conference host/partner for informatics • Host outside speakers on informatics topics • Dataset creation • Data cleaning/preparation • Low level spatial analysis

Upcoming opportunities/challenges

- Determine how the RDS and Digital Scholarship Center models work together more closely
- Strategic Memberships on University Committees
- Bolster partnerships with Office of Research, faculty research clusters and current university initiatives

Thank you!

Ted Baldwin | University of Cincinnati | @TedBaldwinUC