

Transforming the UC Informationist Program: Growing and Aligning Toward Data Science

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The Informationist Model

What is an Informationist?

- *Information Specialist in Context*
- Combine elements of data librarian, embedded/outreach librarian
- Diversify workforce, allowing for new advances in researcher services

Core Informationist team formed 2014

- Initial focus areas:
health science, clinical, science, engineering



Informationists → Research & Data Services

Growth to a **Research & Data Services** team

- Student consultants: R, informatics, GIS, data visualization
- Graduate assistants supporting RDS teaching, e.g., Python
- Business & Social Sciences Informationist (2018)
- Data Visualization Specialist (2018)
- Librarian hires with strong interests in data services (2018)



Tied to Libraries' **Areas of Distinctive Excellence** strategic framework

Vision: Research & Data Services

- **Transform the research and clinical endeavors** of the university through excellent and engaging research services.
- Grow and **strategically develop programs for the research community**, including consultations, teaching and workshops, collaborative lab spaces, and campus events.
- **Expand campus collaborations and integrations** to increase the impact and effectiveness of these efforts.

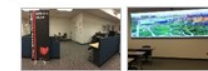
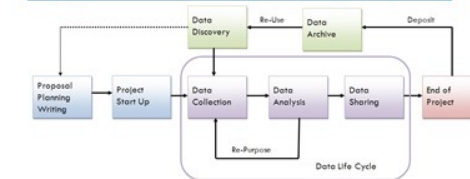
Services & Tools

- Coordinated support for all of UC: main, academic health center, regional colleges
- Consulting services + embedded activities
- Advocacy & outreach for research best practices and researcher tools such as:
 - Open Science Framework (ambassador)
 - RedCap, Box.com
 - ORCID integration
 - NCBI (biotechnology) resources
 - ICPSR

Research & Data Services

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



Name	Description	Location
Research Labs @ GMP	<ul style="list-style-type: none"> • Data Visualization • Geographic Information Systems 	Geography, Math, Physics Library https://libraries.uc.edu/gmp.html
Informatics Lab	<ul style="list-style-type: none"> • Data Analysis Software • Collaborative, Hands-on learning 	Health Sciences Library https://libraries.uc.edu/hsl.html
Scholar	<ul style="list-style-type: none"> • Data Preservation and Archiving • DOI Creation • Public Data Sharing 	https://scholar.uc.edu/
DMPTool	<ul style="list-style-type: none"> • Provides templates and instructions for federal data management plans 	https://dmp.cdlib.org/
ORCID (Open Researcher and Contributor ID)	<ul style="list-style-type: none"> • Provides a unique and persistent research identifier for researchers 	https://orcid.org/
OSF (Open Science Framework)	<ul style="list-style-type: none"> • Provides project management support 	https://osf.io/
Box	<ul style="list-style-type: none"> • UC's preferred cloud based storage platform • Data Sharing 	https://canopy.uc.edu/
REDCap (Research Electronic Data Capture)	<ul style="list-style-type: none"> • Cloud based electronic data capture • Ideal for human subjects research and research involving protected information 	https://cctst.uc.edu/redcap

Email: AskData@uc.edu

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

New 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



Education and Training

- UCSC Genome Browser, NCBI trainings
- Center for Open Science: Research Reproducibility Workshops
- Semester course: “Informatics for the 21st Century Medical Professional”
- Course mentor, NLM “Biomedical & Health Research Data Management for Librarians”
- Expanded workshops: Advanced Python & R, QGIS, OpenRefine, GitHub



National
Center for
Biotechnology
Information

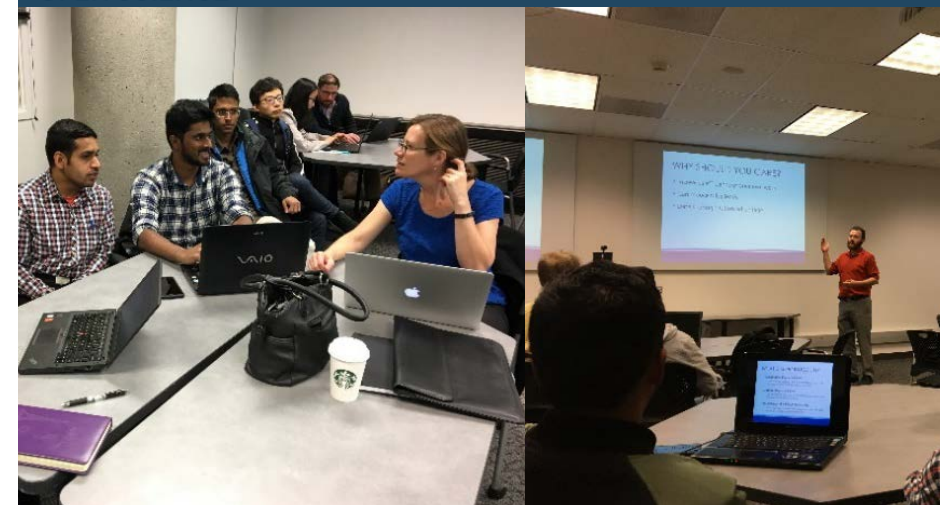


UCSC
Genome Browser



CENTER FOR
OPEN SCIENCE

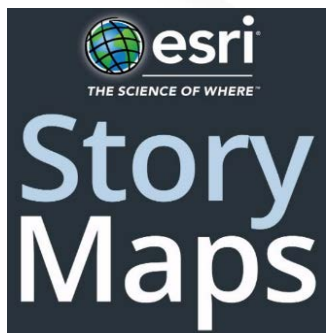
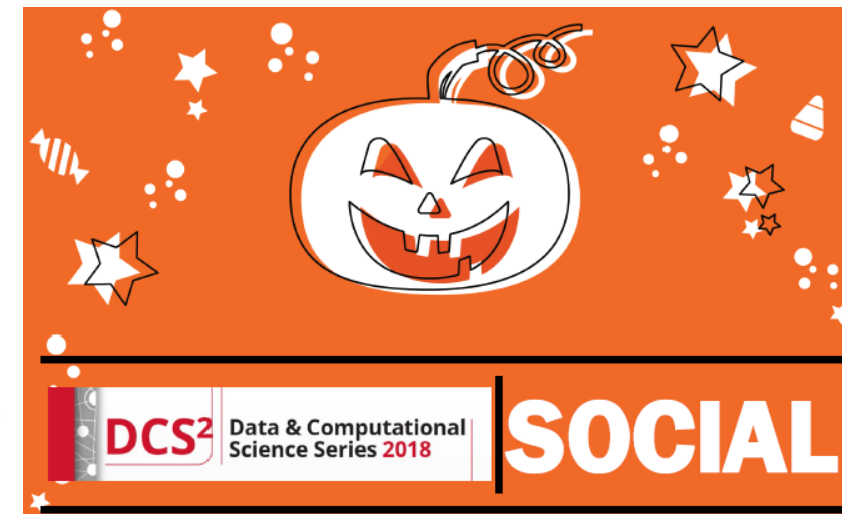
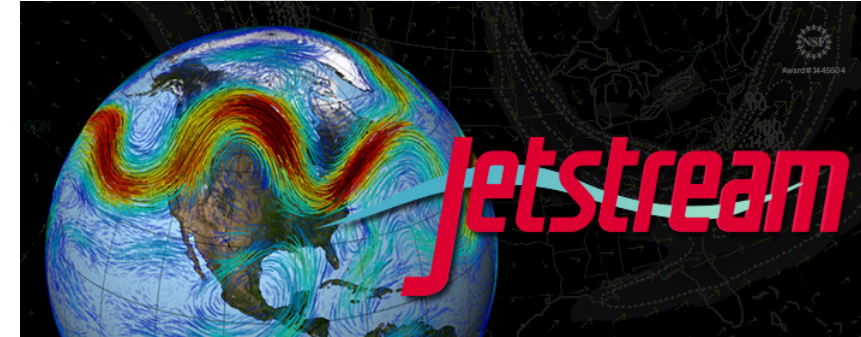
Workshop for Increasing Openness and
Reproducibility in Quantitative Research



Education and Training

Data & Computational Science Series (DSC²)

- RDS and UCIT R&D partnership
- Speakers/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



Campus and External Engagements

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



GISday

Wednesday, November 14, 2018
TUC 427
11:00 a.m. - 2:00 p.m.
Free Event

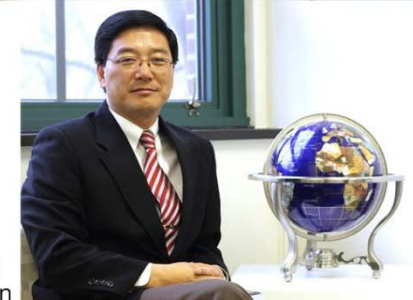
10:00 a.m. - 11:00 a.m. Open meet and greet
(402 Braunstein Hall)

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

Missing Maps

Putting the World's Vulnerable People on the Map

Campus and External Engagements

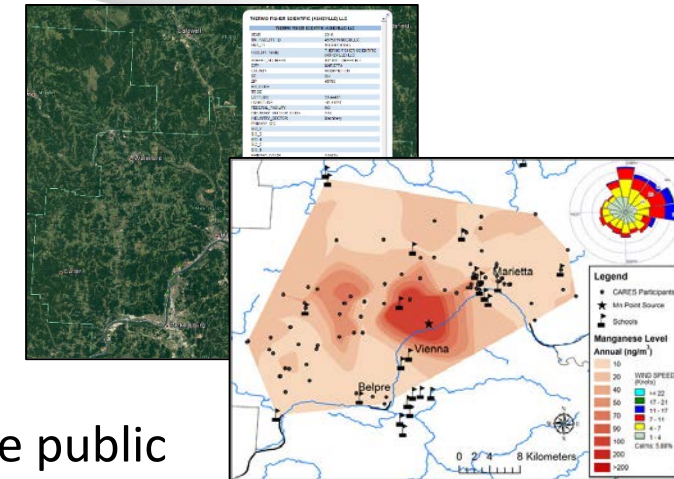
UC Data Day

3rd annual (2018)



Funding and Support

- **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's Technology Award (with Digital Scholarship Center)**
 - Visualization Lab wall tech, Prysm 85" touch screens
- **UC Universal Provider grants:**
 - Data & Computational Science Series (2 years)
 - LabArchives E-Lab Notebook pilot project



Funding and Support

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

Outreach & Impact: UC and Beyond

NNLM Greater Midwest Region (GMR) Awards

- **Research Data Award: UC Data Day – April 1, 2019**
 - **Theme: Diversity, Equity and Inclusion in Data**
- **Keynote addresses:**
 - **Amanda Wilson, Head, National Network Coordinating Office of the National Network of Libraries of Medicine**
 - **Deborah Guadalupe Duran, Ph.D., Director, National Institute on Minority Health and Health Disparities, Office of Science Policy, Strategic Planning, Assessment, Reporting & DATA**
- **Session Topics**
 - **Health Equity and Health Disparities**
 - **Data Empowering Social Justice**
 - **Interactive mapping of social vulnerability caused by climate change using R**



Deborah Duran, PhD



Amanda Wilson

Outreach & Impact: UC and Beyond

NNLM Greater Midwest Region (GMR) Awards

- **Health Information Outreach Award: Narrowing the Health Gap in Cincinnati**
 - Blood pressure and health information kiosks placed in community
 - Host cooking demonstrations to educate participants on healthier food choices
- **Goal: Increase health literacy and decrease health disparities in the Cincinnati region**
 - **Collaborators**
 - NIH “All of Us” Research Program
 - Cincinnati’s Public Library, main branch
 - Cincinnati Children’s Hospital
 - UC Center for Clinical and Translational Science and Training
 - Community Research Advisory Board (Cincinnati’s West End)
- **Aligned with Next Lives Here (UC President’s strategic agenda)**
 - Leading urban public universities into a new era of innovation and impact



Growing and Aligning Toward Data Science

Assessing Capabilities and Gaps

New Mission, New Vision

New Org Structure

Future Strategy

2018 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 peer/aspirational service units at institutions and research centers in areas of advanced data analysis and 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

2018 White Paper on Research & Data Services

White Paper Recommendations

- Expanded vision and mission for RDS & Informationists
- Establish 3-tiered model of engagement, providing recognition for deeper partnerships with researchers
- Recommendation on professional development and staffing to address service catalog gaps

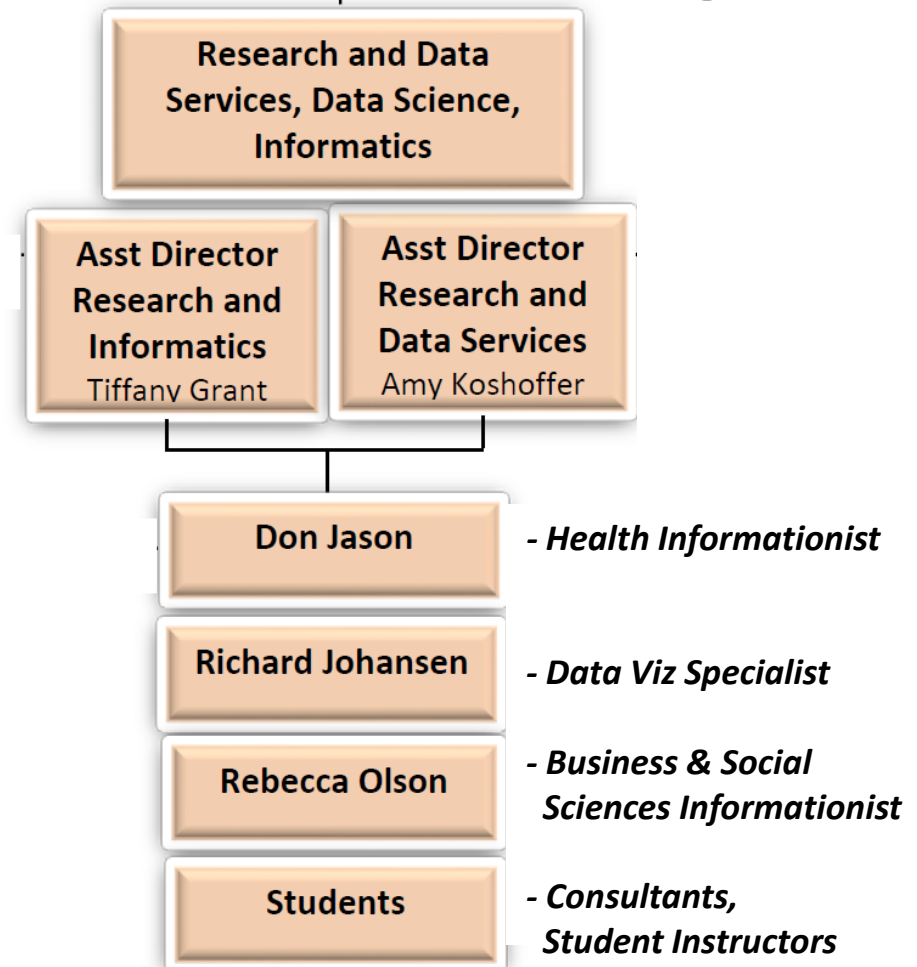
<u>Research Data Services</u>				
	<u>Triage</u>	<u>Amplify</u>	<u>Partner</u>	
Staffing	<ul style="list-style-type: none"> • Data Management Consultation • Data management plan construction • ORCID profile assistance • Altmetrics instruction • Evaluate data collections for library collections • GIS research guide • Data management compliance with federal and university regulations 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	Partnerships

New Mission, New Vision

- **Mission Statement:** 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.
- **Vision Statement:** The UCL Research Data Services group will be recognized as innovative and effective research partners by engaging researchers in data services through collaboration, consultation, and training that aims to amplify the global UC research profile.

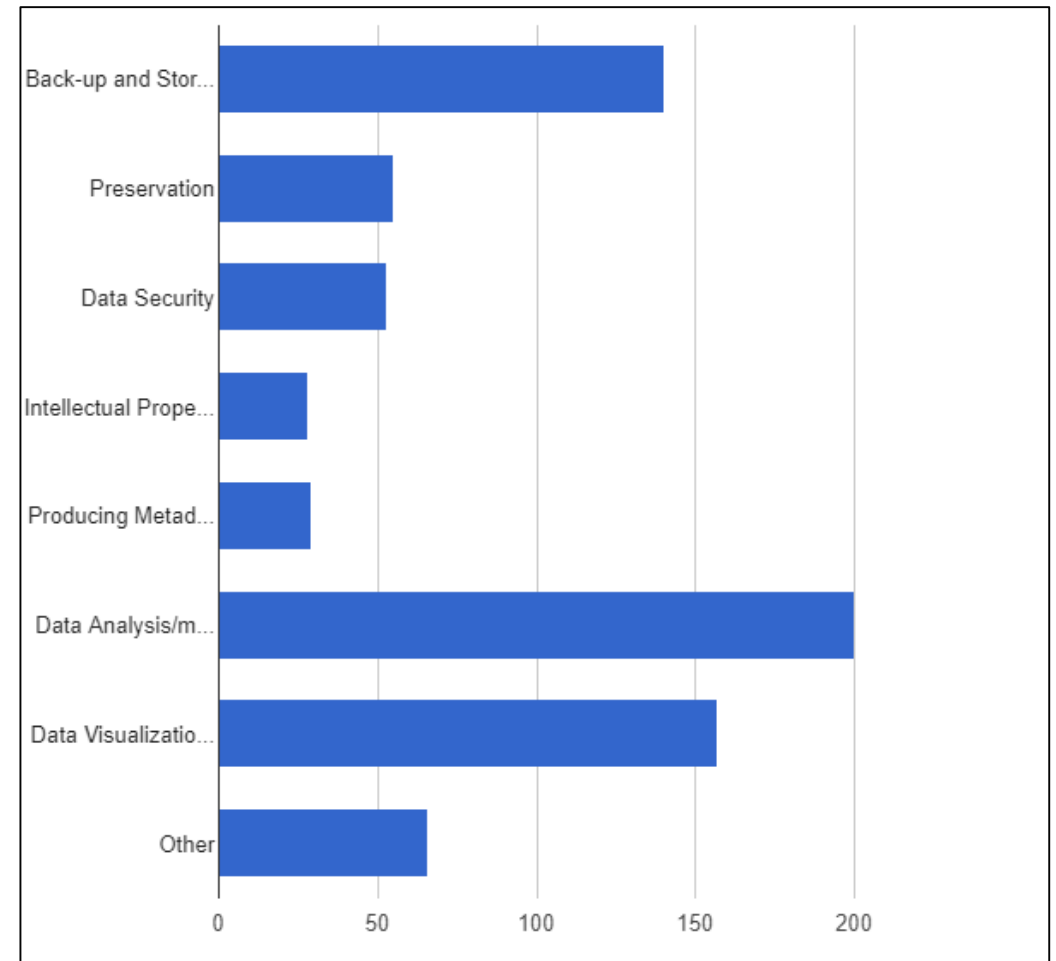
UC Libraries STEMM/Emerging Services Re-org

- Creation of new UCL unit
 - Further advance the service model and partnerships in the emerging areas of Research Data Services, Data Science, GIS, and Health Informatics
 - Streamline reporting lines to strengthen an all-campus service model
 - Grow informationist capacity in leadership and project management
- Balance campus-wide services and forming deep research collaborations



Research & Data Services Survey

- **Assessed research needs regarding**
 - Research Data Management
 - Data Generation and Analysis
 - Data Storage and Preservation
 - Data Services at UC
- Survey open for ~ 6 weeks
 - 565 responses
- **Greatest data challenges (n = 392)**
 - Back-up and storage
 - Data analysis/modeling
 - Data visualization



Emerging Partnerships & Collaborations

Office of Research Data Management Taskforce- instituted to assist with developing an assessment of research data management infrastructure that is consistent with a Tier 1 research university.

Department of Biomedical Informatics Precision Genomics Conference- the only regional conference focused exclusively on genomic research, translation, and ethics.

Campus-wide R user group (under consideration)- designed to create a series of monthly or bi-monthly meetings to promote learning tools and packages, exposure to new research topics or applications, and general assistance with programming.

What is our future in data science?

- Align new org unit under new mission/vision
- Document & assess heavily, focus capacity on high-impact
- Bolster partnerships with Digital Scholarship Center, other research units

Big Question--

- We **enable** data science, but is it even possible for us to **do** data science?

Thank you!