



RUTGERS

University Libraries

From Pilot to Jetstream

Building training pathways and collaboration in data science and digital humanities through the Library
(Graduate Specialist Program at Rutgers-New Brunswick Libraries)

Ryan Womack (with Dee Magnoni)

Data Librarian

May 20, 2021



This work is licensed under a

[Creative Commons Attribution-NonCommercial 4.0 International License.](https://creativecommons.org/licenses/by-nc/4.0/)



Outline

- Background
- Director's Perspective
- Startup
- Expansion
- JetStream and COVID
- Collaborations
- Improvements and Spinoffs
- Impact
- Future Goals
- Discussion



Background

- Since 2010, Ryan has been involved with R instruction
 - A constant demand for more and more varied instruction, **especially Python**
- Rutgers has also had an active Digital Humanities program
 - Francesca Giannetti, Digital Humanities Librarian, hired in 2014.
- Work with Deborah Silver in Professional Master's Program and Manish Parashar in RDI2 (Rutgers Discovery Informatics Institute) on grant proposals for “Data Science Learning Concierge”, seeding ideas for:
 - developing pathways to learning technology outside of coursework
 - hiring non-LIS graduate students for teaching and consulting
 - building out physical and virtual spaces
 - library as a neutral and friendly “third place”



Director's Perspective

(Dee Magnoni, Associate University Librarian, Rutgers University-New Brunswick)



Rutgers | R1 research university, member of AAU and Big10



New Brunswick Libraries, Fall 2017 | Foundation of strong R, DH, and data management workshops

Need to expand advanced research services and partnerships



Approached late fall 2017 with a pilot proposal that would:

Address need for advanced research workshops and provide opportunities to PhD and advanced graduate students
Deliver augmented and new areas of expertise



Director's Perspective: Strategic Fit



- Pilot in parallel with strategic planning data collection
- Identified sandbox funding and drafted initial positions for Spring 2018 semester
- COVID perspective: Pilots in the time of crisis



Defining the Program

- Other data services such as [NYU](#), [Duke](#), [Princeton](#) have full time staff support
- Initial name was Library Fellows, but “Graduate Specialist” was chosen to be more precise and not conflict with other position titles
- Learning and skill-building opportunity for the specialists
- Drawn from New Brunswick grad school population
- Higher wage rate (\$25 vs. \$15) than the Libraries norm
- Initial focus on quantitative data and digital humanities
- Open to expansion beyond “data”
- Combined teaching and consulting role



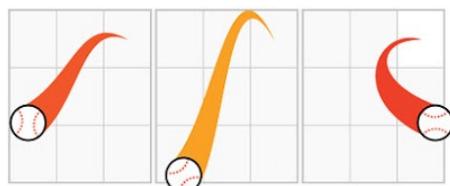
Pre-Spring 2018

- Meeting with Libraries HR to clear the new positions and outline requirements
- Developing position descriptions:
 - Data Services Graduate Specialist: Successful applicants will be highly motivated individuals with a strong interest in data analytics. Knowledge of statistics, data analysis, visualization, and relevant programming techniques is required. Intellectual curiosity and strong interpersonal and communication skills are required qualifications for this position.
 - Digital Humanities Graduate Specialist: Successful applicants will be highly motivated individuals with a strong interest in digital humanities work within an academic or GLAM (galleries, libraries, archives, and museums) setting. Knowledge of one or more digital humanities research methodologies is required. Intellectual curiosity and strong interpersonal and communication skills are important qualifications for this position.



Spring 2018

- Posting, Interviewing, Onboarding
- Marketing to Departments and Schools
- Each Specialist has mentor/supervisor (Ryan and Francesca)
- Curveball: family emergency



[This Photo](#) by Unknown Author is licensed
under [CC BY-NC-ND](#)

- Getting used to spaces:
 - physical (DH lab and Library Classrooms)
 - virtual (creating LibGuides, Github repositories)
 - <https://libguides.rutgers.edu/graduatespecialist>
 - <https://github.com/NBLGraduateSpecialistProgram>



Graduate Specialist Program (New Brunswick Libraries): Text Analysis in R

Home page for the New Brunswick Libraries' Graduate Specialist Program

Search this Guide

Search

Home	Consulting Hours	Workshops	Workshops - Date order	Python	Text Analysis in R	NVivo	Git	GIS	R	Scalar
						Palladio for Mapping		Word Vectors and Text Analysis		

R Setup

New to R?

First you'll need to [download R itself](#) for whichever operating system you're using. Second, you'll want to [download RStudio](#), a program that makes working in R much easier by adding a text editor for writing or loading R

Text Analysis of Historical Newspapers

To download the materials used in this two-part workshop on text analysis of historical newspapers in the [Chronicling America database](#), head to the [project repository on GitHub](#) and click the green "Clone or download" button.

The first workshop introduces strategies for fuzzy string matching, using OCR-derived text from the *Perth Amboy Evening News*. The second workshop begins with the result of the previous and explores of a few possible methods for analyzing phrase use over time, page location, collocate words, and uniqueness. Use the PDF

Digital Humanities Graduate Specialist



Alex Leslie

[Email Me](#)



github.com/NBLGraduateSpecialistProgram

New Brunswick Libraries Graduate Specialist Program

📍 New Brunswick, NJ ↗ https://libguides.rutgers.edu/gr...

Repositories 14 Packages People 3 Teams Projects Settings

Find a repository... Type Language Sort Customize pins New

Python2021_Palmere

Python workshop materials developed by Robert Palmere in 2021

Jupyter Notebook 0 ⚡ 2 ⚠ 0 ⚡ 0 Updated 12 hours ago

Top languages

Jupyter Notebook HTML

People

3 >

Python2020_Badhe

Forked from SankBad/Rutgers_library_python_workshop_fall2020

Python workshop materials created by Sanket Badhe through Fall 2020 (see <https://github.com/SankBad>)



Spring 2018 - Results

- Data workshops were developed on *Python Basics and Data Exploration*, *Data Manipulation and Analysis with Python*, and *Data Visualization and Machine Learning with Python*. Consulting on Python, Data Cleaning, and Data Analytics.
- DH workshops created on *Using Historical Newspapers in the Classroom*, *Chronicling America in R* (2 part series), and *Using Tropy to Organize Research Materials*. Consulting on R for textual analysis, topic modeling, and geospatial analysis.
- 50 Python registrants, 29 DH registrants



Spring 2018 - Feedback

- Candidate pool was good.
- In spite of limited advertising, workshops had good attendance. The feedback was uniformly positive. For both instructors, almost all participants were "Extremely Satisfied"
- "The instructor was super helpful and the material presented was easy to understand."
- "I liked that the material is on github, and that the instructor provided us with practice examples and places to continue learning python."



Spring 2018 – Feedback, continued

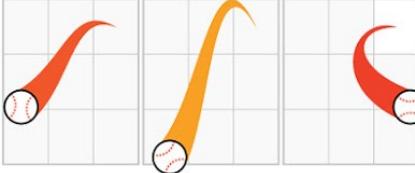
- The "consulting hours" on the other hand, were sparsely attended. The location of the DH Lab and lack of advertising/signage/marketing were a challenge.
- Commenters asked for more workshops and a wider range of topics covered, rather than more hours for individual help. Since the workshops also produce reusable and accessible learning materials, this seemed to be the most beneficial area of focus.
- Webinars – already in Spring 2018 these were being requested.



[This Photo](#) by Unknown Author is licensed under
[CC BY-NC-ND](#)



AY 2019 - Expansion

- Moved to 4 specialists (PhD students in English, Public Policy, Economics, and Masters in Data Science)
- Added Qualitative Specialist and Open Science specialist with new library faculty mentors (Karen Hartman and Laura Palumbo)
- Built on existing workshop content, plus new content on Nvivo, Github
-  Curveball: international student eligibility
- Increasing registrations and attendance: 104 Python, 73 DH, 21 Nvivo in Spring 2019
- We did not succeed in implementing webinars! Always seemed to run out of time.



AY 2020

- Continuing demand for more Python led to reconfiguration:
- Two Quantitative Data Specialists, DH, Qualitative, and new GIS Specialist
- New topics: Scalar, Hugo, Cryptocurrency, Neural Networks, QGIS, Palladio, Tableau, and many more!
- Spring 2020: 108 Python, 48 DH, 69 Nvivo, 18 GIS



Digital Humanities Graduate Specialist



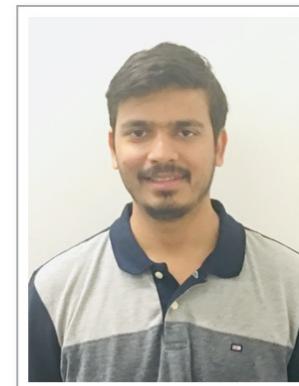
Caterina Agostini

GIS Specialist



Rahul Dagli

Quantitative Data Analytics Specialist



Sanket Badhe

Digital Humanities Graduate Specialist



Alex Leslie

2020 cohort

Qualitative Data Specialist



Shari Cunningham

Quantitative Data Analytics Graduate Specialist



Sly Zhong



Spring 2020 Workshop Topics





Feedback and Suggestions

- Patient, detailed and clear instruction, approachability is valued
- More topics: APIs, data wrangling, forecasting, statistical concepts, app development, video editing, software engineering, REDCap, MATLAB
- General suggestions: Better advertising, materials in advance, snacks!
- Pace and depth of content is a Goldilocks problem



[This Photo](#) by Unknown Author is licensed under [CC BY-SA](#)



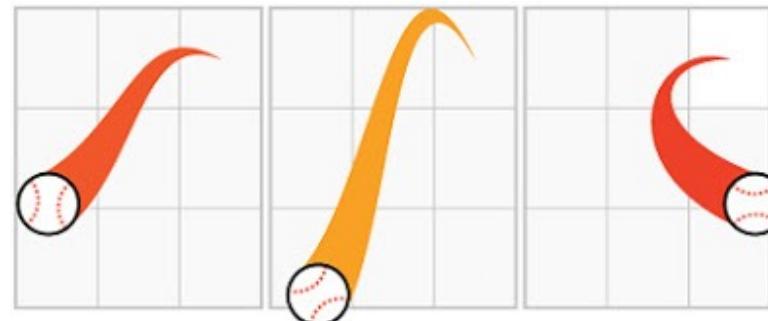
JetStream

- One goal has been to provide a more welcoming, flexible, and modern space for interactive teaching. Insights from the hands-on workshops of the Graduate Specialists informed the design of the JetStream.
- https://libguides.rutgers.edu/nbl_spaces/Jetstream
- The ideal is to encourage collaborative, innovative learning
- The funding model (free for events that meet the JetStream's mission criteria) encourages this.
- JetStream is also linked to other space initiatives (Hatchery - IDEA)





COVID-19



- Within a couple of weeks (around Rutgers Spring Break), we rapidly moved from a warning situation to a complete closure of all library buildings [goodbye, JetStream!]
- Because of our technologically expert cohort of specialists, and well-developed bank of online materials, all of our specialists were able to offer some of their workshops online.
- In many cases, the series were offered in their entirety.
- We finally succeeded with webinars!
- We are well-prepared for primarily online contact in the Fall.





AY 2021

- All online – majority also made available via recording
- New hires came in Spring 2021
- Simplifying job titles: Data Science Graduate Specialist, Digital Humanities Graduate Specialist, Qualitative Data Graduate Specialist
- AY 2021 (Fall/Spring): 566/154 Python, 89/37 DH, 64/59 Nvivo
- Data Science Basics: 282/184
- Registrations – actual attendees about half that
- Big surge in Fall 2020, falling off in Spring 2021 (Zoom fatigue?)



AY 2021

- Three data specialists left after Fall 2020 because they completed their job search early!
- Job placement for data specialists at RedHat, Citi, Gap.
- New hires came in Spring 2021
- Simplifying job titles: Data Science Graduate Specialist, Digital Humanities Graduate Specialist, Qualitative Data Graduate Specialist
- *"I've learned so much from my experience of conducting workshops and consulting hours over the past 1.5 years, and my time spent as a Graduate specialist has been such a valuable part of my career journey. This work experience helps me in my interviews for data science-related positions. Also, It helps me to express my thought and communicate better which utmost importance in the data science field. I know I'll carry the things I've learned here with me to my next adventure, and I'll always look back on this experience with a lot of fondness."*



Collaborations

- In AY 2019, we had several requests to repeat workshop content for specific audiences (departments or specific research methods classes), which we were able to accommodate. An indicator of the relevance of our content.
- These continued in AY2020, and also two significant external collaborations developed, primarily due to interest in the Python and R content built up by our specialists.
- After cross-posting workshops, the Office of Advanced Research Computing began working with us in Summer 2020 to develop Python/R workshop that also introduces users to work on OARC's HPC cluster, with big data examples.
- These “Machine Learning with Amarel” workshops ran in AY21.



Collaborations - Erdos

- The Erdos Institute (<https://erdosinstitute.org>) is an initiative to train PhD students in Data Science skills, begun at Ohio State, but expanding.
- Rutgers-NB's School of Arts and Sciences approached the Libraries to hold an Erdos Data Science Bootcamp at Rutgers, to be held in our JetStream room in May 2020.
- Because of COVID, this went online and became a single nationwide joint event with participants from Ohio State, Rutgers, and other universities.
- Our Quantitative Graduate Specialists (and Ryan) provided essential support as Teaching Assistants to the 129 students in this month-long intensive experience in 2020. Up to 300 in 2021!
- Rutgers students won the prize for best project!



THE ERDŐS INSTITUTE

Helping PhDs get jobs they
love.

Helping you hire the PhDs you
need.

[Home](#) [Industry Seminars](#) [Data Science Boot Camps](#) [Digital Campus](#) [Contact Us](#)



**300+ PHDS FROM
70+ UNIVERSITIES
MEET THEM THIS MAY AT OUR
2021 DATA SCIENCE BOOT CAMP**



LibCal

- We suffered from a patchwork of tools across multiple platforms – Qualtrics, Google Forms, Microsoft Forms, Bit.ly, Rutgers link resolver, Github, Libguides, Google Colab
- This gave the impetus to start using SpringShare's LibCal for our service.
- <https://libcal.rutgers.edu/nblworkshops> and [Feb 21 view](#)
- All listings, registration, reminders, and other information can be centrally managed. Feedback forms also through Springshare's LibWizard.
- Major marketing benefits as our workshop calendar was now easily found and understood.
- Able to cross-list OARC workshops too.



Spinoffs

- Experience with the Graduate Specialist hiring model enabled us to develop two new programs for the Libraries in AY 2021.
- [IDEA Program](#) (Design Thinking experience for freshmen)
- Intensive Literature Review (research service to faculty)
- Student wages were externally funded, but our management capacity made it possible.
- These programs are supported by graduate specialists hired for their relevant skills to these programs.



Impact

- Hundreds of students learned the use of advanced research tools
- Graduate specialists (14 to date) given valuable teaching and instructional development experience
- Archive of online material that can be used any time
- Improved physical and virtual spaces for technology instruction
- Seen as relevant by other units, building opportunities for collaboration
- Transformative (and cost-effective) at a time when library budgets and staffing have otherwise stagnated



Other Considerations

- Specialists need some time to get going. Rushed recruiting and workshop development at the start of Fall semester meant that Fall workshops did not reach full potential.
- An increasing number of students have already focused on data science even from high school – so “Intro to ...” may not be relevant for them. Finding the “sweet spot” of newish skills that are ready to see wider adoption.
- Topics are a moving target
- Staff resources often not easily accessible to students
- Sustainability



Future Goals

- Continue building out virtual spaces and return to physical community
- Junior/Senior specialist model to provide mentoring within the cohort
- Most relevant skills and topics are a moving target to adapt to
- Build further collaborations to more units on campus



[This Photo](#) by Unknown Author is
licensed under [CC BY-NC](#)



Questions?



- Please feel free to contact me at

rwmack@libraries.rutgers.edu
<https://ryanwomack.com>

to continue the discussion!



Thank you!

- Thank you for your attention at the best virtual IASSIST ever!

Баярлалаа!

תודה Dankie Gracias شکرъ Спасибо Merci Takk
Köszönjük Terima kasih Grazie Dziękujemy Dékojame
Дакујеме Vielen Dank Paldies Kiitos Täname teid 谢谢
感謝您 Obrigado Teşekkür Ederiz 감사합니다
Σας ευχαριστούμε Bedankt Děkujemě vám ありがとうございます
Tack

Thank You