

NYUAD Faculty Geospatial Needs Assessment

Report compiled by Taylor Hixson, Librarian for Geospatial Data Services | Spring 2020



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Project timeline

Spring 2019

- Develop data collection method: interviews, emails, free text
- Come up with list of respondents based on previous reference interactions, asking librarians, asking initial set of respondents
- Interviewed respondents

Summer 2019

- Developed faculty personas
- Drafted report

Fall 2019

- Presented findings at Sunday meeting

Spring 2020

- Delivered final report

Data collection methods

- Method: informal interviews

- Chosen because over-surveying of NYUAD community. Colleagues have seen low response rates and minimal success with surveys and forms. Higher responses and quality when conducting interviews, direct and personal emails, and/or focus groups
- Interview questions
 - Would you consider yourself a current user of GIS/geospatial data?
 - How do you use it?
 - What have your prior institutions had that we don't?
 - What would you like to see?
 - Are there any geospatial needs you have that are currently not being met that you think the university or library could be meeting?
 - Do you think GIS/geospatial data is important to your colleagues, deans, administrators, students?
- Email language:

Dear {INSERT NAME},
{INSERT INITIAL CONTACT RELATED TO ESTABLISHED RELATIONSHIP OR LIBRARIAN REFERRAL}.

I am reaching out because I am gathering feedback about how the campus community would like to see the NYUAD Library continue to support research, teaching, and learning related to geospatial data and the use of mapping tools.

If you are interested in contributing some ideas or have any questions, let's find a time to talk more! Feel free to suggest some times that work for you during the remainder of the spring semester, or if you're unable to meet, please share any ideas or suggestions you may have via email.
- Curated list of people to reach out to (See responses spreadsheet)
 - Chosen based on prior contact, relationships with library regarding GIS/geospatial
 - Initial list attempts to target roughly equal or representative responses from each division, but affiliation of response rate from divisions may vary. Will make an effort to equalize the data

Responses

See: Responses spreadsheet

- 8 in-person interviews
- 1 email response to my initial contact with good content, which was used in personas creation

Analysis: faculty personas

The qualitative content collected in the interviews as well as content available from previous reference interactions to supplement gaps in interviews were used to create three faculty personas.

Personas were decided on as the output of the analysis in order for the library to better identify user patterns of behavior in order to create streamlined and satisfactory service. The personas are fictional characters that do not represent a single user but rather a typical user in one of three categories: the novice, the professor, and the big thinker.

Below are the user personas with a general research profile, skills, motivations, frustrations or challenges, and ideas for library interventions. For the full personas with graphics, see the supplemental PDF file NYUAD Faculty GIS Personas 2019-2020.

The Novice

Rachel has been at NYUAD for two years and is a Faculty Fellow in NYUAD's arts and humanities department. She has used geospatial tools and data in a limited way to make simple maps and even incorporated some basic concepts into a class, but she does not consider herself a daily user of GIS or geospatial data because it is not part of her daily work or title. She did take a class on it in graduate school. Rachel wants to learn more but feels overwhelmed by the task, uncertain of which tutorials to take, tools to invest in, or what may be worthwhile. She has been impressed by how her colleagues have used geospatial tools and analyses in their research and understands it is an important skill and would be beneficial to her research, especially when it comes to building a unique CV that would make her a strong candidate for future opportunities.

- **Position/Role:** Faculty Fellow in Arts & Humanities
- **Geospatial Technical Ability**
 - Web GIS
 - Basic desktop (can load a dataset and complete other functions with documentation, completed a GIS course in grad school)
 - Experience with other data analysis tools and programming languages
 - Strong research and project management skills in field of study
- **Motivations/Goals**
 - Opportunities for expanding current research areas
 - Obtaining a tenure track position, promotion, extension of contract
 - Continuing to establish self in field
- **Frustrations/Challenges**
 - Unsure of how to structure geospatial data and manage geospatial projects
 - Unsure of which tools to use or choose
 - Barriers to entrance on learning: many tutorials out there, but many also assume some prior knowledge. Gatekeeping.

Helpful library and/or university interventions

- Continue to host introductory workshops for GIS and geospatial research

- Offer syllabus development as a service for faculty who want to integrate data skills and/or GIS into courses

The Professor

Mohammed has been at NYUAD for five years and is an assistant professor on the tenure track in the social sciences department. His major research themes ask geospatial questions, and he is a nearly daily user of geospatial tools such as ArcGIS. Many of his course assignments require his students to learn and use GIS. He has a solid understanding of GIS, its importance in his field and research, and is always looking for new ways to expand his geospatial toolbox. He does not need basic assistance for getting started with GIS or seeking out data. Primarily, he needs assistance with finding obscure data and map projections and developing training and workflows for his student assistants.

- **Position/Role:** Assistant Professor (Tenure Track, recently turned in promotion docket)
- **Geospatial Technical Ability**
 - Intermediate usage of ArcGIS, can perform complex analysis by following documentation
 - Data collection (such as finding sources, merging data, own field collection, and cleaning and merging messy data sometimes from varied sources)
 - Experience with R and/or Python as well as other data analysis tools used in field
- **Motivations/Goals**
 - Publications
 - Become/Maintain position as leading researcher in field on these topics and applications
 - Tenure
 - Grant approval, funding
- **Frustrations/Challenges**
 - Seeking out and purchasing data for research, courses
 - Identifying and working with more obscure map projections and data types
 - Developing training and workflows for research assistants

Helpful library and/or university interventions

- Start a community of practice so researchers from different domains can meet
- Offer a more structured faculty consulting service to work on agreed upon tasks and develop training materials for research assistants

The Big-Thinker

Jean-Paul has been an associate professor in the NYUAD sciences department essentially since day 1 of the university. Many of the research scientists and assistants in I's lab use geospatial tools and data, and these are fully integrated into much of the field research done by her lab. Even though her research deals in space, i.e., species in a particular area or a particular biome, she does not consider herself to be a user of GIS because her field isn't geoscience, her work doesn't produce many maps, and much of the nitty-gritty work is being done by her lab workers. I has big ideas about sharing her and her global collaborators' research data in an open-online platform but is online unclear about the software and

web development and digital sharing environments that would encompass the mass sharing, analyzing, interacting, and downloading of large datasets.

- **Position/Role:** Associate/Full Professor
- **Geospatial Technical Ability**
 - Experienced with programming languages and analysis and visualization tools used in field, not necessarily geospatial if at all
 - Experienced with collection data in the field and those tools needed (not necessarily geospatial or up on latest methods for collaborative geospatial data field collection, i.e., Survey123)
- **Motivations/Goals**
 - Grants
 - Publications
 - Continued funding of lab or research center
 - Global recognition and collaboration
 - Create new tools, software and web applications
- **Frustrations/Challenges**
 - Understanding of full-stack web and software development, particularly for GIS (e.g., databases and servers for geospatial—PostGIS, OpenGeoServer)
 - Geospatial data management systems
 - Appropriate systems and platforms for sharing geospatial data with colleagues and public

Library interventions

- Continue offering library partnership opportunities to share data management and archiving expertise
- Hire student workers or staff to consult on and develop web applications and software

Further recommendations and work

From these interviews, one major theme that was not discussed but clear was the lack of graduate and professional students across the divisions with longer terms at the university to dedicate to higher-level or specific geospatial research that can advance a faculty member's existing work. There is also a lack of general research support staff in the divisions to work with faculty long term. Faculty need research support in the sense of long-term methods, analysis, project design, etc. that library is not equipped to offer on a large scale or as domain experts. While we can offer consultations to anyone and partnerships, there is a limit, which needs to be filled by more robust divisional support. In addition to increased divisional support and to continue building service based on faculty needs, the library should consider hiring someone as a data analyst, web developer, or someone with database administration and deployment skills—this does not need to be a librarian role. If more hires are not possible, the library should consider engaging the already technologically literate Center for Academic Technology

team in trainings and partnerships to pilot working with faculty on more embedded research opportunities.

Another area for advancement within the library and university is offering more clear delineation of services or where to get service. That is, who should faculty ask for assistance with data models and analysis and who should they ask for data access and acquisition? One interviewee mentioned the models at both Stanford and Princeton had more clearly defined departments and people for data access, acquisition and others for data scripting, methods, automation in research. Overall, the library (both NYUAD and NYU Libraries as a whole) should start to provide better communication around who and what goes where to better avoid faculty confusion and frustration. This can be achieved through both a communication campaign and more clearly defined employee roles. For example, the library can post to the intranet or faculty newsletter each semester to remind faculty about how the library makes decisions about purchasing data and where to suggest purchases. The Center for Digital Scholarship blog could also post interviews with the NYUAD Library Director and/or NYU Libraries Head of Collection Development about intricacies of buying data for libraries, how it works, what process should people take, when is it appropriate to have the library buy data vs using own research budget in an effort to be more transparent.