Data Science Community Center - Proposal for Education Space Working Group
Ariel Deardorff, Data Services Librarian, UCSF Library
January 11, 2019

Our Vision: To build a unique tech-centered experiential learning center that can be a community hub for data science on the Parnassus campus. This new space will be a physical home for the Library's data science initiative, a place where students, faculty, and staff can come together to learn essential modern research skills like programming, data exploration, and digital discovery. Crucially, the space will function as a community crossroads, where UCSF community members can come together and connect over data-driven research and discovery.

Our Audience: Just as the mission of the UCSF Library is to serve the entire campus, the Data Science Community Center (DSCC) will welcome the entire UCSF community, including students, faculty, postdocs, and staff.

The Space: The Data Science Community Center would be a new flexible education space in the UCSF Library. Designed to host data science educational programs and events such as meetups, hackathons, classes, lectures, and consultations, this space will bring together members of the UCSF community to learn data-driven research skills and engage with the rich expertise and collections available through the Library. Unlike the classrooms that already exist in the library, the spaces in the DSCC will be dedicated to data science and designed with flexibility in mind, to allow for a range of hands-on, participatory learning activities that can be tailored to the unique needs of UCSF learners. We envision this as a site of exploration and open pedagogy, where learners bring their unique skills and experiences to collaboratively build meaningful educational experiences.

The space - most likely located within the Parnassus Library - will include:
- One larger space with removable chairs (40-60ppl) for Social Events/Hackathons/Workshops/Lectures
- Smaller classroom with easily re-arranged tables (1-2) for smaller meetups, classes, group work
- Consultation/small group rooms (2) for 1:1 consultations, group work
- Casual Space/Atrium, similar to coffee shop for informal meetings, individual work, community connections
- Data Science staff workspace to co-locate teaching staff with learning spaces

All spaces would be equipped with flexible furniture to enable small group projects and hands-on learning. Spaces would also feature videoconferencing equipment to allow participation from UCSF community members located across the city.

What we are trying to enable:
- Networking and collaboration
- Serendipitous research encounters
- Community building
- Active learning both formal and informal
- Expanding tech/data/research capabilities
- Experimentation and exploration
- Open pedagogy

DSCC Activities:
- Consultations on a wide variety of data topics, including data visualization, open science, programming in R/Python/SQL, bioinformatics, statistics, digital preservation, research using unconventional or archival data-sources, and data capture from outdated computer media.

- Meetups & study groups on programming, natural language processing, and text extraction
- Hackathons on programming, capture and analysis of data, and use of archives collections as data-sources.
- Talks by UCSF researchers and industry partners on data science, open science, digital preservation, and critical digital literacy in a health sciences context.
- Small, informal pop-ups and larger, more formal classes on programming, and digital archives and preservation.
- Drop-in space for programming, and digital forensics projects.
- Social/community-building events around data science, open science, and unique UCSF resources.
- Collaborative events with other UCSF departments, such as the Bakar Institute for Computational Health Sciences, Clinical and Translational Sciences Institute, Graduate Division, Department of Anthropology, History, and Social Medicine.
- Public events involving local programming meetups, hackathons, or talks to connect UCSF researchers with the wider SF tech community.
- Educational events and classes on holistic digital research and scholarship, incorporating knowledge and expertise from all areas of this new facility – data science, & digital archiving.

Two theoretical encounters with the Data Science Community Center

Jess is a clinical researcher who is attending an early morning Pubmed data-mining class in one of the small classrooms in the DSCC. Because of the small class size and hands-on nature of the class, she is able to practice using the Pubmed API and figure out a strategy for an upcoming research project. After class she decides to stick around the DSCC atrium to work for another couple of hours before returning to the clinic. She finds a comfortable lounge chair and starts working on her laptop. Later as she is preparing to leave for lunch, she notices a group of researchers sitting around eating pizza and working on their laptops. It turns out they are learning to program in R and welcome Jess to join them. Intrigued, Jess grabs some pizza and chats with a postdoc about how they use R to make their research more reproducible. Jess decides to sign up for a programming class that is offered the next day in the DSCC and returns to the clinic full of new ideas.

David is a new postdoc at UCSF who is interested in open science. He heard there was an open science meetup in the DSCC and came to check it out as he wants to connect with other researchers interested in open research protocols. Today's meetup features lightning talks in the DSCC atrium followed by breakout sessions in the small meeting and consultation rooms. One of the lightning talk presenters is also interested in open protocols and David ends up chatting with her and a group of graduate students about their experience. They eventually decamp to a corner of the atrium where they grab a whiteboard and start sketching out ideas for an article on protocol sharing.

Who is involved?

The Library's Data Science Initiative was created to address the gap in computational skills on campus and has focused on providing classes to build basic programming, statistics, bioinformatics, and data visualization skills in the UCSF Community. Classes are attended by people from across the UCSF community, from researchers to admin staff. A physical home for the Data Science Initiative, co-located in the Parnassus Library alongside the Makers Lab and a digital forensics workspace, would help build a new community of researchers and learners to connect, collaborate, and learn together.

Digital Archives is a new program within the Library's Archives and Special Collections that helps researchers and campus departments access and preserve data on obsolete media (floppy disks, zip disks, etc.) and prepares and provides access to Archives collection materials as research-ready data for use in computational health-sciences research. A space at Parnassus would bring this program together with the similarly-focused Data Science Initiative, and create a campus-facing physical location for workshops, tinkering, and consultations on the use of these valuable archival resources and the expertise of the archives staff.