Beyond the customary library services in instructional programs and reference, five health sciences librarians will discuss key aspects about their work in academia and public health information centers.
About Me

• BFA - Visual Culture Education
  Concentration in 3D Media
• Masters Library &
  Information Sciences
• Computer Sciences – JAVA, R, C++,
  Data Analysis, Databases
• Archives, Museums, Public Libraries,
  Cultural Libraries, Health Sciences
  Libraries
• Diversity, Social Justice, and Cultural
  Identity Exploration
The mission of the NNLM is to advance the progress of medicine and improve the public health by providing all U.S. health professionals with equal access to biomedical information and improving the public's access to information to enable them to make informed decisions about their health.
New England Region (NER)
NER proudly serves: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. The New England Region is based in Worcester, MA, at the University of Massachusetts Medical School.
The NPHCO provides access to library resources, including e-journals, e-books, and research through the Public Health Digital Library.
NNLM NER – Recently Funded Projects

- University of New England – Extended Medical Education Virtual Reality
- Pettaway Pursuit Foundation – Doula Technology Enhancement
- CoughSpot – CoughEtiquette
- Springfield City Library – Health in the Square
My Unique NNLM Responsibilities

• Data Analysis & Mapping
• Website Development & Design
• Storytelling with Data
• External & Internal Communications
• National & Regional Teams
• Government & University Policies
• 508 Compliance
• Curriculum Development
• Teaching Webinars
• Organizing Interest Groups
• Assisting Funded Projects
Professional Development for You!

Free classes → nnlm.gov/professional-development

Topic examples: PubMed for Librarians, Healthcare Trends, Classroom Assessment, Consumer Health Information, Data Visualization, Community Collaborations, Exploring Nutrition, Genetic Information, Graphic Medicine, and so much more!
Questions?

Allison Herrera
Technology & Communications Coordinator

Allison.Herrera@umassmed.edu
@AllisonKHerrera
508-856-5979 (office)
Bioinformatic Support at the Health Sciences Library

February 7, 2017
Jeffrey C. Oliver, PhD
US GOV'T DATA EXPLOSION

- **7.5 Petabytes EOSDIS Archive**
- **5,081,929** terabytes
- **1.7 terabytes** Landsat archive
- **9.6 billion** devices
- **58 million** wearables
- **28.1 billion** installed
- **13.7 billion** installed
- **21 million** installed
- **140 billion** DNA bases
- **20 petabytes** stored
- **80 terabytes** stored
- **100 exabytes** stored
- **30,000+ drones**
- **7,494** drones per day
- **43 terabytes**
- **7,000+ drones**
- **800 terabytes**
- **20 petabytes**
- **58 million** wearables
- **7.1 billion** devices
- **15 petabytes**
- **225 exabytes**/month
- **84 exabytes**/month
- **10 petabytes**
- **20 exabytes**/month
- **1.7 petabytes**
- **300 terabytes**

**Sources:** IDC, Cisco, US, INE, INEI, Turk Imaging Journal, WNMT, Washington Times, Information Week, Keith C. Alexander. ©2018 Scaleity. All rights reserved. Scaleity, Inc., Scaleity logo, Scaleity iNAV, and other trademarks referenced herein are proprietary trademarks of Scaleity in the United States and/or other countries.
Lots of data, but how are they actually used?
Example

*How many genes are on each human chromosome?*
Example

How many genes are on each human chromosome?

NCBI's RefSeqGene database has ~64,000 human gene records...
How many genes are on each human chromosome?

NCBI's RefSeqGene database has ~64,000 human gene records...

...but there are only ~19,000 protein-coding genes in the human genome
Example

How many genes are on each human chromosome?

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<tr>
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How many genes are on each human chromosome?

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**Example**

*How many genes are on each human chromosome?*

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Example

How many genes are on each human chromosome?

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The future of health sciences: an opportunity for libraries
Big data biomedicine offers big higher education opportunities

John Darrell Van Horn

Creating the Future Biomedical Research Workforce

Frederick J. Meyers and Claire Pomeroy
Big data biomedicine offers big higher education opportunities

John Darrell Van Horn A,b,1

6322–6324 | PNAS | June 7, 2016 | vol. 113 | no. 23 www.pnas.org/cgi/doi/10.1073/pnas.1607582113

Creating the Future Biomedical Research Workforce

Frederick J. Meyers and Claire Pomeroy


EMBRACING CHANGE
If we accept this broader charge for biomedical science, then workforce development requires new approaches:

(ii) New skills. Biomedical science trainees require a new set of core knowledge competencies, such as bioinformatics, statistics, the “omics,” nanotechnology, regenerative biology, economics, social and behavioral sciences, and communication.
> echo "Hello world!"
Hello world!
Learn R

A collection of lessons for learning the R programming language. Generally designed for the novice, these lessons assume little background knowledge with R or programming in general. The majority of these lessons will focus on specific problems and will demonstrate how R can be used to solve them.

Introduction to R Graphing

Jeff Oliver
22 July, 2016

This brief tutorial will demonstrate how to create a basic plot in R from a text file of data. This introduction provides an entry point for those unfamiliar with R (or a refresher for those who are rusty). We will start with a very minimal piece of code and work our way up to code that automates the creation of 12 different pdf files, each with a different X-Y scatterplot.

Learning objectives:
- Gain familiarity with R
- Read data from a file
- Visualize data in a graph
- Understand the principle of control flow

In this tutorial, we will be using the ‘gap’ package,

Introduction to R Statistics

Jeff Oliver
16 September, 2016

An introduction to using the R statistics package and the RStudio interface.

Learning objectives
1. Read data from files and output results to files
2. Extract relevant portions of datasets
3. Run standard statistical tests in R, including Student’s t, linear regression and analysis of variance

Setup
First we need to setup our development environment. We need to create two folders: ‘data’ will store the data we will be analyzing, and ‘output’ will store the results of our analyses.

```r
dir.create(path = "data")
dir.create(path = "output")
```
Questions?

Contact me at:
Jeff Oliver
jcoliver@email.arizona.edu
Annabelle V Nuñez
MEZCOPH Liaison Librarian
Research & Learning Department
About Annabelle

• Worked for non-profit arts agency
  – Neighborhood and cultural programming

• Community advocate & activist

• Previous experience integrated into librarianship
Community engagement and activism

City eyes three-tier garbage charges
Arizona Daily Star, The (Tucson, AZ) - Sunday, January 30, 2005
Author: Joe Burchell, ARIZONA DAILY STAR
Size of can would govern 'Pay As You Throw'

When it comes to your garbage, the city is looking to lighten your wallet if you don't lighten your load.

In an effort to get Tuscans to recycle and compost more - and throw away less - the city may offer customers three different rates, depending on how

Neighbors are leery of taping drug deals
Arizona Daily Star, The (Tucson, AZ) - Sunday, September 17, 2006
Author: Rob O'Dell, ARIZONA DAILY STAR
Leaf's office loans camera; some warn it's dangerous

Councilman Steve Leal spent $549 in city money on video-recording equipment for residents in his SouthSide ward to record drug deals.

Area gets speed bumps in wake of 2 kids' deaths
Friday, August 25th, 2006

New speed bumps and other safety improvements slow traffic in a Southwest Side neighborhood where two children were killed in a 2001 automobile accident.

National City neighborhood residents asked the county for the improvements after the deaths of Valeria Riley, 10, and Manuel Escarega, 9, said Annabelle Nuñez, a past president of the neighborhood association.

A dedication ceremony for the improvements, funded with $140,000 in county bond proceeds, is scheduled for Saturday. The work included installing two fountains and refacing a pedestrian bridge at Redex Wash Park.

City limits sale of gas canisters used to get high

Annabelle Nuñez started noticing the shiny metal cartridges in her south-side neighborhood last spring. The objects were lying in pavement cracks, the roofs of street curbs and along speed bumps.

Nuñez knew teenagers were likely using the cartridges, which contain nitrous oxide, also known as laughing gas, to get high by inhaling the fumes. She wanted the Tucson City Council to take action and restrict access to the cartridges.
Mel & Enid Zuckerman College of Public Health (MEZCOPH)

• Established in 2000, (embedded in 2007)
• Top 5 colleges in American Indian and Hispanic students and graduates
• Academic divisions
  Community, Environment and Policy
  Epidemiology and Biostatistics
  Health Promotion Sciences
MEZCOPH (con’t)

• Bachelor of Science in Public Health (BSPH)
• Master of Public Health (MPH) Program
  • Seven concentrations
• Doctorate in Public Health (DrPH)
• Dual Degree Programs
• Certificate Programs
• Centers and Offices
Orientation & Integration

• Networking with the constituency
  – College orientation and course/class
  – Listserv, access to dept intranet, committee involvement, projects/programs, meetings,
    college events, seminars
- Social functions
- College of Public Health Appointment – Lecturer
Orientation & Integration *(con’t)*

• Subject specialist
  – Membership to APHA
  – Listservs
  – College presentations, seminars
  – Webinars,
  – Public health literature
Services - Faculty

– Curriculum support
  • Course integrated instruction

– Research support & integration
  • Grant opportunities, literature searches, information services and training included in grant

Activity - Systematic Reviews
Services - Students

• Customized workshops
  – Research skills and resources
    • PubMed, PsychINFO, PHPpartners, EndNote Online/RefWorks

• Grant opportunities or research projects

• Individual consultations
  – Student internships
  – Systematic reviews, scoping reviews
Thank you!
Questions or follow-up

anunez@email.arizon.edu
(520)626-7508
Who I am

Brenda Linares, MLIS, AHIP
Outreach Librarian and Coordinator of Research Assistants
UNC Chapel Hill Health Sciences Library

Education
MLIS, University of California, Los Angeles (UCLA)
BS in Finance, California State University, Northridge (CSUN)

MBA in progress, North Carolina State University (NCSU)
National Library of Medicine (NLM) Associate Fellowship

- [https://www.nlm.nih.gov/about/training/associate/](https://www.nlm.nih.gov/about/training/associate/)
- A one-year postgraduate training fellowship at the NLM in Bethesda, Maryland. The program is designed to provide a broad foundation in health sciences information services, and to prepare librarians for future leadership roles in health sciences libraries and in health services research.
What do I do as a Health Sciences Librarian?

• Training/Instructor
• Special Projects
  • NC Health Info
  • Global Health
• Co-Liaison to the School of Public Health
• Collaborate with the community and community organizations
  • Public Libraries
  • Community Colleges
• Users
  • Students
  • Researchers
  • Faculty
  • Nurses
  • Doctors
  • Librarians
  • The public
Health Literacy

• Is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.

• Health literacy is dependent on individual and systemic factors:
  • Communication skills of lay persons and professionals
  • Lay and professional knowledge of health topics
  • Culture
  • Demands of the healthcare and public health systems
  • Demands of the situation/context

http://health.gov/communication/literacy/quickguide/factsbasic.htm
Outreach Services

• Partnership with community colleges
• Partnership with Public Libraries
• Consumer health and health literacy
Funding Opportunities/Training

• National Library of Medicine (Regional Medical Libraries)
• https://nnlm.gov/regions
http://www.nchealthinfo.org/

- Assist with consumer health questions
- Seek out more consumer health information resources in Spanish
- Promote NC Health Info to people of North Carolina
Other Responsibilities: Grants
Citation Managers

*Research Hub*

Citation Management

[Logos of RefWorks, ENDNOTE, Mendeley, and Zotero]
The UNC Libraries Research Hub provides spaces, technology, and expertise to assist with all phases of research. The Hubs form an interdisciplinary network, complete with partners across campus.

**Idea Development**
- Find background literature
- Utilize research tools effectively
- Locate data sources
- Identify collaborators

**Funding**
- Learn grant seeking tools
- Identify specific grant opportunities
- Find alternative funding sources

**Proposal**
- Prepare data management plan
- Describe data
- Navigate repository options
- Track compliance with NIH Public Access Policy

**Conducting**
- Manage citations
- Review IRB and IACUC protocols
- Conduct systematic reviews

**Disseminating**
- Select journals
- Identify open access journals in field
- Manage copyright
- Design effective posters
- Cite grants
- Track research impact
- Deposit work in digital repository
Medical Library Association
http://www.mlanet.org/
Please feel free to email me
I will be happy to talk to you
Brenda Linares
blinares@email.unc.edu
919-962-0801
Outreach at the University of Arizona

Yamila El-Khayat
WHY?

• Land Grant Institution
Festivals/ Fairs

Tucson Festival of Books

Flagstaff STEM Fair

Phoenix Disability Fair

Miami AZ STEM Fest
K-12 Activities

High school students learning about health information
U.S. Mexico Border/ Spanish Speakers

National Promotoras and Community Health Workers Conference
Promotores Binational Conference
Rural Communities

Ft. Defiance Indian Hospital

Canyon de Chelly
Chinle

NCAI 69th Annual Convention and Marketplace

Seattle

Az Rural Health Conference
Outreach Data

- 2011-Present
  - 185 events
  - 12120 people reached
Future Directions
Thank you

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Thank you

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