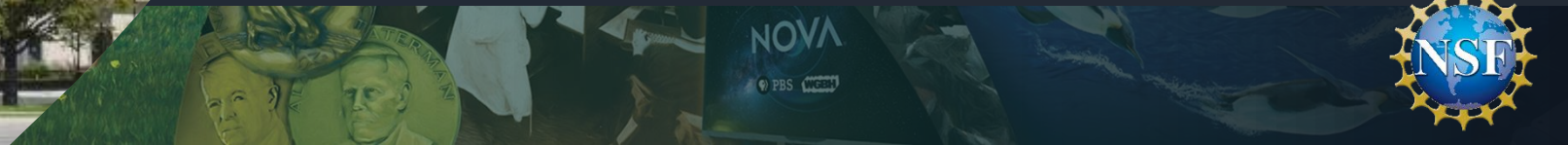
The U.S. National Science Foundation at 70: History and Library Resources

National Science Foundation Alexandria, Virginia



National Science Foundation
Presenter Introductions

- *Emily Gibson*
- *Office of Legislative and Public Affairs*
- *4 years*
- *Science Policy Analyst/Historian of Science*
- *Email: egibson@nsf.gov*

- *Sonja Gardner-Clarke*
- *Office of Information and Resource Management*
- *7 years*
- *Program Manager – NSF Library*
- *Email: sgardner@nsf.gov*

NSF: An Overview

- Independent federal agency founded in 1950
- Mission: “to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense…”
- NSF supported research:
  - Is a primary driver of the U.S. economy
  - Enhances the nation’s security
  - Advances knowledge to sustain global leadership

https://www.nsf.gov/news/mmg/mmg_disp.jsp?med_id=82120

Importance of History of Agency Operations

- External agency communications
- Corporate memory
- Internal/external policymaking

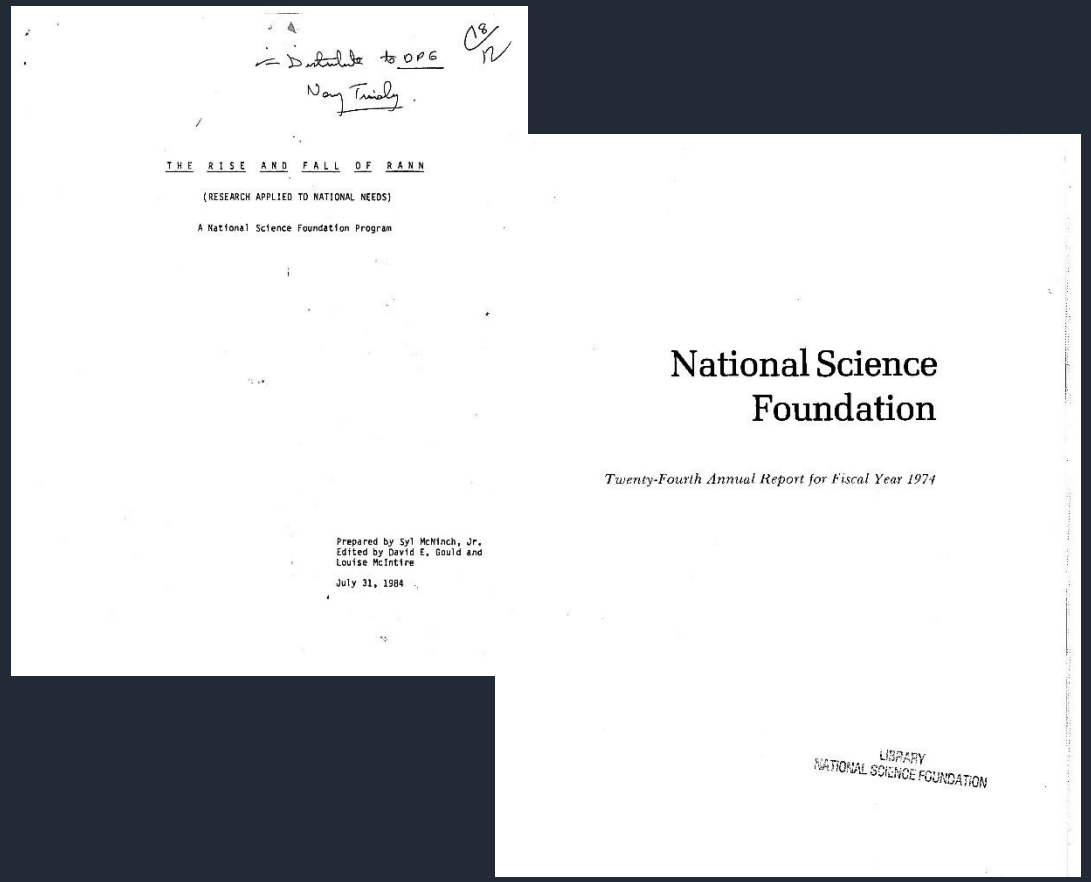
Telling the NSF Story

- New NSF history book
- Writing NSF history requires a range of different sources:
  - Primary
  - Secondary
  - Oral histories
  - Archival
- NARA, LOC, NSF Library

How Documents Help Tell the Story

- 1973 Oil Crisis

Annual and Program Reports Connect the Dots



THE RISE AND FALL OF RANN

(RESEARCH APPLIED TO NATIONAL NEEDS)

A National Science Foundation Program

Prepared by Syl McNinch, Jr.
Edited by David E. Gould and
Louise McIntire

July 31, 1984

National Science Foundation

Twenty-Fourth Annual Report for Fiscal Year 1974

Timonium elementary School near Baltimore became the first school in the U.S. to be heated by solar energy in 1974 as part of NSF's solar energy program of RANN.

National Science Foundation, Library

Circulating Collection

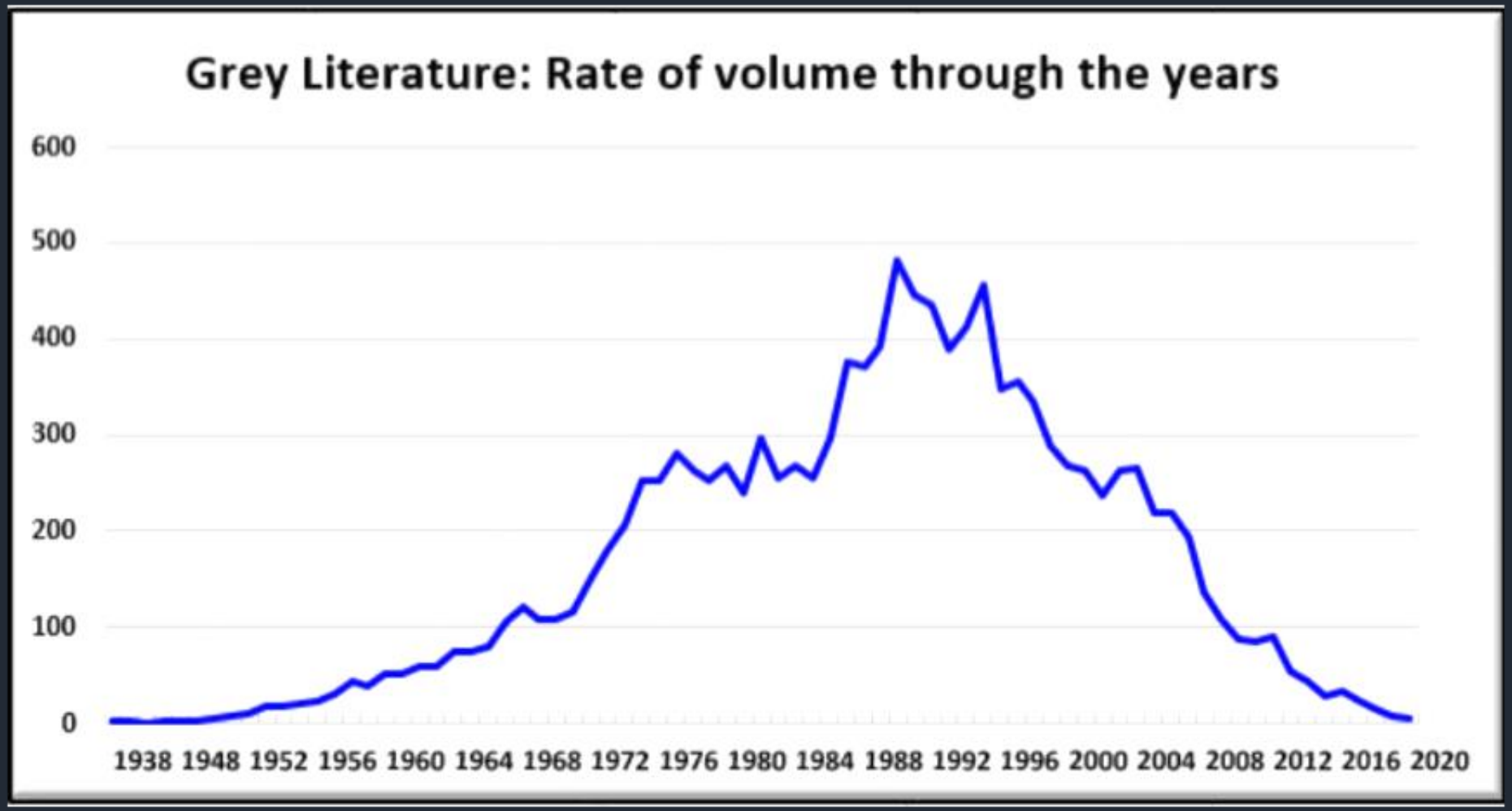
- Grey Literature
- Commercial Collection
- VHS Tapes
- Antarctic Bibliography Microfiche Collection

Library Services

- Training - Using Bibliometrics
  - Citation Databases
- Electronic Journals
- Fulfilling Inter-Library loan requests
- Access to print Periodicals
- Meeting Space

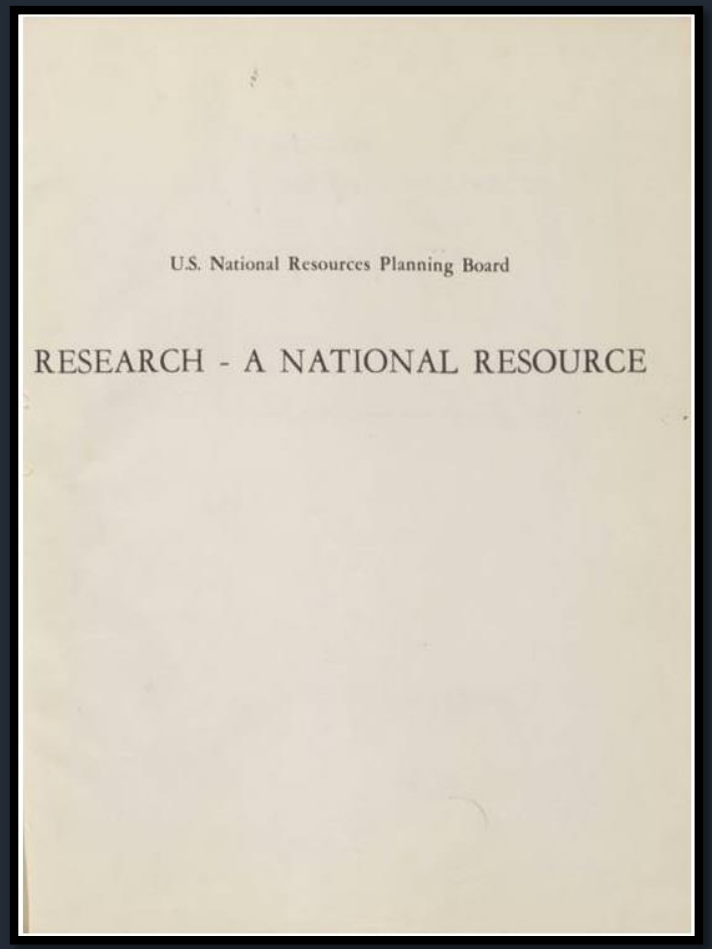
NSF Library: Circulating Grey Literature

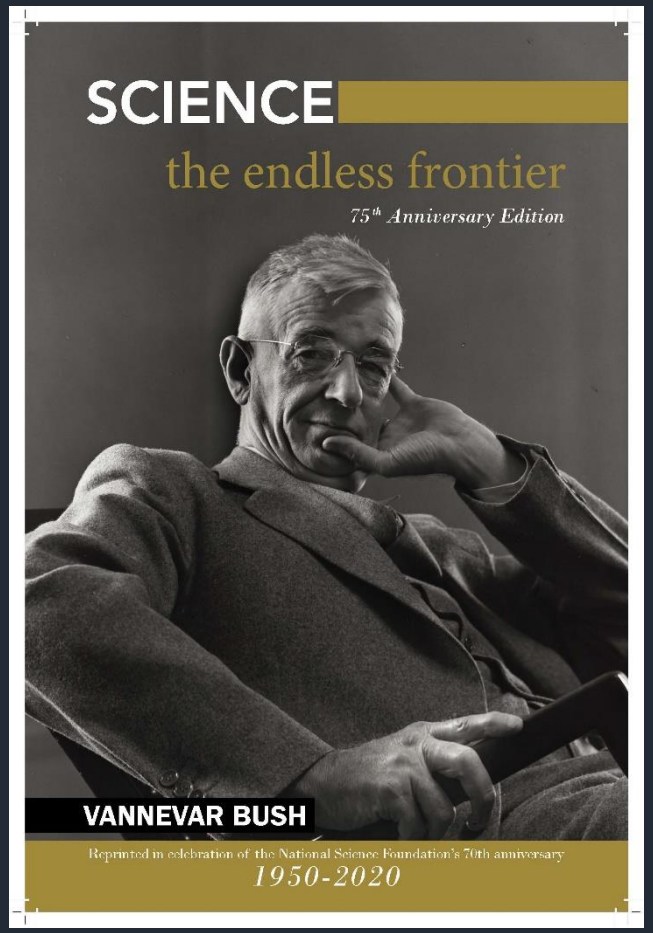
- **Print: 12,765 documents**
- **Digital: 8,781 in PDF format**



NSF Library: Circulating Grey Literature

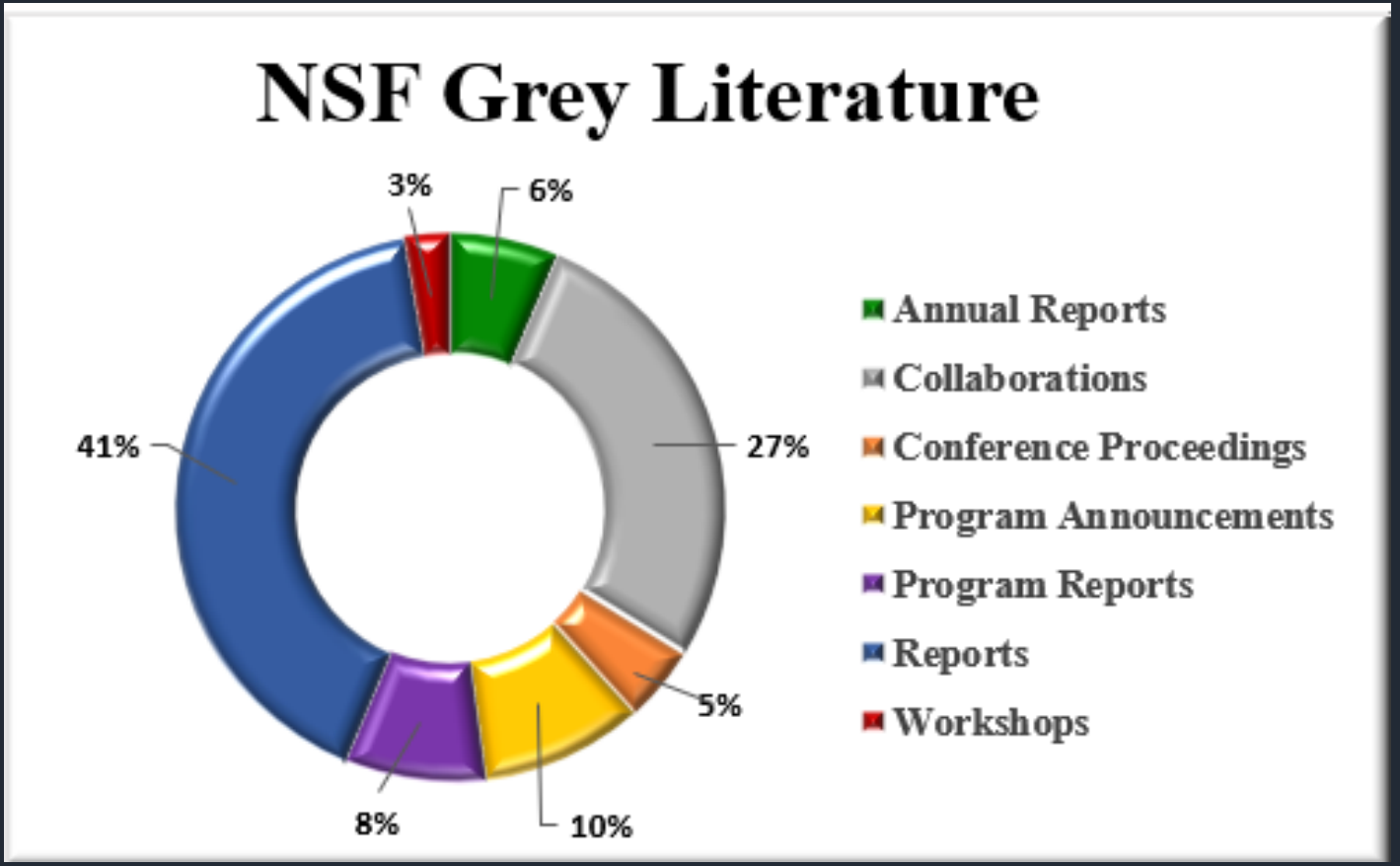
Oldest NSF Document:
"***Research - A National Resource***"
Published in 1938





Most Current NSF Document:
"***Science: the endless frontier, 75th anniversary***"
Published in 2020

NSF Library: Circulating Grey Literature



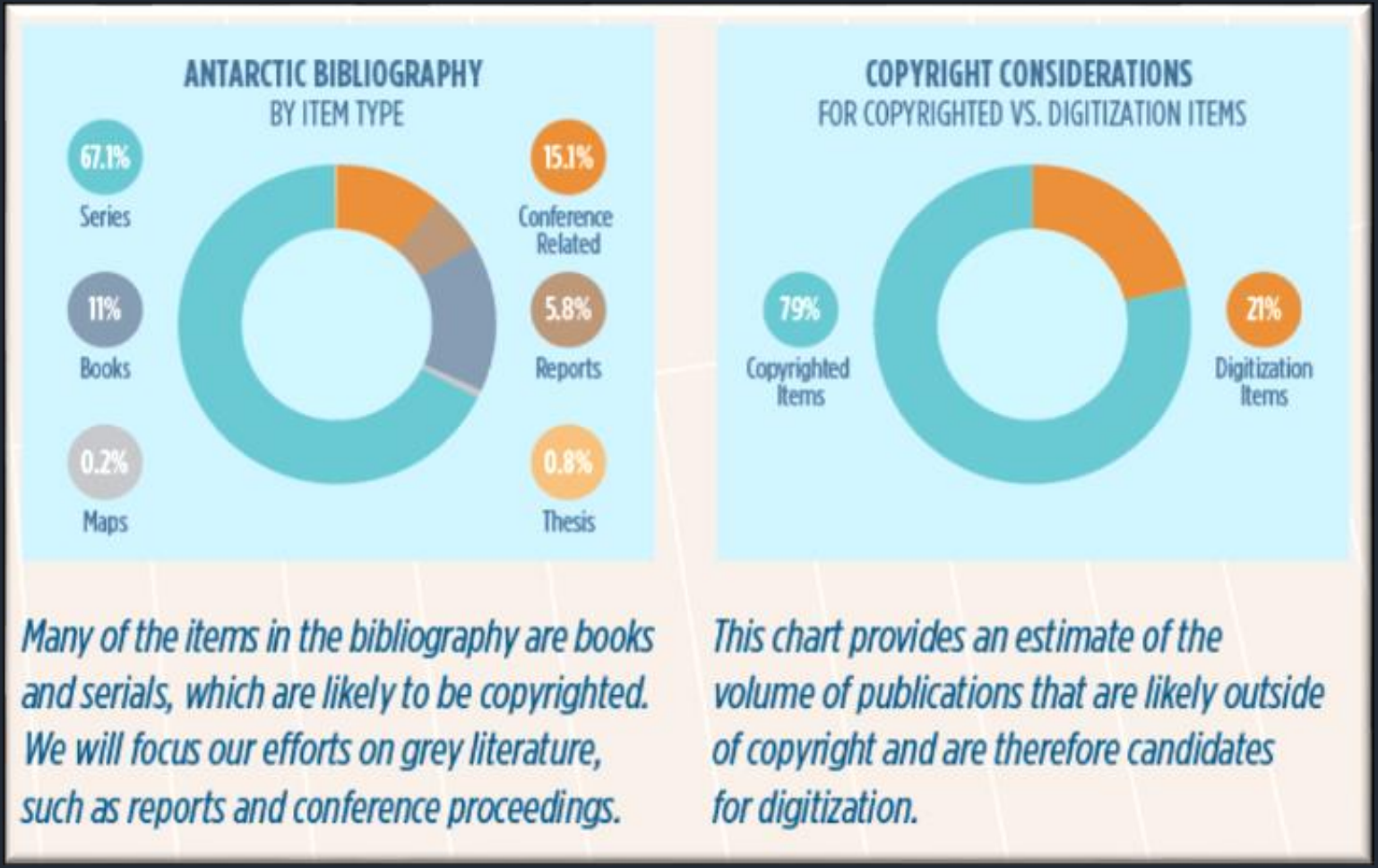
Antarctic Bibliography Microfiche Collection

"Preserving the Legacy of Polar Research – A Collaborative Effort: Digitization of Selected Documents in The Antarctic Bibliography Microfiche Collection".

Poster presented at the 27th Polar Libraries Colloquy, Rovaniemi, Finland, June 2018

The National Science Foundation (NSF) has a long history of leadership in preserving polar research. Funded by the Foundation, this Collection was microfilmed by the Library of Congress in the 1990s. A primary goal was to preserve as much of the international polar research known at that time, as possible.

Antarctic Bibliography Microfiche Collection



The Antarctic Bibliography covers these major polar research categories:

- Biological Sciences
- Cartography
- Expeditions
- Geological Sciences
- Ice & Snow
- Logistics, Equipment & Supplies
- Medical Sciences
- Meteorology
- Oceanography
- Atmospheric Physics
- Terrestrial Physics
- Political Geography

Antarctic Bibliography Microfiche Collection

Six sets of the microfiche exist throughout the United States:

- Alaska Resources Library & Information Services (ARLIS) – Univ. of Alaska, Anchorage
- Cold Regions Research and Engineering Laboratory (CRREL)
- United States Geological Survey (USGS)
- US National Science Foundation (NSF) – 2 sets
- {One set at an unknown location in California }

The NSF Library's goal is to provide the public with free and open access to selected digitized grey literature from the Antarctic Bibliography

NSF Library Services

The Library offers training to NSF Staff on how to use databases and application interfaces (APIs) from Scopus and the Web of Science to perform bibliometric analysis of publication and citation data to:

- Identify experts in various scientific fields
- Resolve conflicts of interests in our reviewers / panelists
- Research performance evaluation of our awards
- Measure the outcomes of our funding

Using Bibliometrics: Evaluating Research Performance

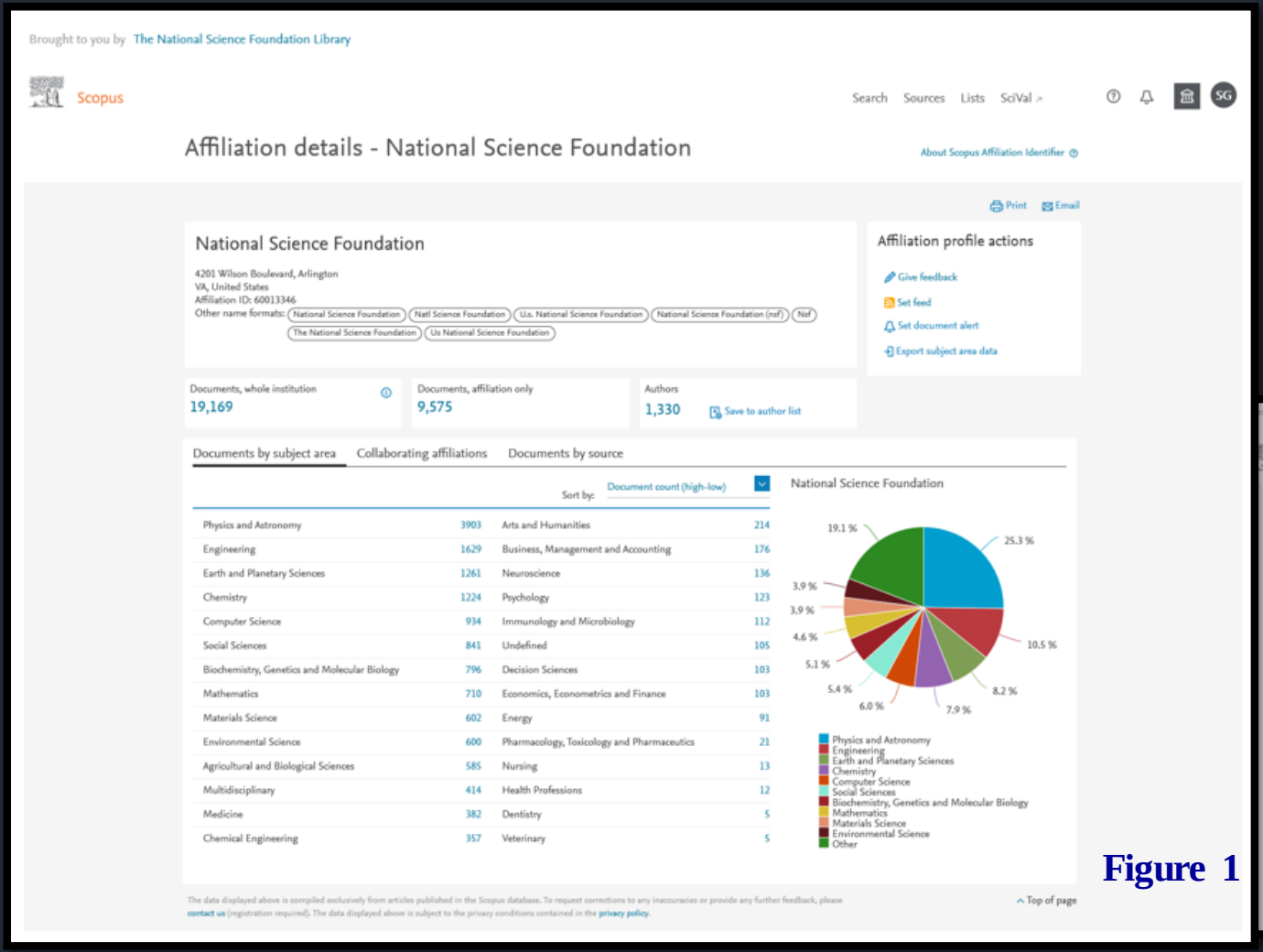


Figure 1

- A basic Affiliation search using the NSF suggests the subject areas of Physics and Astronomy are highly cited in publications (Figure 1)
- Also, another basic search on the NSF returned 505 patents (Figure 2)

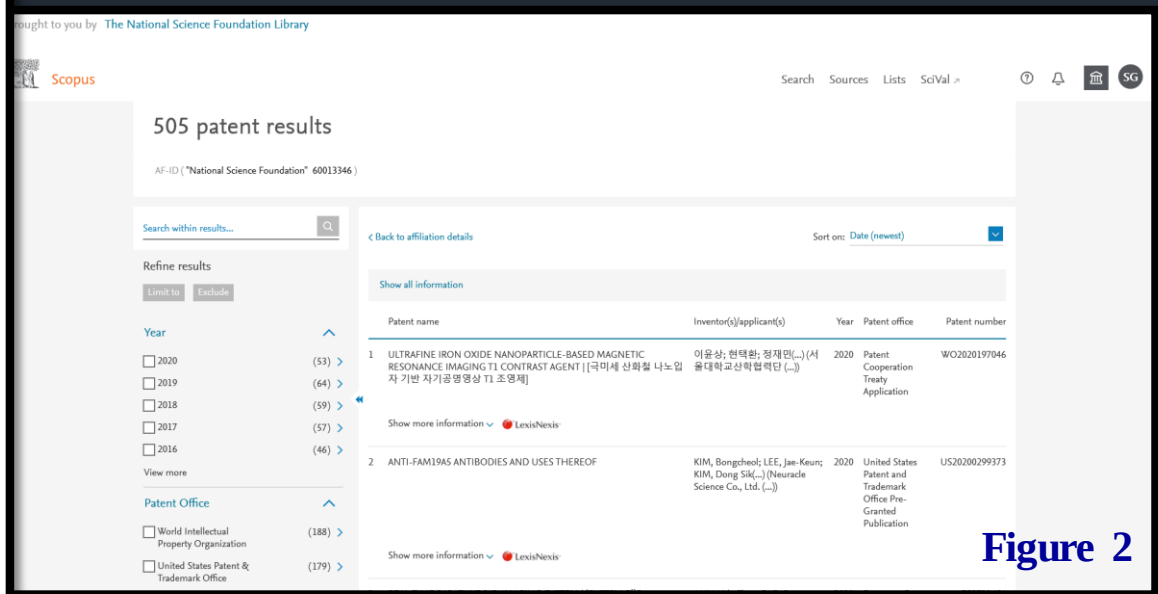
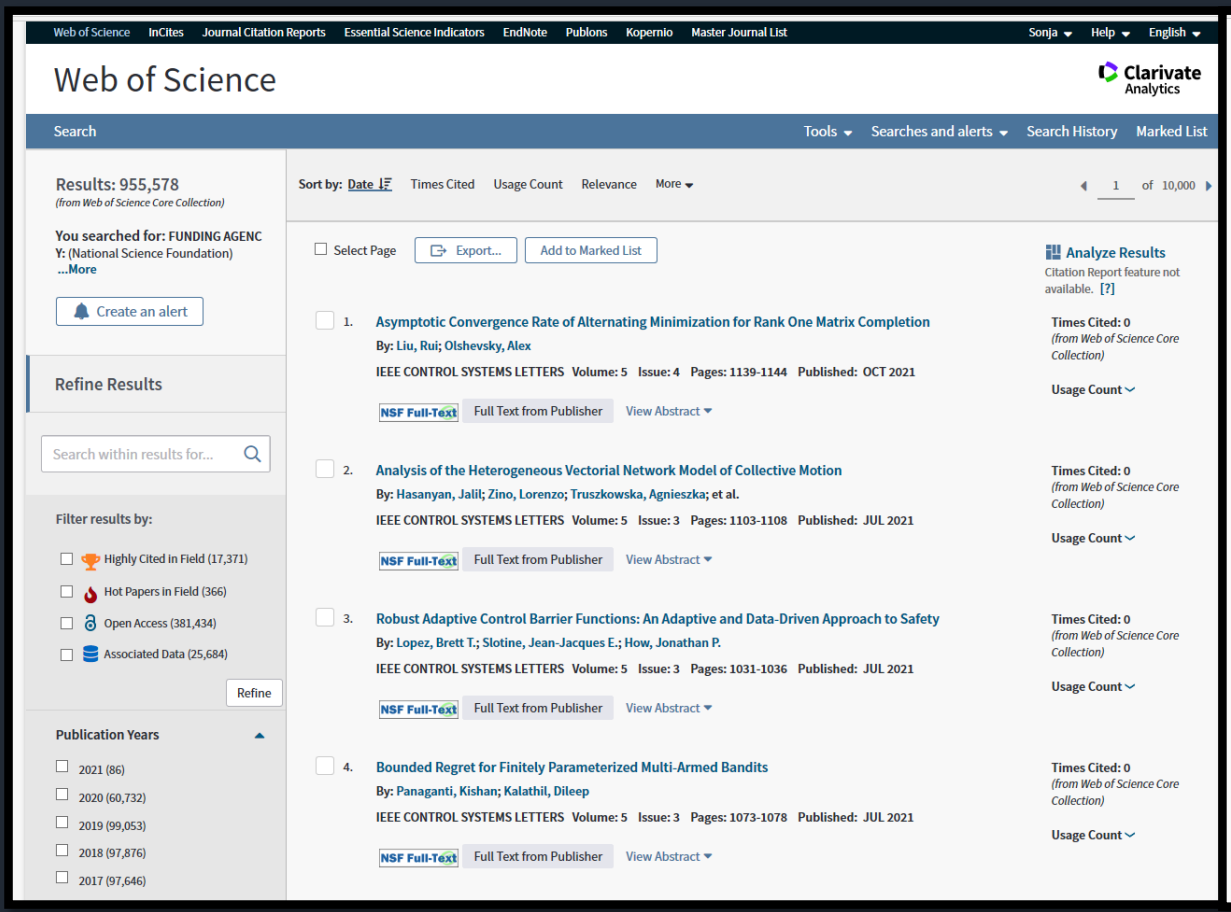
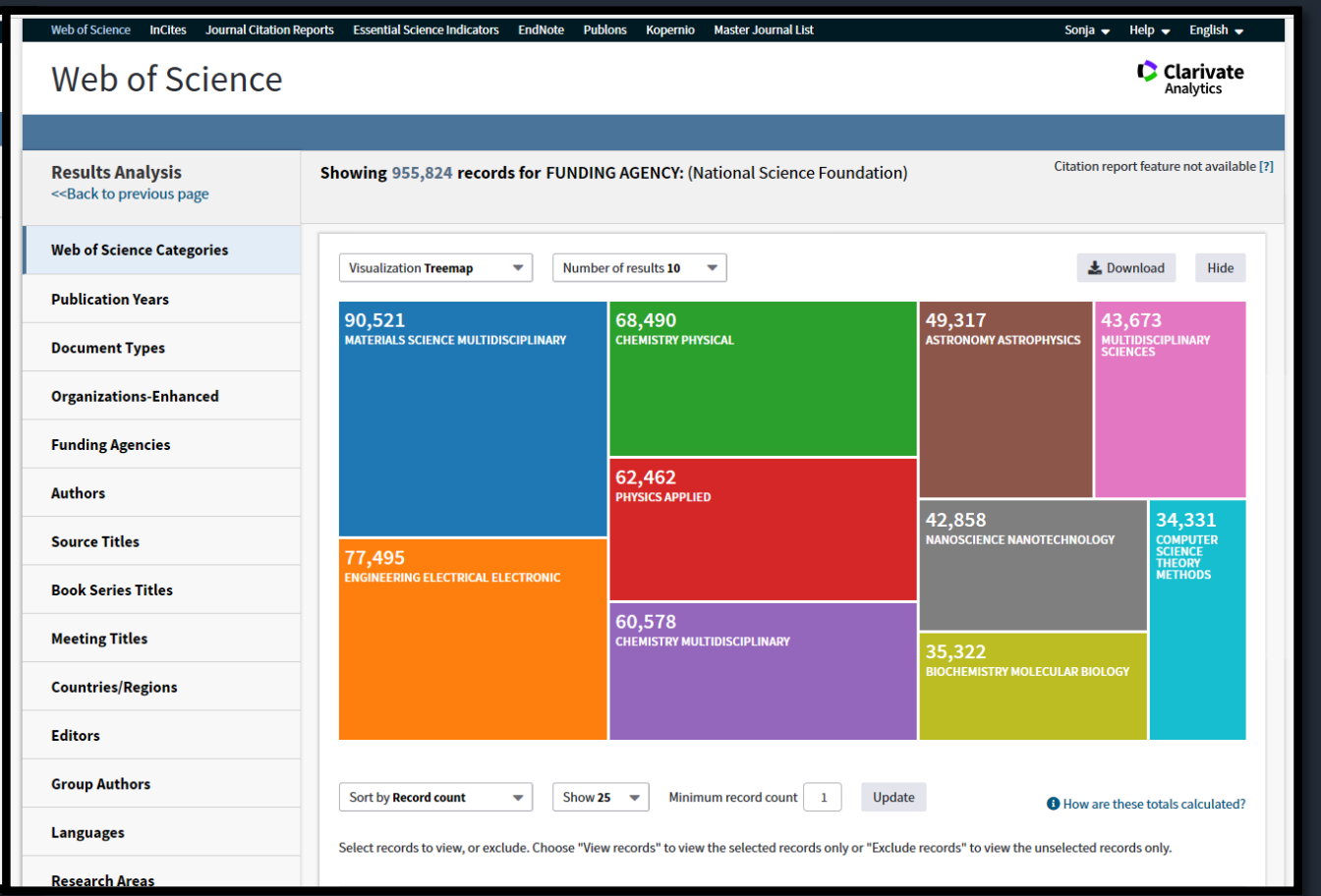


Figure 2

Using Bibliometrics: Evaluating Research Performance

Performing a basic search, using the NSF as an example, on Funding agencies returned the following data:





Using Bibliometrics: Evaluating Research Performance

Organization Report

Organization Report

Save as... | Download PDF | Share

Visualize research, collaboration, and most cited documents across an Organization.

Organization Name

National Science Foundation (NSF) ×

e.g. University of Toronto

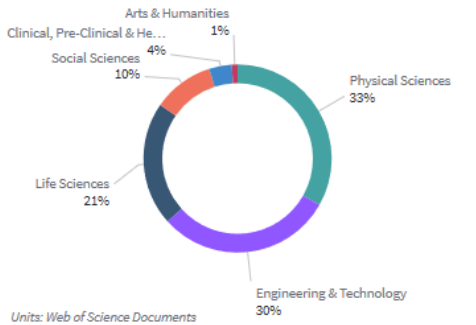
Date range: 2015 – 2019 | Dataset: InCites Dataset | Include ESCI documents

Research Performance | Collaboration | Journal Utilization | Most Cited Documents

Overview

Documents Published by GIPP Research Areas

In which research area are authors publishing most?

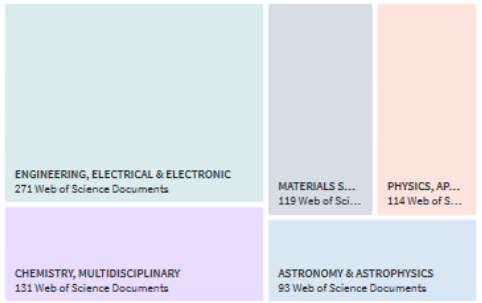


Units: Web of Science Documents

View Data

Documents Published by WoS Categories

In which categories are authors publishing most?



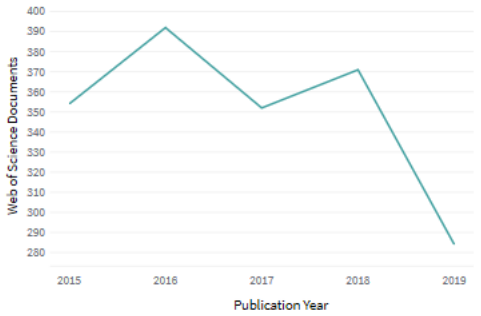
Box size indicates Web of Science Documents

View Data

Productivity

Documents Published per Year

How many documents have authors published?



View Data

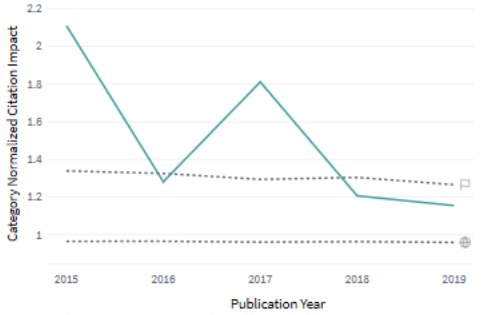
Times Cited Per Year

How many times have authors been cited?

View Data

Category Normalized Citation Impact per Year

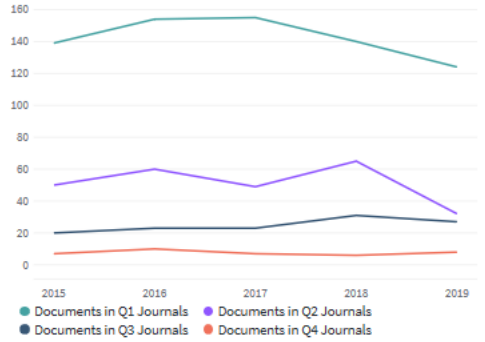
What is the citation impact?



View Data

Documents Published per JIF Quartile per Year

How many documents have authors published in highly cited journals?



View Data

Other Library services provided:

- Electronic Journal Subscriptions – 10,000+ (titles)
- Commercial Books – 16,906 (print)
- eBooks – 1,900+
- VHS/CDs – 257 (NSF funded programs)
- Print Periodicals / Newspapers
- Inter-Library Loan (ILL) requests
- Meeting Space – in the library
- Vendor led trainings

Questions