

# Trends in Digital Newspaper Delivery: Leveraging existing resources, collaborations, and interoperability in the libraries community

Dec. 12, 2016

## **Sheila Rabun**

IIIF Community &  
Communications Officer,  
International Image  
Interoperability Framework (IIIF)

## **Karen Estlund**

Associate Dean for Technology  
and Digital Strategies,  
Penn State University Libraries

## **Mark Phillips**

Associate Dean for Digital  
Libraries,  
University of North Texas  
Libraries

# Themes in Digital Newspaper Delivery

---

- Leveraging Existing Platforms & Resources
- Collaborations and Partnerships
- Interoperability - IIIF

# International Image Interoperability Framework (IIIF)

---



IIIF is:

- A **Community**
- That develops **Shared APIs** for web-based image delivery
- Implements them in **Software**
- And exposes interoperable **Content** (such as digital newspaper images)

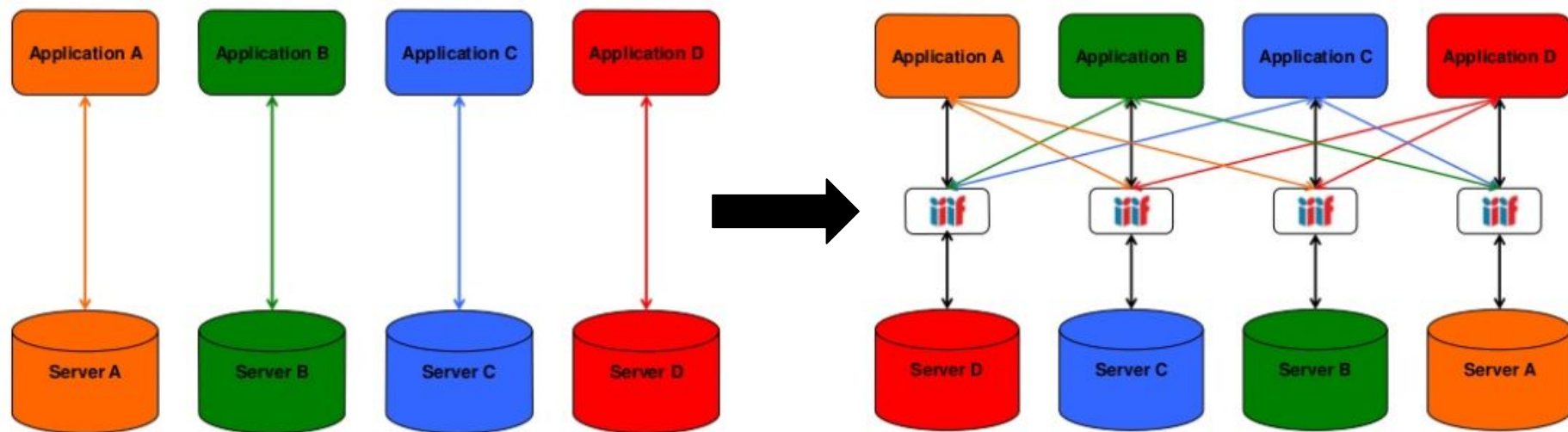
# Global Participation

---



# IIIF APIs

---



# Interchangeable technology

---

## Servers

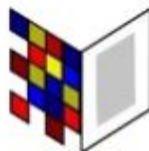
RAIS



LORIS



djatoka



digilib



CONTENTdm

LuraTech



## Clients



OpenSeadragon

Mirador



IIPMooViewer



IA BookReader



OpenLayers

Leaflet-IIIF

Universal Viewer



KLOKAN TECHNOLOGIES

@jpstrop

Sharing Images of Global Cultural Heritage, NGA, 5 May 2015

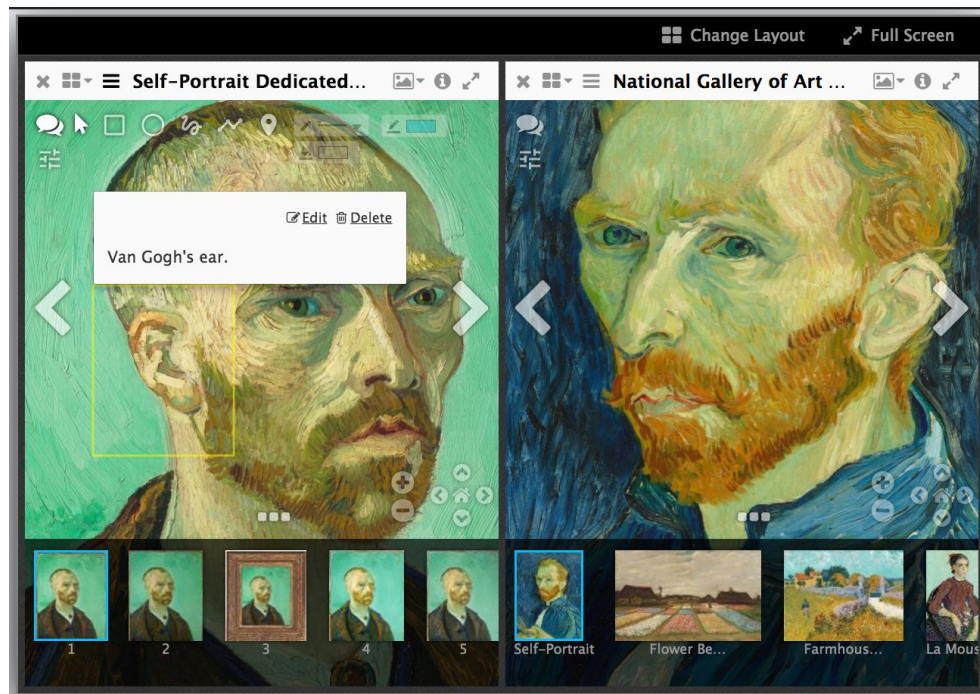


# IIIF Functionality

---

IIIF is:

- Comparing objects from different repositories
- Deep zoom and pan
- Cite, embed, share
- Ability to annotate and draw
- Search within annotations
- <https://youtu.be/uih5JuQnYuo>



# North Carolina State University (NCSU) Libraries:

The screenshot displays a digital library interface. At the top, navigation controls include a back arrow, the text "Image 1 of 8", a "Go" button, and forward arrows. On the left, a "CONTENTS" sidebar shows a grid of five thumbnail images, with the first one selected and numbered "1". On the right, a vertical "MORE INFORMATION" button is visible. The main content area features a newspaper page from "THE NUBIAN MESSAGE", an "Afrikan-American Newspaper" established in 1992. The page is dated "December 9, 1993" and is "Volume 2, Edition 7". A circular stamp in the top right corner of the page reads "JUN 20 1995 THE LIBRARIES". The main headline is "Film probes color question". Below the headline, the byline reads "By Na'im Ambakisyee, Entertainment Editor". The article text includes the words "Light Bright," "Cream Colored," "Red Bone," and "Skillet Blonde." and discusses the complexities of African-American identity. A photo of a woman speaking at a podium is partially visible on the right side of the article. At the bottom of the interface, a search bar shows "20 results found for 'people' Clear" and "page 1 of 8".




# OCR Text = JSON-LD Annotation Lists

```
— — — {
  "@context": "http://iiif.io/api/presentation/2/context.json",
  "@id": "http://dams.llgc.org.uk/iiif/3320863/annotation/list/ART7.json",
  "@type": "sc:AnnotationList",
  "resources": [
    {
      "@type": "oa:Annotation",
      "motivation": "sc:painting",
      "resource": {
        "@type": "cnt:ContentAsText",
        "format": "text/plain",
        "chars": "SHIP NEWS."
      },
      "on": "http://dams.llgc.org.uk/iiif/3320860/canvas/3320863#xywh=4809,2431,401,46"
    },
    {
      "@type": "oa:Annotation",
      "motivation": "sc:painting",
      "resource": {
        "@type": "cnt:ContentAsText",
        "format": "text/plain",
        "chars": "SMTANSEA.—Arrived, the Phc»n I"
      },
      "on": "http://dams.llgc.org.uk/iiif/3320860/canvas/3320863#xywh=4816,2480,728,51"
    }
  ]
}
```

<http://dams.llgc.org.uk/iiif/3320863/annotation/list/ART7.json>

# National Library of Wales

**ILGC NILW LLYFRGELL GENEOLAETHOL CYMRU THE NATIONAL LIBRARY OF WALES** Cymraeg 

**Welsh Newspapers Online**  
Discover 15 million articles and 1.1 million pages

**The Cambrian News and Merionethshire Standard**

4th April 1873 (TOC) < Previous Issue Page 2 Next Issue > Mae hawffraint yr adrodd hwn yn eiddo | Cambrian News Ltd.

er Trinity. *Moon's*  
3m, a.m.,

**BER.**

Aberystwyth  
Hanley, Newport,  
and pigs  
ry, also hor, but, ch,

Uttoxeter, ch; Mont-  
Caereinion, ch and  
Leominster

m. Flint, pigs  
fter Trinity.  
Wenlock, Welshpool:

7, Hanley; Maccles-  
field; Stone  
Dinas Mawddwy,  
v, bac and ch  
bac.  
Castle  
3h 40m, p.m. Con-

fter Trinity.  
h, Aberganolwyn:  
yme, pleasure; Whit-

here, Ruthin, Hanley,  
field, catl and pigs  
ingleton  
; Llanberis, Cerrig-y-  
ch, Llansilin, Mach-

**DECEMBER.**

1 M Ludlow, Cefn, Llansaintffraid,  
Gresford, Newcastle-under-Ly  
ystwyth, Wellington

2 Tu Llangollen, Tregaron, Shrewsbu-  
Ysppyty; Macclesfield, catl  
Stone

3 W Oswestry, also hor, butter, ch,

4 Th *Full Moon, 4h 20m, a.m.*  
Montgomery; Llanfair-Ca-  
and pigs; Mantwich, Staffor

5 F Llanfair-Caereinion, Carnarvon

6 S Abergale, Carnarvon; Flint, pig

7 S Second Sunday in Advent.  
8 M Bromyard, Wem, Malpas,  
Cerrig-y-Druidion, Welshpo

9 Tu Denbigh, Ellesmere, Hanley, Newport,  
Macclesfield, catl and pigs; New-  
but, ch, and bac

10 W Oswestry, Denbigh, Hereford,  
bury, bac and ch; Newport

11 Th *Moon's Last Quarter, 9h 54m,*  
Tarporely, Llanrwst, Hari  
Crosses (Pwllheli)

12 F Bishop's Castle, Leominster

13 S Tremadoc

14 S Third Sunday in Advent.  
Much Wenlock, Dorrington  
church, Wellington

15 M Kington, Shrewsbury, Ruthin, Hanley,  
Dolgelley; Macclesfield, catl and P

16 Tu Stone

17 W Oswestry, Crewe

**22 articles on this Page**

**AUGUST.** >

**SEPTEMBER.** >

**OCTOBER.** >

**NOVEMBER.** >

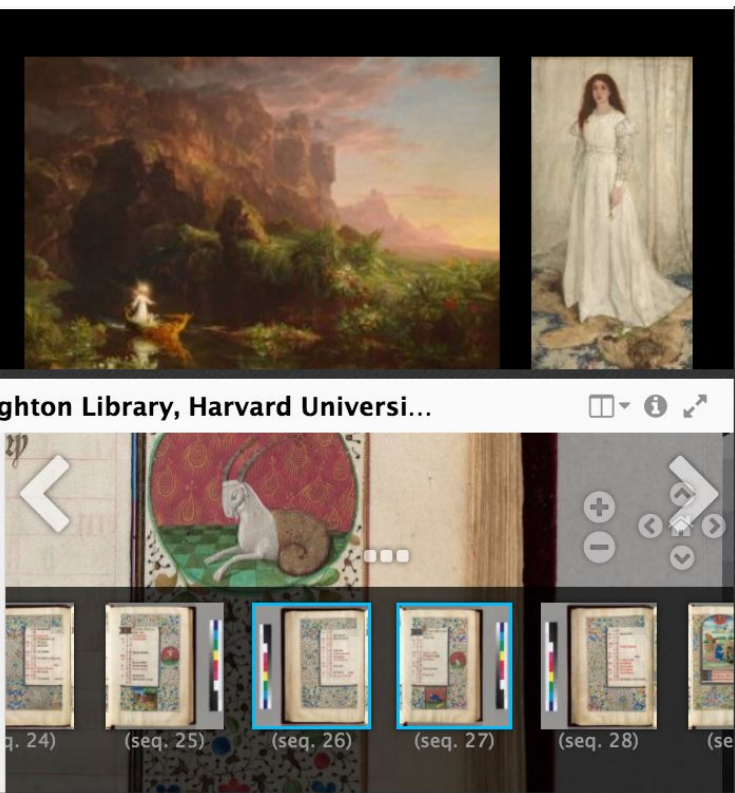
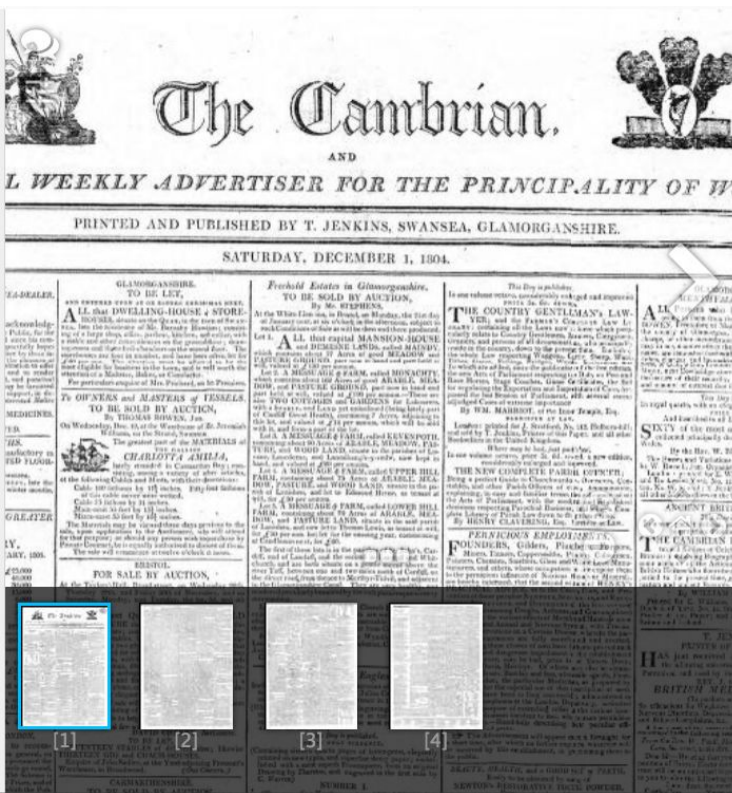
**DECEMBER.** >

Detailed Lists.  Cite  Share

Results and  
Guides

**DECEMBER.** 11M Ludlow, Cefn, Llansaintffraid, Gresford, Newcastle-under-Ly ystwyth, Wellington 2 Tu Llangollen, Tregaron, Shrewsbu Ysppyty, Macclesfield, catl Stone Ysppyty; Macclesfield, catl Stone 3 W Oswestry, also hor, butter, ch, 4Th Full Moon, 4h 20m, a.m. Montgomery; Llanfair-Ca and pigs; Mantwich, Staffor 5 F Llanfair-Caereinion, Carnarvon 6S Abergale, Carnarvon; Flint, p 7S Second Sunday in Advent. 8M Bromyard, Wem, Malpas, Cerrig-y-Druidion, Welshp 9Tu Denbigh, Ellesmere, Hanley, Macclesfield, catl and pigs; Nev but, ch, and bac 10W Oswestry, Denbigh, Heref 11Th Moon's Last Quarter, 9h 54m, Tarporely, Llanrwst, Hari Crosses (Pwllheli) 12F Bishop's Castle, Leominster 13S Tremadoc 14S Third Sunday in Advent. 15M Much Wenlock, Dorrington church, Wellington 16Tu Kington, Shrewsbury, Ruthin, Hanley, Dolgelley; Macclesfield, catl and P Stone 17W Oswestry, Crewe

# Collaboration and Existing Resources

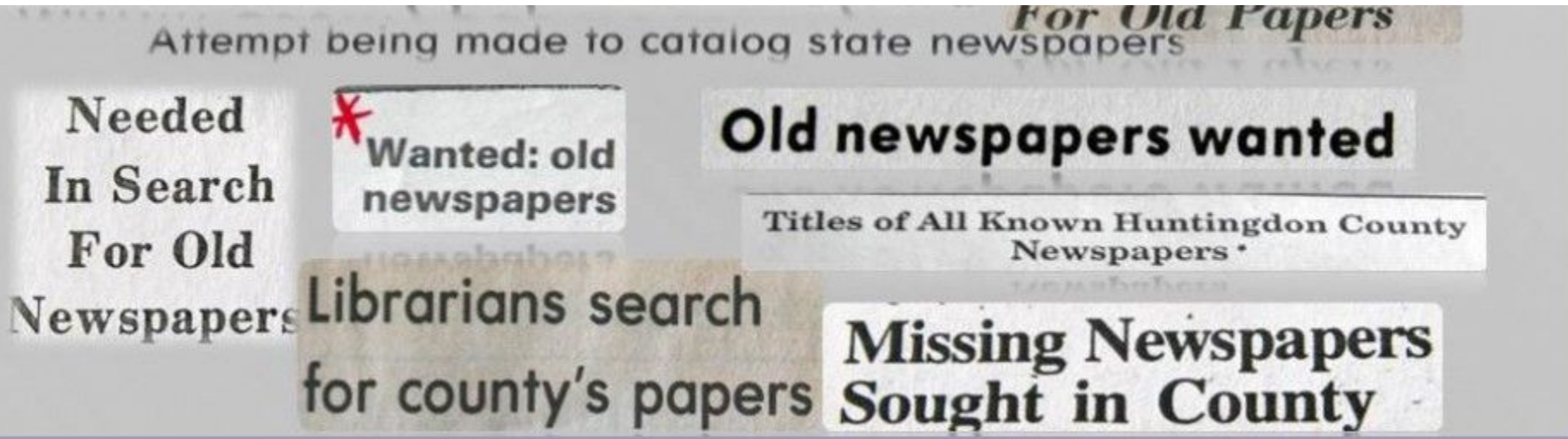


Newspaper from National Library of Wales (L), paintings from National Gallery of Art (top right), manuscript from Harvard University (bottom right)

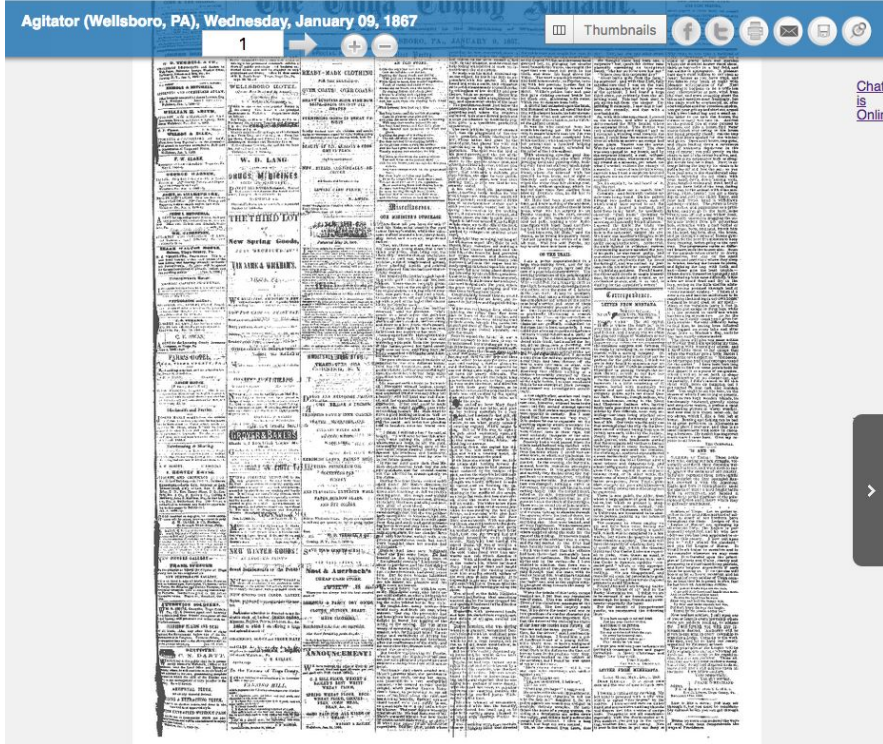
# Collaborating for Access, System Improvement, and Interoperability

# Newspaper Collaborations

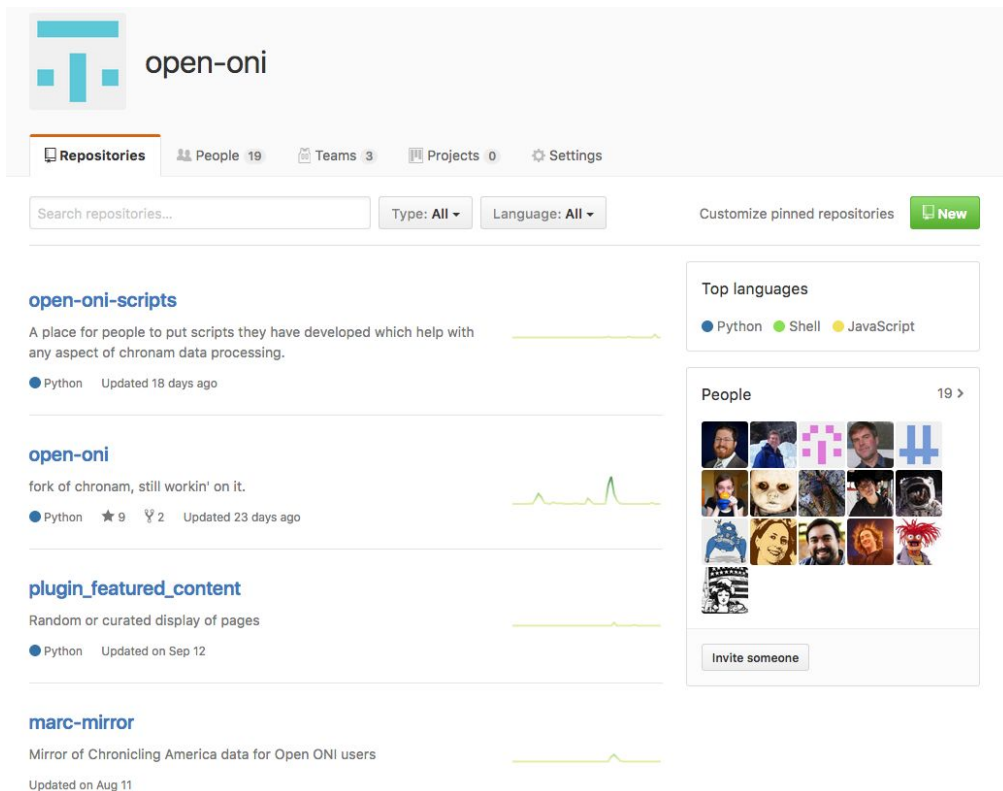
---  
7,921 newspapers published in Pennsylvania since the American Weekly Mercury began in 1719!



# Transitioning from Proprietary System and Formats



# Open Online Newspaper Initiative (Open ONI)



The screenshot shows the GitHub organization page for 'open-oni'. At the top left is the organization's logo, a stylized bar chart with three bars of increasing height, followed by the text 'open-oni'. Below the logo is a navigation bar with 'Repositories' (selected), 'People 19', 'Teams 3', 'Projects 0', and 'Settings'. A search bar for repositories is on the left, and filters for 'Type: All' and 'Language: All' are in the center. On the right, there's a 'Customize pinned repositories' button and a green 'New' button. The main content area lists four repositories, each with a title, description, language, and update date. A 'Top languages' sidebar shows Python, Shell, and JavaScript. A 'People' sidebar shows a grid of 19 user avatars and an 'Invite someone' button.

**open-oni**

Repositories | People 19 | Teams 3 | Projects 0 | Settings

Search repositories... | Type: All | Language: All | Customize pinned repositories | **New**

**open-oni-scripts**  
A place for people to put scripts they have developed which help with any aspect of chronam data processing.  
Python Updated 18 days ago

**open-oni**  
fork of chronam, still workin' on it.  
Python ★ 9 🍴 2 Updated 23 days ago

**plugin\_featured\_content**  
Random or curated display of pages  
Python Updated on Sep 12

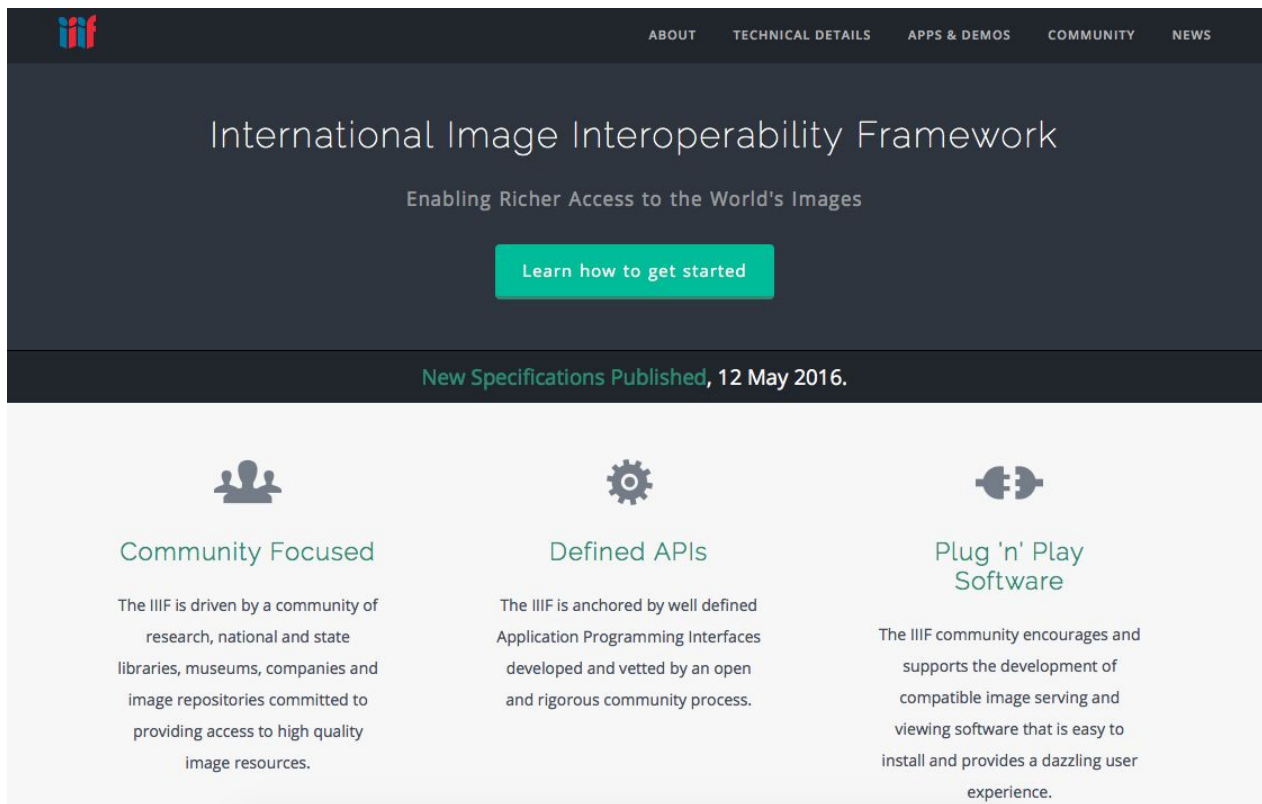
**marc-mirror**  
Mirror of Chronicling America data for Open ONI users  
Updated on Aug 11

**Top languages**  
Python Shell JavaScript


**People** 19 >

Invite someone

# Role of IIF for Newspapers



The screenshot shows the homepage of the International Image Interoperability Framework (IIF). At the top left is the IIF logo, and at the top right is a navigation menu with links for ABOUT, TECHNICAL DETAILS, APPS & DEMOS, COMMUNITY, and NEWS. The main heading is "International Image Interoperability Framework" with the tagline "Enabling Richer Access to the World's Images". A prominent teal button says "Learn how to get started". Below this is a teal banner announcing "New Specifications Published, 12 May 2016." The main content area features three columns, each with an icon and a heading: "Community Focused" (people icon), "Defined APIs" (gear icon), and "Plug 'n' Play Software" (plug icon). Each column contains a short paragraph describing that aspect of the framework.


 ABOUT TECHNICAL DETAILS APPS & DEMOS COMMUNITY NEWS

## International Image Interoperability Framework


Enabling Richer Access to the World's Images

[Learn how to get started](#)


[New Specifications Published, 12 May 2016.](#)

  
**Community Focused**

The IIF is driven by a community of research, national and state libraries, museums, companies and image repositories committed to providing access to high quality image resources.

  
**Defined APIs**

The IIF is anchored by well defined Application Programming Interfaces developed and vetted by an open and rigorous community process.

  
**Plug 'n' Play Software**

The IIF community encourages and supports the development of compatible image serving and viewing software that is easy to install and provides a dazzling user experience.



# IIIF Newspaper Interest Group Goals

---

- To determine development + Usage of IIIF for digital Newspapers
- To demonstrate best practice in exploitation of IIIF for Newspapers
- To promote usage of IIIF for Newspapers
- To consider related formats, especially serials
- To explore and exploit possibilities for search, discovery, and annotation of Newspapers

**Chairs:** Karen Estlund, Penn State & Glen Robson, National Library of Wales

# IIIF Mapping

— — —

Newspapers	IIIF
Title	Collection
Issue	Manifest
Edition	Manifest
Article	Range
Page	Canvas
Image	Image
Alto	Annotations

# Implementing IIF and Newspapers Practices

— — —

## IIIF Image API:

- Compliance Level 2

## IIIF Presentation API Manifest:

- Issue Date as navDate
- Articles as Ranges
- Link to OCR text in SeeAlso
- Text as Annotation Lists to Annotations

## Open Annotations:

- OCR text
- Transcription text

## IIIF Search API (under discussion):

- Multiple Versions of annotations:
  - Word
  - Line
  - Paragraph

# IIIF Guidance in Open ONI / How to use APIs

## IIIF Views

In addition to the use of JSON in OpenSearch results, there are also [IIIF](#) Presentation API and Image API JSON views available for various resources. These IIIF views are typically linked from their HTML representation using the <link> element. For example:

- <http://oni.mith.us/lccn/sn83045396.json>  
title information for LCCN sn86069873 as an IIIF Collection
- <http://oni.mith.us/lccn/sn83045396/1911-09-17/ed-1.json>  
first available edition from January 5, 1900 as an IIIF Manifest
- <http://oni.mith.us/lccn/sn83045396/1911-09-17/ed-1/seq-1.json>  
first available page from first edition, January 5, 1900 as an IIIF Canvas
- <http://oni.mith.us/newspapers.json>  
a list of all newspaper titles for which there is digital content represented as a IIIF Collection
- <http://oni.mith.us/batches.json>  
a list of all batches of content that have been loaded
- [http://oni.mith.us/batches/batch\\_uuml\\_thys\\_ver01.json](http://oni.mith.us/batches/batch_uuml_thys_ver01.json)  
detailed information about a specific batch as a IIIF Collection

Example: [http://\[url\]/about/api/](http://[url]/about/api/)

# Open ONI newspaper in HIF Viewer (Mirador)

Bookmark
Change Layout
Full Screen

19
▼
The Salt Lake tribune. [1911-09-17]

**WEDDINGS AND ENGAGEMENTS**

A most interesting marriage of the week will be that of Miss Jessie Shreve, daughter of Mr. and Mrs. George A. Shreve, and Christian (Jennie) of the same name. The wedding will take place at 11 o'clock on Wednesday at the home of the bride's parents. Miss Shreve is a graduate of the University of Utah. Her bridesmaids will be Misses Cecelia Goodrich, who will be maid of honor, and Helen C. Goodrich, who will be flower girl. The ceremony will be performed by Mrs. J. H. Goodrich. The reception will be held at the home of the bride's parents. The wedding will be broadcasted on the radio.

**Mrs. E. Warren**  
Announces Her Fall Millinery Opening  
45 E. First South St.  
Monday, Sept. 18, 19 and 20.  
New styles, colors, patterns and prices reasonable.  
PHONES: RE 5412, 5413

**A Confidential Talk on Corsets**

Ladies, the most important garment worn is the corset. Buy and consider what it means. Think of it before, its foundation, its construction and appearance and the beauty of it. It is all three combined can be readily given when you put yourself in the hands of an expert corsetier.

When properly corseted one can always be well groomed. Your dressmaker or tailor cannot give you the graceful and stylish lines unless properly corseted. Your corset is what molds your figure and shows your gown off to best advantage.

The first time in gait is to appear thoroughly confident. You are sure you are absolutely comfortable. By matter how soon the lady says so, it is not necessary to wear a heavy corset, it is not the weight that holds the figure in place, it's the cut, and that can easily be made suitable for the figure.

Corsets which accomplish this change according to the different styles and fashions which make it all the more necessary to understand what needs to be given and what adjustments to make in order to give a perfect and up-to-date figure and all the same time comfort.

Confidence is an individual study. An expert corsetier is one who has given you a long time in study. He has to understand what you need before he can give you the right corset. **THE REPRESENTATIVE IS NOT GAINED BY**

**Mrs. Frances Kimball, the Tallest Young Virgins, Who Will Be Married in Japanese Style Tomorrow Night**

—Photo by Oliver and Mitchell.

Mrs. Frances Kimball, the tallest young virgin in the city, will be married to the late of the bride's parents, Mr. and Mrs. E. Warren, in a Japanese style ceremony at the home of the bride's parents, 45 E. First South St., on Monday night, September 18. The ceremony will be performed by Rev. W. A. French. The bride is Miss Frances Kimball, daughter of Mr. and Mrs. E. Warren. The groom is Mr. E. Warren. The wedding will be broadcasted on the radio.

**PERSONALS**

J. Holter Page will leave today for the Indian outfit, where he will continue his work for the next few days. He will return on Wednesday.

Miss M. P. Jacobson and her two daughters, the Misses Frances and Louise, will move within the next few days to the new apartment, Mrs. M. P. Jacobson will be in charge of the household.

Miss M. P. Jacobson and her two daughters, the Misses Frances and Louise, will move within the next few days to the new apartment, Mrs. M. P. Jacobson will be in charge of the household.

Miss M. P. Jacobson and her two daughters, the Misses Frances and Louise, will move within the next few days to the new apartment, Mrs. M. P. Jacobson will be in charge of the household.

**The Beautiful Ball Room of Hotel Utah**

will be opened Monday evening with a concert given by leading artists, for charity.

**THE BALDWIN PIANO** has been selected and will be used exclusively at this concert. The Baldwin piano received the Grand Prix at the Paris Exposition of 1904, and the Grand Prix at St. Louis Exposition. Legions of music devotees by French Government.

The Baldwin is used by the world's greatest artists. It is given preference in Mrs. Taft's music room at the White House, and in the homes of the most cultured.

We represent the five different factories of the Baldwin Company—the Hamilton, The Ellington, The Mason and the Monarch and the Baldwin pianos and player pianos.

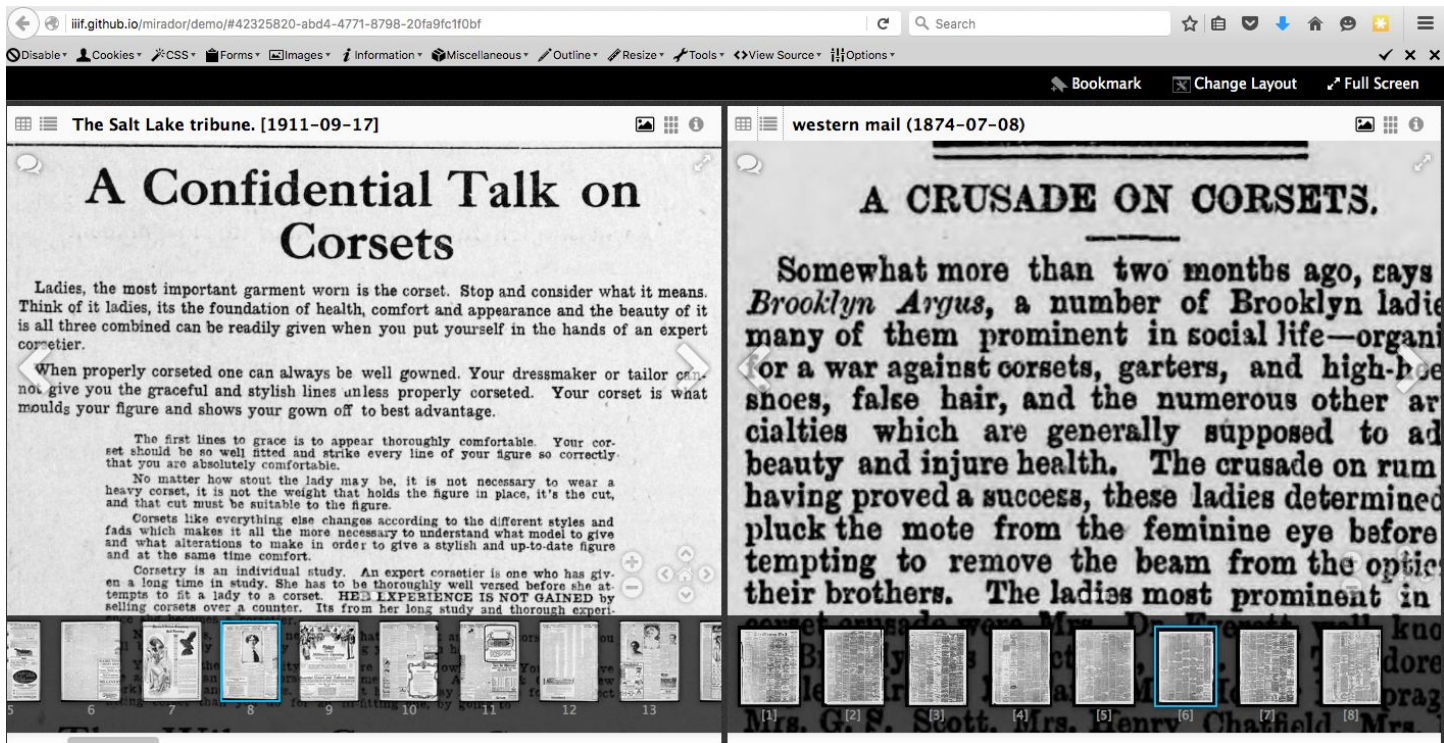
These instruments have covered the world's largest homes, and are sold with a strong guarantee. They save you money, as we are the Baldwin company's exclusive representatives, and the piano goes from the factory to your home. We can arrange terms to suit you.

6
7
8
9
10
11
12
13
14
15
16

# OCR and ALTO as Annotation Layers



# Strength of Interoperability and IIIF



<http://iiif.github.io/mirador/demo/>

# Aggregations and Digital Newspapers

europeana collections

Collections ▾ Explore ▾ Exhibitions ▾ Blog ▾

OUR SITES

LANGUAGE ▾

europeana\_collectionName:92\*ewspapers\* x washington x Add a search term

REFINE YOUR SEARCH

COLLECTIONS ▾

- All Items
- Art
- Fashion
- Music

MEDIA ▾

- Text (23)

CAN I USE IT?

- Limited Re-use (23)

Show specific rights statements ▾

PROVIDING COUNTRY ▾

LANGUAGE ▾

AGGREGATOR ▾

INSTITUTION ▾

1 - 12 of 23 results

Per page: 12  GRID  LIST


**La Redención del obrero - 1904-02-11 (1904)**

Con el subtítulo "periódico defensor de los trabajadores de Filipinas", está considerado como el primer periódico obrero de este país. Es fundado y dirigido por Isabelo de los Reyes y Florentino (1864-1938), que previamente había dirigido también el primer periódico...

newspapers

[View at National Library of Spain](#)

Text




**La Redención del obrero - 1904-02-18 (1904)**

Con el subtítulo "periódico defensor de los trabajadores de Filipinas", está considerado como el primer periódico obrero de este país. Es fundado y dirigido por Isabelo de los Reyes y Florentino (1864-1938), que previamente había dirigido también el primer periódico...

newspapers


[View at National Library of Spain](#)

Text



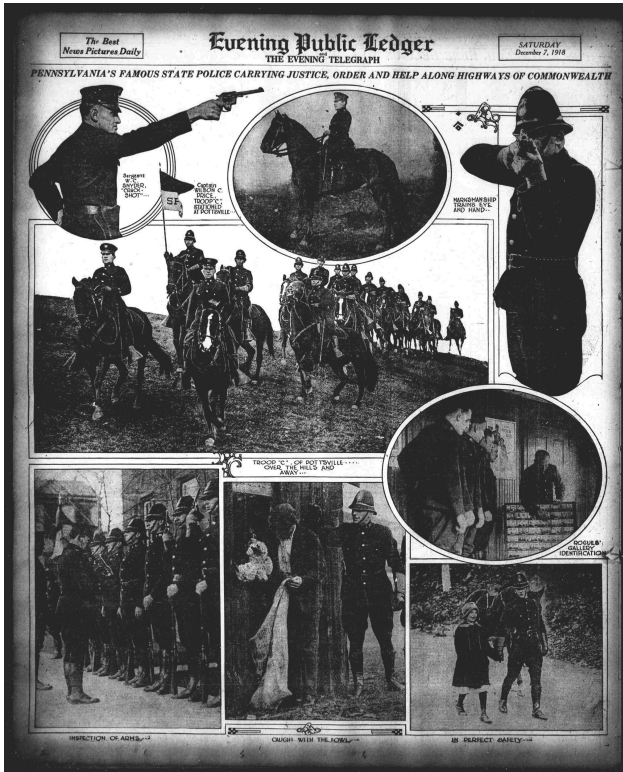
**La Redención del obrero - 1903-12-10 (1903)**

Con el subtítulo "periódico defensor de los trabajadores de Filipinas", está considerado



FEEDBACK





**Evening public ledger. (Philadelphia, PA),  
December 07, 1918, Final, Image 20**

<http://chroniclingamerica.loc.gov/lccn/sn83045211/1918-12-07/ed-1/seq-20>

## Police may soon have to tell the feds how many people they kill. Yea, that's not a thing yet

Aug 12, 2016 | By Jeffrey Benzing, Public Source

Comments: 0 | Leave A Comment

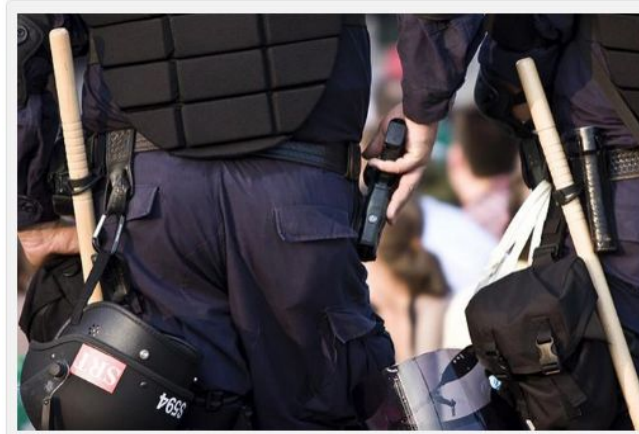


Photo by Tony Webster / flickr

It's only after news outlets like the Guardian and The Washington Post took it on themselves to track fatal incidents and deaths in custody that the U.S. Justice Department realized how wrong official numbers have been for many years.

<http://newpittsburghcourieronline.com/2016/08/12/p/olice-may-soon-have-to-tell-the-feds-how-many-people-they-kill-yea-thats-not-a-thing-yet/>

# Collaborating for Content and Access

# Collaborating to Preserve and Provide Access



A gateway to rare, historical, and primary source materials  
from or about Texas.

# The Portal to Texas History

780,000+ Digital Items (8.8 Million pages/images)

33 million item uses since 2009

343 Partners from across Texas

People and infrastructure funded by UNT Libraries

Content digitization and partnerships through external funding, grants and gifts

Cathy N. Hartman Portal to Texas History Endowment  
NEH Challenge Grant

# Texas Digital Newspaper Program

The Portal to Texas History

[Tour](#)

[About](#) ▾

[Explore](#) ▾

Search the Portal



You Are Here: / [home](#) / [explore](#) / [collections](#) / [texas digital newspaper program](#)

≡ Explore

hide

[Overview](#)

[Collections](#)

[Partners](#)

[Locations](#)

[Subjects](#)

[Types](#)

[Dates](#)

[Titles](#)

## Texas Digital Newspaper Program



The Texas Digital Newspaper Program (TDNP) partners with communities, publishers, and institutions to promote standards-based digitization of Texas newspapers and to make them freely accessible via The Portal to Texas History. Through continual outreach visits across Texas combined with advanced technological infrastructure and multiple funding sources, TDNP has become a state and national leader in newspaper preservation. People who work with the Digital Newspaper Program range from university researchers to librarians, K-12 students and educators, lay historians, and genealogists.

The success of the Texas Digital Newspaper Program has been heavily supported by grants from the National Endowment for the Humanities' National Digital Newspaper Program, the Texas State Library and Archives Commission, and the Tocker Foundation.

Learn more about the [Texas Digital Newspaper Program](#). | Explore all [Texas Digital Newspaper Program Titles](#).

[ABOUT](#)

[BROWSE](#)

[FEED](#)

[STATS](#)

[API](#)

[SHARE](#) ▾

What Can We Help You Find?

# 127 Partners, 1000+ Titles

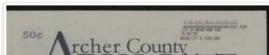
The Portal to Texas History

- Explore hide
- Overview
- Collections
- Partners
- Locations
- Subjects
- Types
- Dates
- Titles

## At a Glance

403,176 Items	3 Types	1074 Titles
127 Partners	20 Decades	10 Languages
213 Counties	31 States	3 Countries
13,249,331 Usage	7 years, 8 months ago Collection Created	4 days, 5 hours ago Last Updated

## Latest Additions



# 4.7 Million Pages, 13 Million item Uses (since 2009)

Statistics hide

Overview

Usage

Collection Growth

Partners

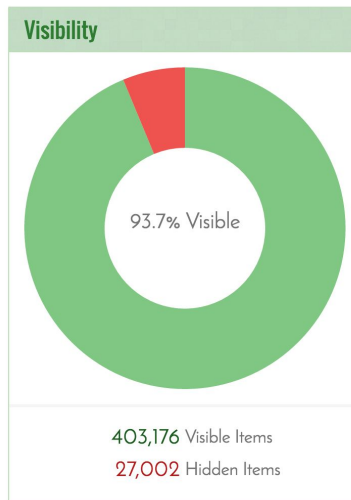
## Statistics: Texas Digital Newspaper Program

### Overview

430,178 Total Items

4,726,167 Total Files

13,249,331 Total Uses



### Usage



# Rapidly adding new content.

The Portal to Texas History

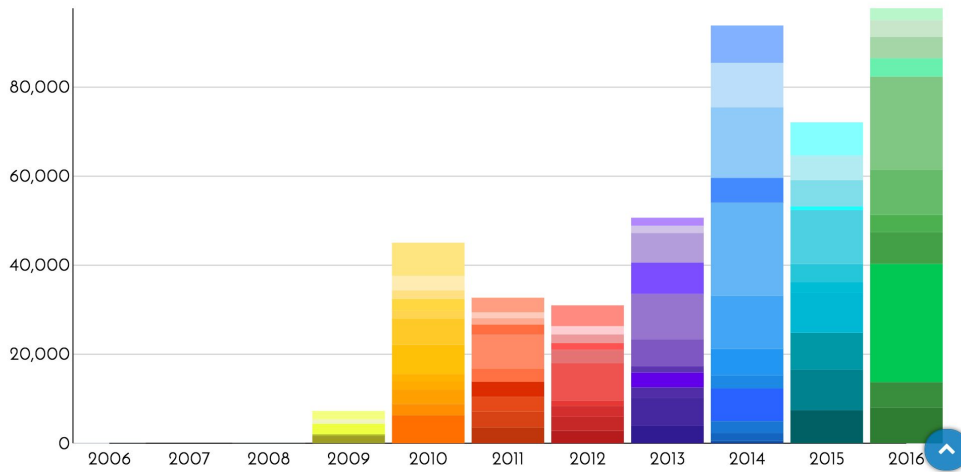
- Statistics hide
- Overview
- Usage
- Collection Growth**
- Partners

## Collection Growth



2016  
97,662 items  
22.7%

Yearly growth as a percentage of current total items





# Collaborations Across the State

127 Partners from across Texas contributing content

1,074 Titles

Tocker Foundation

154 Counties (of 254)

Ladd and Katherine Hancher Library Foundation

Texas State Library and Archives Commission (TSLAC)

Physical pages

Abilene Library Consortium

Microfilm

Born-Digital

Other Partner-funded projects

# Collaborations outside the State

National Digital Newspaper Program - Texas - 2007, 2009, 2011, 2016

National Digital Newspaper Program - Oklahoma - 2008, 2010, 2012

National Digital Newspaper Program - New Mexico - 2009, 2011, 2013

NEH - Chronicles in Preservation Partner

Texas Press Association and Newz Group 500+ Born-Digital Newspaper  
Title from Texas

Newspapers.com - Houston Post Digitization

# Planned Next Steps

5 Million pages in early 2017

Increased capacity for paper-based newspaper digitization

More born-digital newspaper content

IIF Image, Presentation and Search Implementation

More newspaper page text datasets

(already 12 datasets with ~1 million pages in UNT Data Repository)

# Thank You

## **Sheila Rabun**

IIIF Community &  
Communications Officer,  
International Image  
Interoperability Framework (IIIF)

## **Karen Estlund**

Associate Dean for Technology  
and Digital Strategies,  
Penn State University Libraries

## **Mark Phillips**

Associate Dean for Digital  
Libraries,  
University of North Texas  
Libraries