

When is a book not a book?

Incorporating panoramas into Islandora

Joanna DiPasquale, Digital Initiatives Librarian, Vassar College Libraries
@jldipasquale

The introduction

Vassar College Libraries

About Vassar

- **Small liberal arts college** (Co-ed, ~2500 students, 290 faculty members)
- 75 mi/120 km from NYC
- One of the largest undergraduate library systems in the U.S. (>1 million volumes, excluding journals and microfiche)

About the Digital Library

- About 50,000 repository objects managed by Islandora/Fedora (images, audio)
 - Excludes newspapers (about 55,000 images)
 - Excludes art database (about 100,000 images)
 - Excludes IR (about 420 files)
- Fairly new (developed 2011-2012) but some amazing digital collections
- Really small team

The challenge



Panoramas / virtual tours

Can we store and deliver panoramas of Gothic cathedrals?

<http://gothicstructure.org/projects/chartres.html>

Virtual visit in spherical panoramic photographs



Use case

1. Faculty member flies to France (or other fantastic places), takes pictures of Gothic cathedrals.
2. Faculty member generates ~~hundreds~~ thousands of a variety of different images.
3. Faculty member creates panoramas from his field work.
4. **Faculty member wants a way to manage this set of panoramas in a collection and provide public access in a very specific way.**

The Problem

The problem

- We don't know how to do this.
- We really need to know how to do this.
- Who knows when we'll move onto the next challenge...

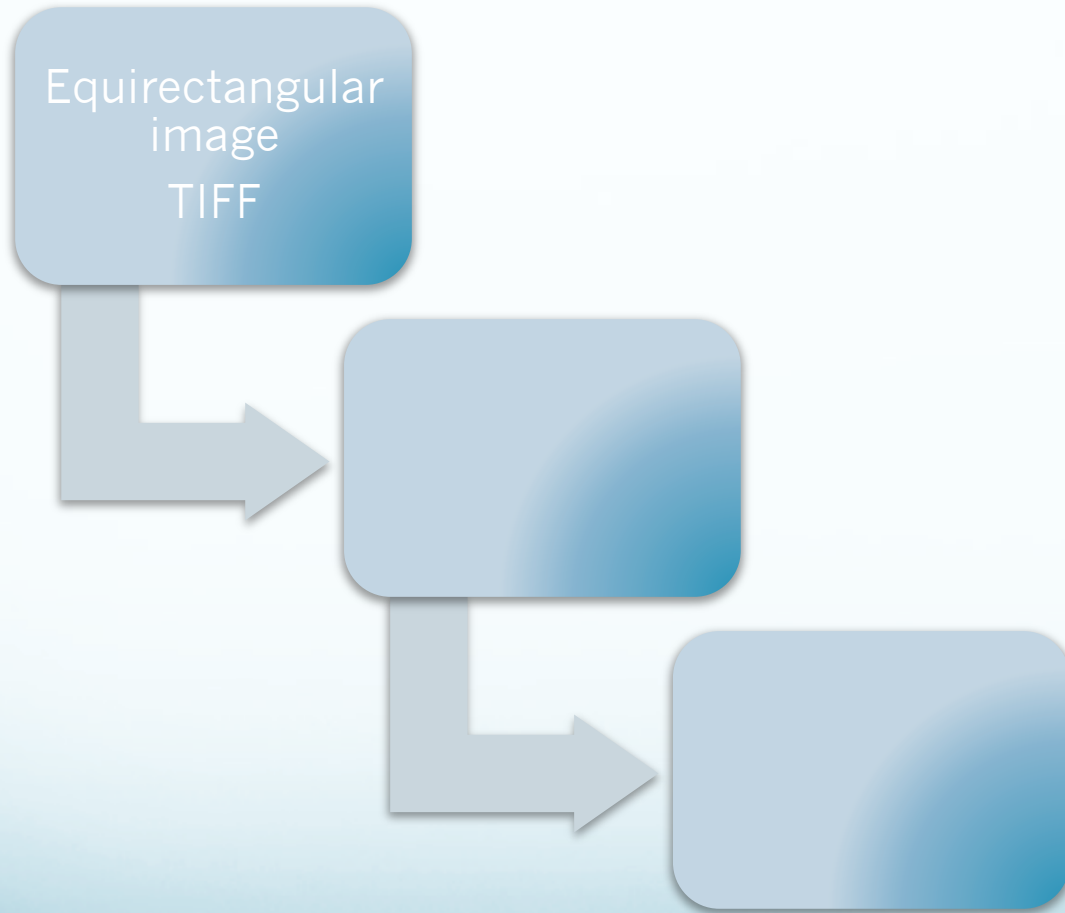
Wow...!

A screenshot of a National Geographic website article. The top navigation bar is black with the National Geographic logo on the left, social media icons for Facebook and Twitter, a search bar, and a 'Sign In or Join' button. Below the navigation bar is a horizontal menu with links for News, Video, Photography, The Magazine, Environment, Travel, Adventure, Television, Kids, Subscribe, and Shop. The main content area is white and features the word 'INNOVATORS' in a small font. The article title is 'Historian Uses Lasers to Unlock Mysteries of Gothic Cathedrals' in a large, bold, black serif font. Below the title is a short paragraph: 'A tech-savvy art historian uses lasers to understand how medieval builders constructed their architectural masterpieces.'

Vassar art history professor Andrew Tallon's work recently featured in National Geographic
June 22, 2015 | <http://goo.gl/d7TB2v>

Deconstructing the problem

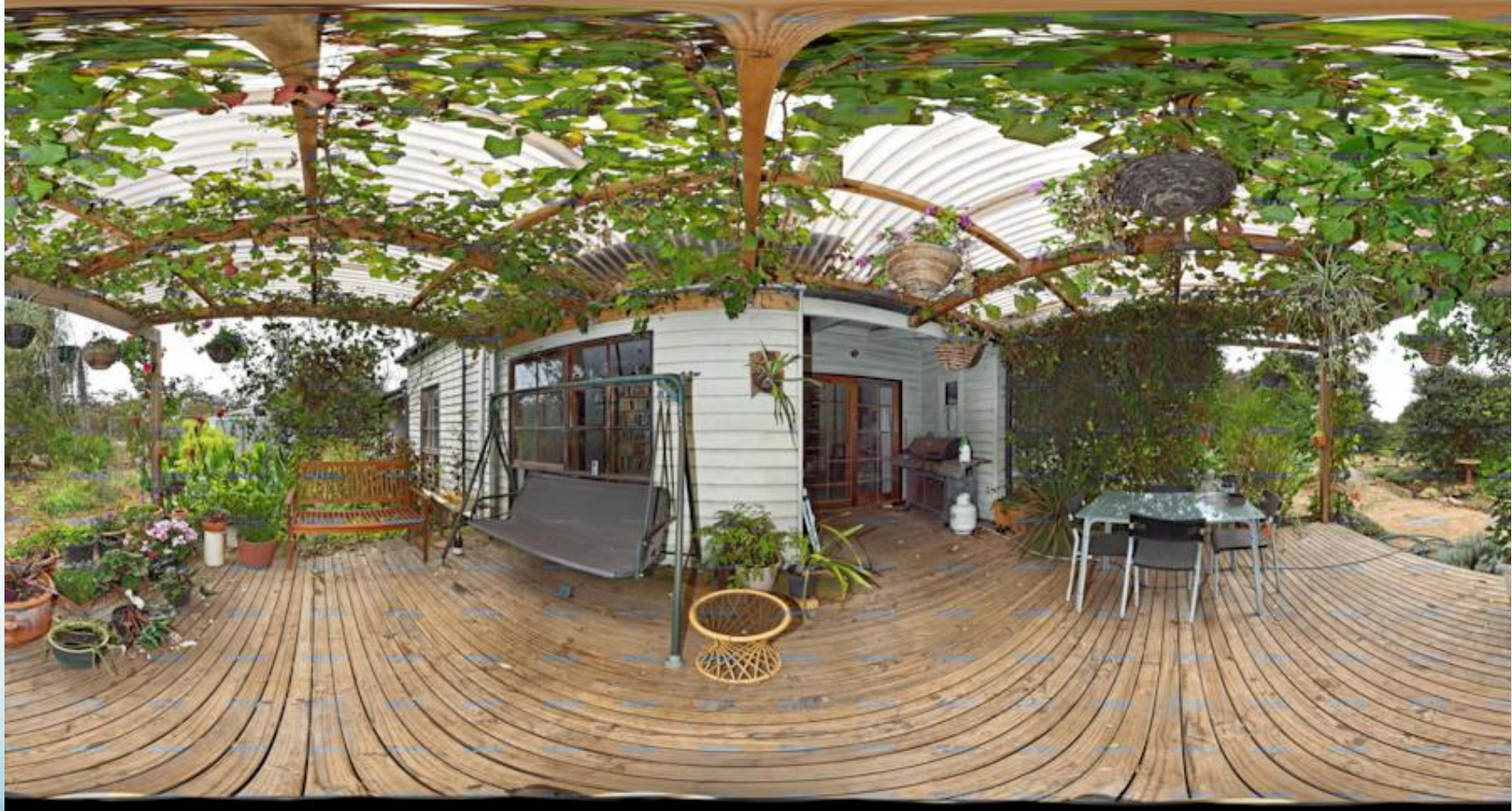
What is a panorama?



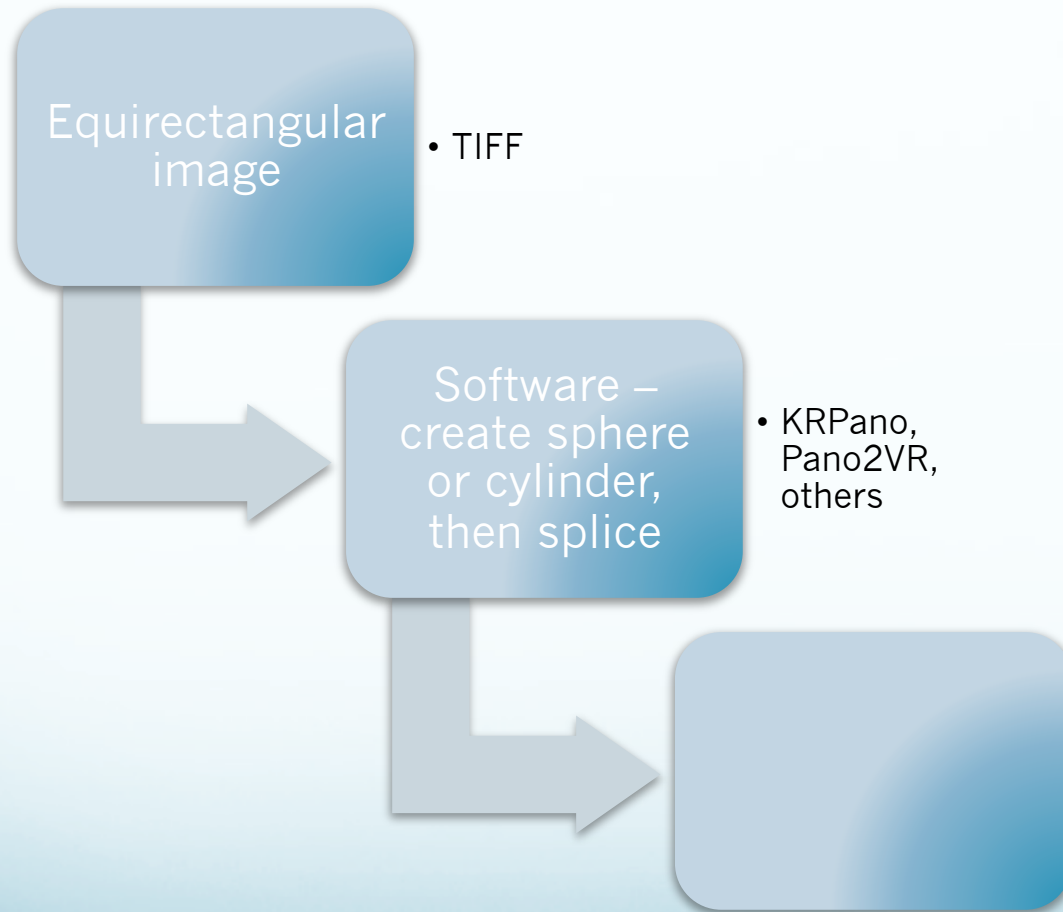
Equirectangular file



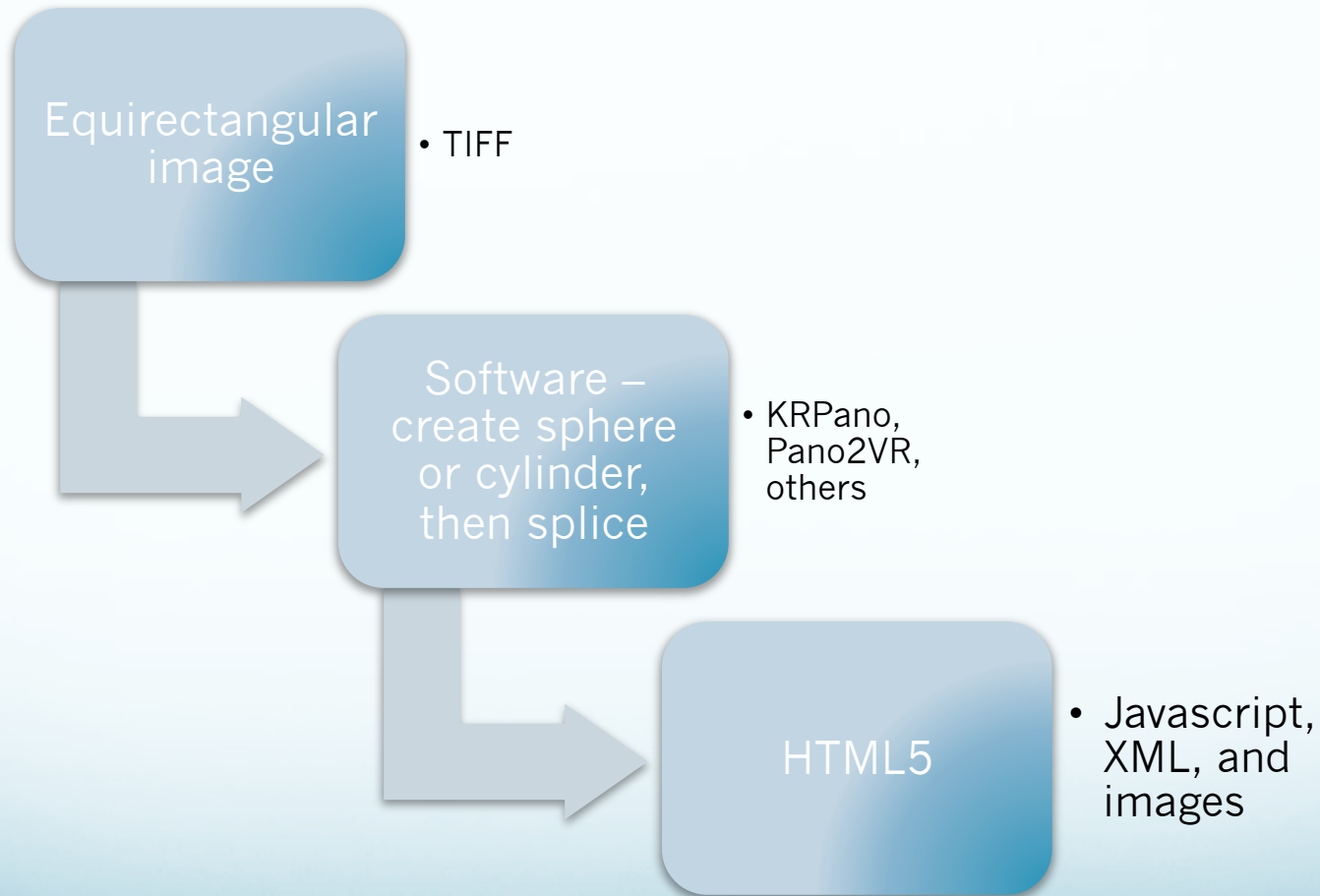
Another equirectangular file



What is a panorama?



What is a panorama?



Wait a minute...

We know how to do this!

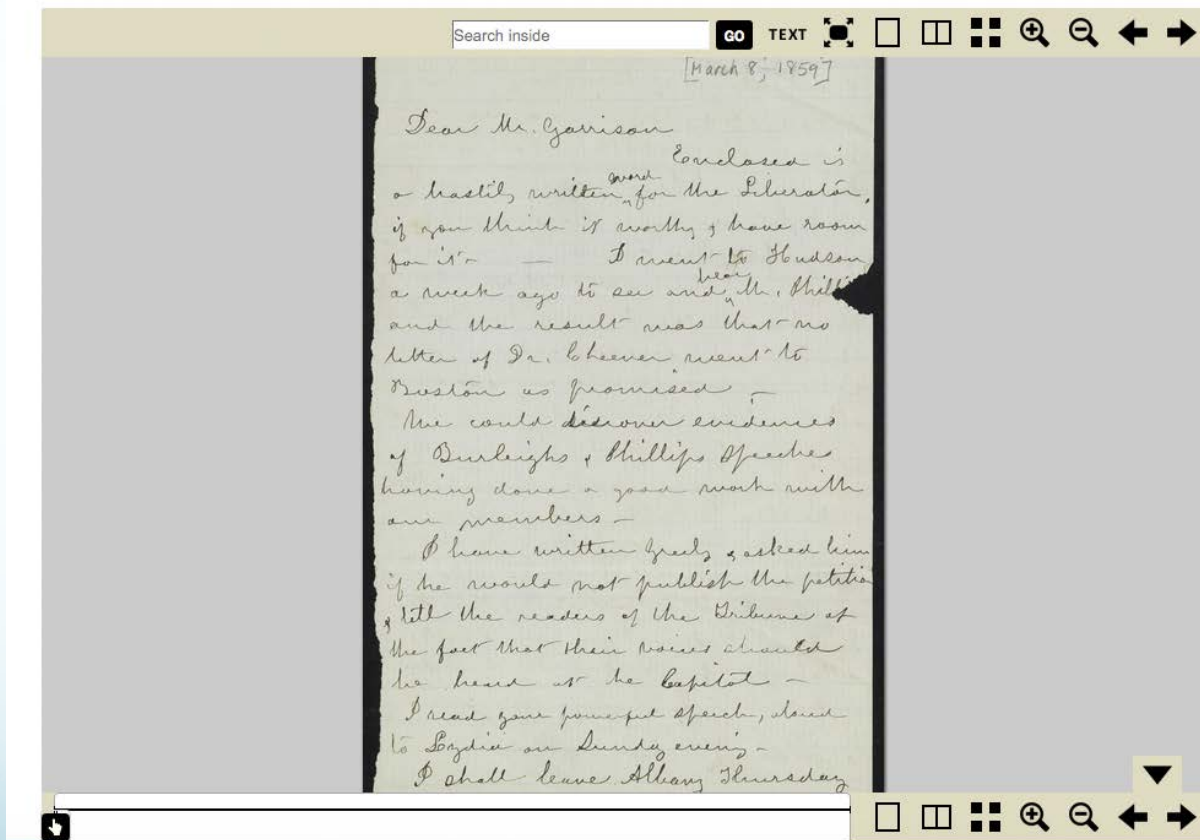
- Images
 - That relate to one another
 - In a very specific order*
 - Arranged via an XML configuration file
 - Stitched together with Javascript
- Alternative format available
 - SWF file

** No real order for humans, but specific order for software*

The realization

Panoramas are books!

Anthony, Susan B. -- to William Lloyd Garrison, [Mar 8, 1859]















The Solution

Content model

- Modeled specifically after Islandora BookCModel
- Islandora PanoramaCModel
 - Accepts array('tif', 'tiff', 'jpg', 'jpeg', 'jp2')
 - Creates RELS-EXT and RELS-INT for child pages
 - Can ingest in batch
 - **Can rearrange pages**
- https://github.com/jjdipasquale/islandora_panorama

Rearranging “pages”

- Cube faces have a very specific order
 - Order varies per plugin
 - Nice to be able to swap plugins → reorder images

Page #	Thumbnail	Label	Page #	Thumbnail	Label
1		equirectangular_out_2	1		equirectangular_out_2
2		equirectangular_out_5	2		equirectangular_out_5
3		equirectangular_out_0	3		equirectangular_out_0
4		equirectangular_out_3	4		equirectangular_out_3
5		equirectangular_out_1	5		equirectangular_out_1
6		equirectangular_out_4	6		equirectangular_out_4

Quick Reorder

Move Pages:

Must follow the form '1, 2-4,5'.

Insert After:

Plugin requirements

- Write out XML files
 - *Intriguing...* can we use JPEG2000 files for the zooming feature?
- Call Javascript

KRPano:

- <http://www.krpano.com>
- https://github.com/jdipasquale/islandora_panorama_krpano

Pano2VR:

- <http://ggnome.com/pano2vr>
- https://github.com/jdipasquale/islandora_panorama_viewer

Basic plugin structure (krpano)

```
-- README.md
-- CSS
  `-- islandora_panorama_viewer.css
-- images
-- includes
  |-- admin.form.inc
  |-- callback.inc
  `-- utilities.inc
-- islandora_panorama_krpano.info
-- islandora_panorama_krpano.install
-- islandora_panorama_krpano.module
-- js
  `-- krpano.js
-- skin
  |-- buttons-2.png
  |-- defaultskin.xml
  |-- drag-cursors-2.png
  `-- qtvr-cursors.png
-- theme
  |-- islandora-panorama-krpano.tpl.php
  `-- theme.inc
```

Writing out XML on the fly

```
islandora_panorama_krpano.module
```

```
function islandora_panorama_krpano_menu() {  
  return array(  
    'panorama_krpano_xml/%islandora_object' => array(  
      'page callback'  
=>'islandora_panorama_krpano_xml_callback',  
      'page arguments' => array(1),  
      'access callback' => 'user_access',  
      'access arguments' =>  
array(ISLANDORA_VIEW_OBJECTS),  
      'file' => 'includes/callback.inc',  
      'type' => MENU_CALLBACK,  
    ),  
  );  
}
```

Writing out XML on the fly (cont'd)

Creates a file like this:

`http://server/panorama_krpano_xml/islandora:78`

- `includes/callback.inc`

```
function
```

```
islandora_panorama_krpano_xml_callback(AbstractObject $object)
```

Uses the XML file as the config file for the JS

Problems

- No “one button” solution yet
 - Licensing
- New spec: laser pointed pictures!

An Islandora panorama example

Aachen Cathedral – Interior, Nave

[http://dgtest01.vassar.edu/islandora/object/
islandora:78](http://dgtest01.vassar.edu/islandora/object/islandora:78)

[http://dgtest01.vassar.edu/panorama_krpano_xml/
islandora:78](http://dgtest01.vassar.edu/panorama_krpano_xml/islandora:78)

Next steps?

- Community needs?
- Metadata needs?
- What else can be a panorama?
- What else can be a book-not-book?
 - The scrapbook challenge
 - What else is a *page*? (*isMemberOf*, *isConstituentOf*, etc.) Can “books” have different types of pages?

islandora_paged_content.api.php

```
/**
 * @file
 * This file documents all available hook functions to manipulate data.
 */

/**
 * Identifies content models whose children are paged content.
 *
 * @note
 * The children content model PIDs currently map to an empty array as there may be room for expansion in the future.
 * @return array
 * An array mapping the parent paged content model to an array of keyed content model arrays containing:
 * - parents: An associative array mapping applicable content models to predicates by which the current entry might be related.
 *   Not strictly needed if it belongs to a collection.
 * - children: An array containing arrays of keyed content model children.
 */
```

Thank you!

Joanna DiPasquale

Vassar College Libraries

jdipasquale@vassar.edu

@jldipasquale