James Madison University

- Public University in Harrisonburg, VA
- ~20,000 students
- 38 Master’s Programs
- 8 Doctoral Programs
- Emphasis on undergraduate research

- JMU Libraries strive to engage with the university’s diverse communities in their creation and search for knowledge through academic resources, physical and virtual spaces and educational and research services.
LET Innovation Services creates exciting virtual and physical spaces, programs and services where the JMU community can explore, experiment, and innovate in their teaching, learning, and scholarship.
**Guiding Principles**

**Democratizing**
Available to everyone on campus with as few barriers to entry as possible.

**Nexus**
Interdisciplinary and neutral space for people to collaborate.

**Agile**
Both in our ability to respond and predict needs.

**Programming**
Draw users into the spaces and provide opportunities for people to show off their work.
PROGRAMMING
- Hack-a-thons
  - Creative Problem Solving
  - Long
  - Requires advanced skills
  - Often software-based
  - Big prizes

- Makersprints
  - Creative Problem Solving
  - Three hours
  - No previous experience required
  - Prizes? ／_(_坟)_／
DOLLAR STORE & MAKERSPRINT
Keep moving forward!

- It can take some time to build an audience.
- Signups != Attendance
- Prizes proved to be difficult to acquire.
  - May not have been a big deal.
- There is no perfect time/date.
- Be realistic about time, skills, and tools.
- A lot of work. Maybe too much.
A STRANGE ARDUINO THING
Strange Lessons Learned

● A fun hook can make all the difference.
● Know your audience
  ○ Your references may not be their references
● Be realistic about budgeting time and money.
  ○ Skills you take for granted will be completely foreign to some makers
  ○ But also don’t waste time fretting over $20 in supplies
● It’s fun to leave with a new decoration for your home.
PARTNERSHIPS
HIST 362 (Introduction to U.S. Religious History) Taught by Dr. Andrew Witmer

- Used a combination of 3D scanners and photogrammetry to accurately re-create religious artifacts.
- Working closely with an actual physical object to create a 3D model offered opportunities to handle the stuff of religious life, attending to its feel, heft, dimensions, and materials.
- Students also grappled with the religious significance of the artifacts. Did the models retain the significance?
OBJECTS OF FAITH

Cotton scarf wrapped as a Hijab

Woodbine Cemetery Headstone

Buddhist Daruma Doll

[Images of various religious objects]
BELOVED SON & BROTHER

CALVIN RAY BEACH

SEPTEMBER 5, 1957

AUGUST 25, 2012
Professor introduced to 3D scanning and printing through a sandbox series.

Students provided hands-on workshops
  ○ Principles of photogrammetry (how to capture a series of photographs for purposes of 3D modeling)
  ○ Using Autodesk ReMake to create 3D models, to clean up 3D models, and to publish 3D models

Ongoing support and consultation to students and instructor throughout the assignment.

Access to specialized hardware (scanners, iPads, etc.) and 3D printers in the makerspace.
HIST 362 Final Presentations

- Held at near the end of semester in a public meeting space on campus
- Open to the public and attended by library staff, history faculty, and JMU administrators.
- Each team presented their research and their objects virtually and physically.
OBJECTS OF FAITH

HIST 362 FINAL PRESENTATIONS
Tuesday, April 25, 2017, 2:00-3:30
Madison Union 306 (Taylor Hall)

All are welcome to join as project teams from HIST 362: Introduction to U.S. Religious History present the results of their semester-long work studying, 3D modeling, and 3D printing a wide range of religiously meaningful objects.
HIST 422: Historic Spaces in VR

- HIST 422: The Early American Republic
  Taught by Dr. Andrew Witmer

- Reconstruct a variety of historic spaces that could be experienced in VR via SketchUp.

- “deepen your understanding of the built environment of this era”

- “use your original research from your essay and insights from class discussions and readings to shape how you conceptualize, construct, and interpret your 3D model”
HIST 422 TRAINING & SUPPORT

- Professor was exposed to VR through a sandbox series.
- Training and support for SketchUp via workshops, one-on-one consultations and written documentation.
• Open to the public and attended by library staff, history faculty, JMU administrators, JMU reporters, and parents.

• Each student presented their research by providing guided tours of their virtual environments. Wearing a tethered VR headset and projecting their virtual walk-throughs on a shared display.

• The performances were theatrical and unusual insofar as the speaker was immersed in a virtual world and unable to see the audience.
VIRTUAL SPACES PROJECT

HIST 422 FINAL PRESENTATIONS
December 7, 2017, 9:30-10:45 AM
Madison Union 305 (Taylor Hall)

All are invited to join the students of HIST 422: The Early American Republic as they use virtual reality to present their semester-long work studying and modeling historical spaces.

VIRTUAL TOURS OF
• historic houses
• slave quarters
• religious and civic spaces
Virtual Reality Brings Tours To JMU

By PETE DeLEA
Daily News Record

HARRISONBURG — About a dozen James Madison University students toured some of America’s most historic buildings Thursday without stepping foot off campus.

The students spent the semester creating virtual reality tours of buildings built during the early American republic, the period between the Revolution and the Civil War.

“Americans of this era expressed great interest in the power of spaces to influence human character and action, for good or for ill,” said Andrew Witmer, associate professor of history, who led the class. “This project springs from the conviction that space matters. It is not just a neutral backdrop for human activity. The spaces that people build express their beliefs and values.”

This is the first time Witmer’s used virtual reality in his classes but he’s constantly looking for new and innovative ways to teach students. He partnered with JMU’s Innovation Services to help teach the students how to operate the technology.

The projects ranged from Thomas Jefferson’s Poplar Forest in Bedford County to the Albemarle County Courthouse.

Kathleen Ollifers, a 20-year-old junior from Westchester County, N.Y., decided to learn more about her favorite president, Abraham Lincoln.

Using blueprints and written accounts, she pieced together a virtual reality tour of the Springfield, Ill., home that Lincoln moved into in 1844, about 16 years before he became president.

“I thought it was definitely challenging but it was a unique way to look at history,” said Ollifers, who plans on becoming a high school history teacher. “I learned not only about the space but a lot about Lincoln and his family that I wouldn’t have if just took another history class and read a book.”

Maria Matlock, a 21-year-old junior from Kingsport, Tenn., picked Elizabeth Cady Stanton’s Seneca Falls, N.Y., home for her project. Stanton is credited with starting one of the first women’s rights movements in the United States.

“I’ve always been interested in women’s history and I wanted my research to focus on the women’s rights movement,” Matlock said. “I thought this would be the perfect project.”

See TOURS, Page A4
ENG 420: Advanced Studies in Film and Media Theory
Taught by Dr. Dennis Lo

- Critically view and respond to 360° or VR productions similarly to traditional film.
- Optionally, produce a 5 minute 360° video essay in lieu of a traditional written essay.


● **Spaces**
  ○ A dedicated space for viewing 360° and VR content
  ○ The space included a *very* powerful desktop workstation, required both for viewing VR content and for editing 360° videos

● **Publishing platforms**
  ○ 360 videos published to YouTube and embedded in WordPress

● **Training and support**
  ○ Staff from Digital Projects, Innovation Spaces, and Instructional Design & Technology provided workshops and one-on-one consultations to teach students about 360° videography.

● **Final presentations**
  ○ A screening is scheduled for the eight students who elected to produce a 360° film. The event will be open to the public. Local reporters will be invited.
First general-education college 3D printing classroom in the country, established in 2003
Partnership with College of Math and Science, Institute for Visual Studies
Hosts faculty and staff workshops used to generate traffic into The Makery
Seats 24 students, 16 printers and 8 computers.
I love **deadlines**. I like the whooshing sound they make as they fly by.

- Douglas Adams
Keep moving forward!

- We needed to balance our newfound responsibilities while being sensitive to the history and sense of ownership the founders felt.
- Talking through the logistics provided neutral opportunities to talk through the touchier subjects.
- A lack of strong direction from leadership complicates everything.
**JMuke and Music Technology**

**JMuke** is a community-based music group where anyone can learn how to play ukuleles and play/sing with others. The group is run by music education students who will host events throughout the community.

**MUS 150 - Music Technology** is a required class for all music education students where they are required to create interactive, technology-mediated music experiences that engages the general public.

Dr Jesse Rathgerber
Experiencing Music Tech
Music Lessons Learned

- Sometimes less is more.
- Try not to feel left out if the program continues to flourish without you.
- Makerspaces and libraries often have differing priorities and goals.
In summer of 2017, we were approached to partner with the engineering department to create a program to teach every first-year engineering student basic electronics via arduinos.

Many meetings were had. A basic curriculum was developed.

And that…is about it.
The faculty member had failed to include anyone else in his department in his planning. The rest of the department was...less enthusiastic.

While being small and agile is helpful, you can go too small.

A little communication can go a long way.

Thinking through proved valuable regardless of the outcome.
EXPECTATION VS REALITY

- Definitions of “makerspace” vary wildly, along with expectations.
  - History Lab
  - Woodworking in the library
- Everyone is eager to collaborate in theory, less so in practice.
  - ICCE
  - Engineering
- How to facilitate long-term, resource-intensive projects.
Checking out equipment is shockingly hard.

Practice makes done.

Saying “It’s Okay to Fail” is easy to say and hard to do.

The times for libraries, they are a changin’