Data visualization at Miami University
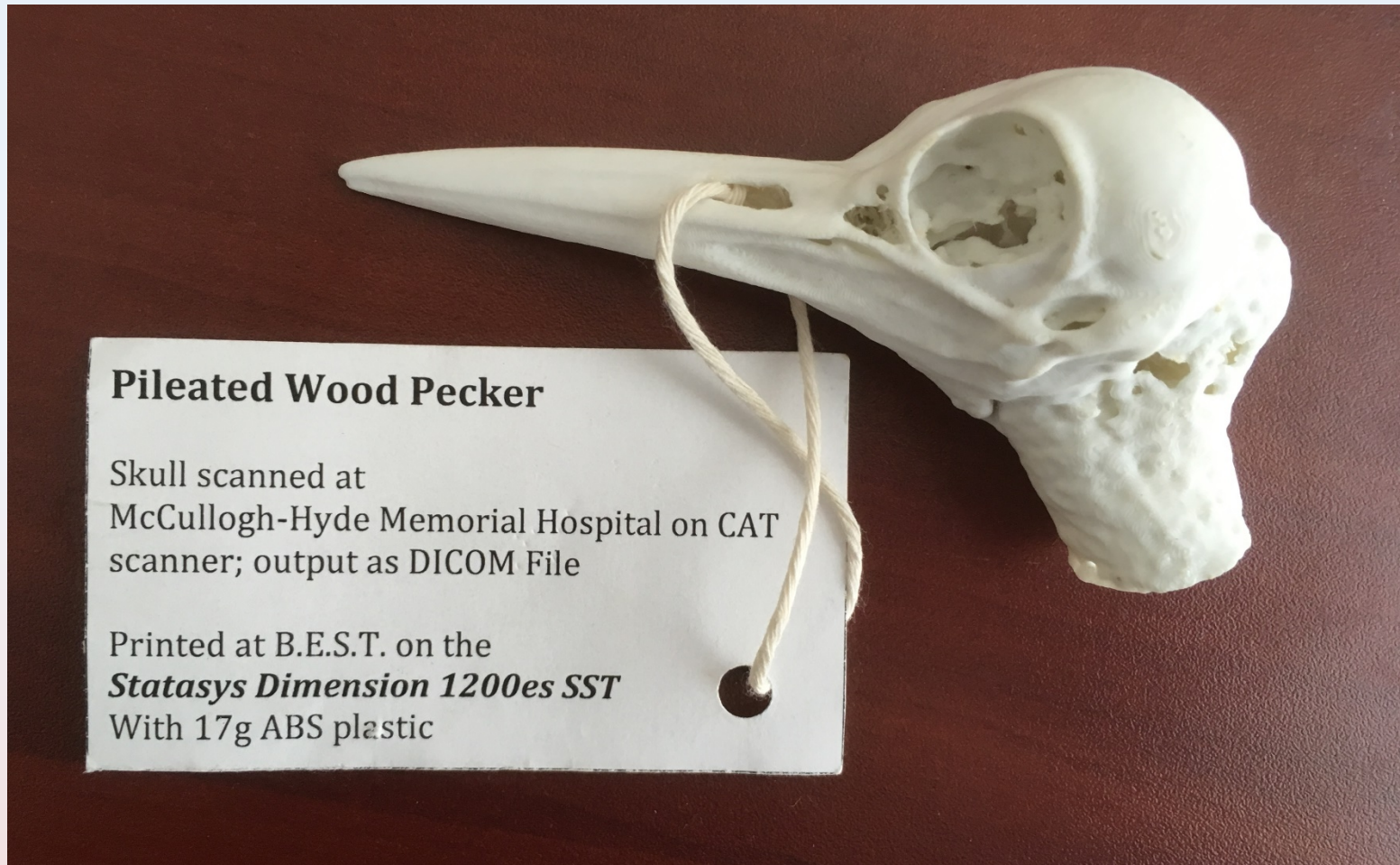
2018 October 9
Eric Johnson

Center for Digital Scholarship

- Project oriented unit
- Work with Faculty and grad students
- Classroom teaching sessions in digital tools
- A unit of the Create and Innovate department

3-D modeling

- Physical representations of data
- Easier to manipulate than on-screen renderings

CAT scan images

Pileated Wood Pecker

Skull scanned at
McCullogh-Hyde Memorial Hospital on CAT
scanner; output as DICOM File

Printed at B.E.S.T. on the
Statasys Dimension 1200es SST
With 17g ABS plastic
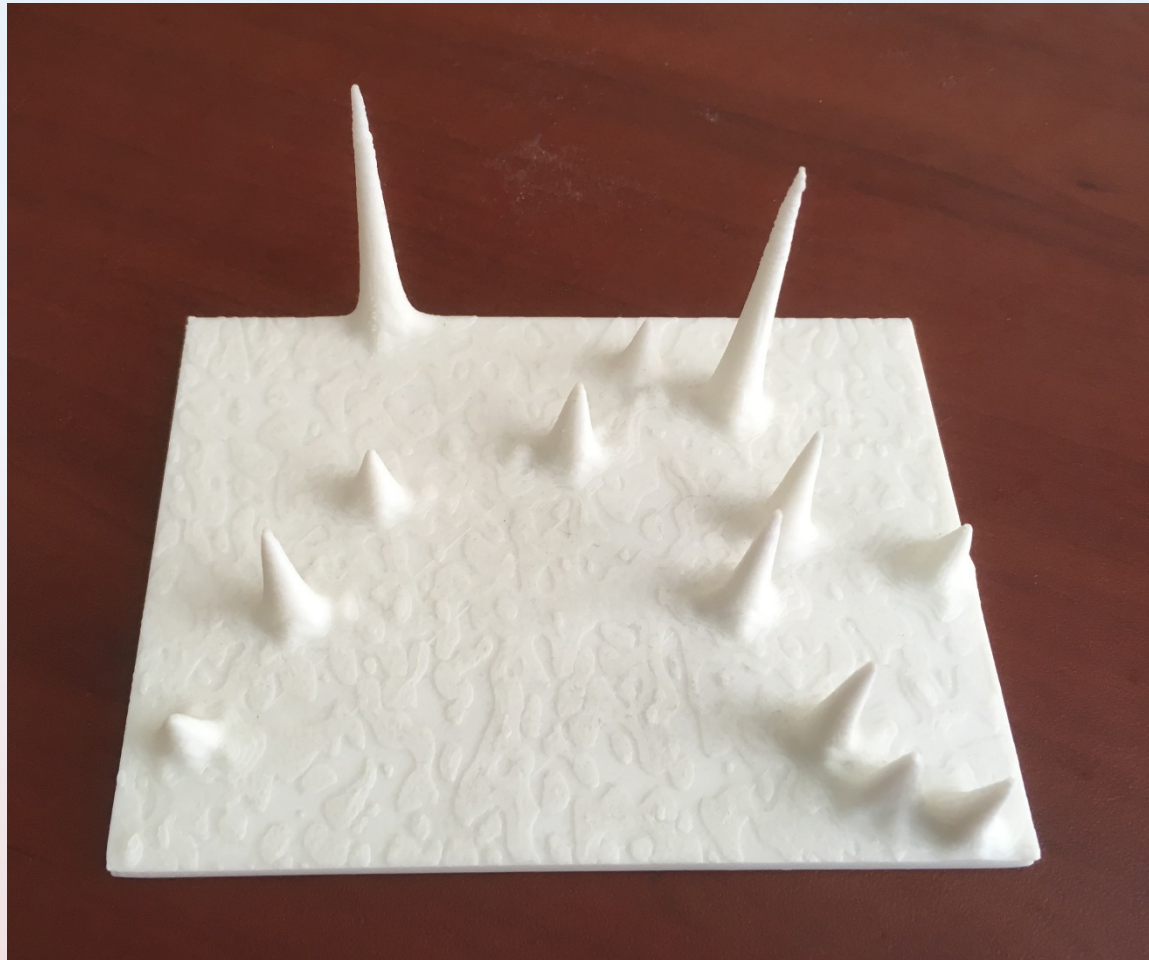
Archology specimens

- Pot sherd

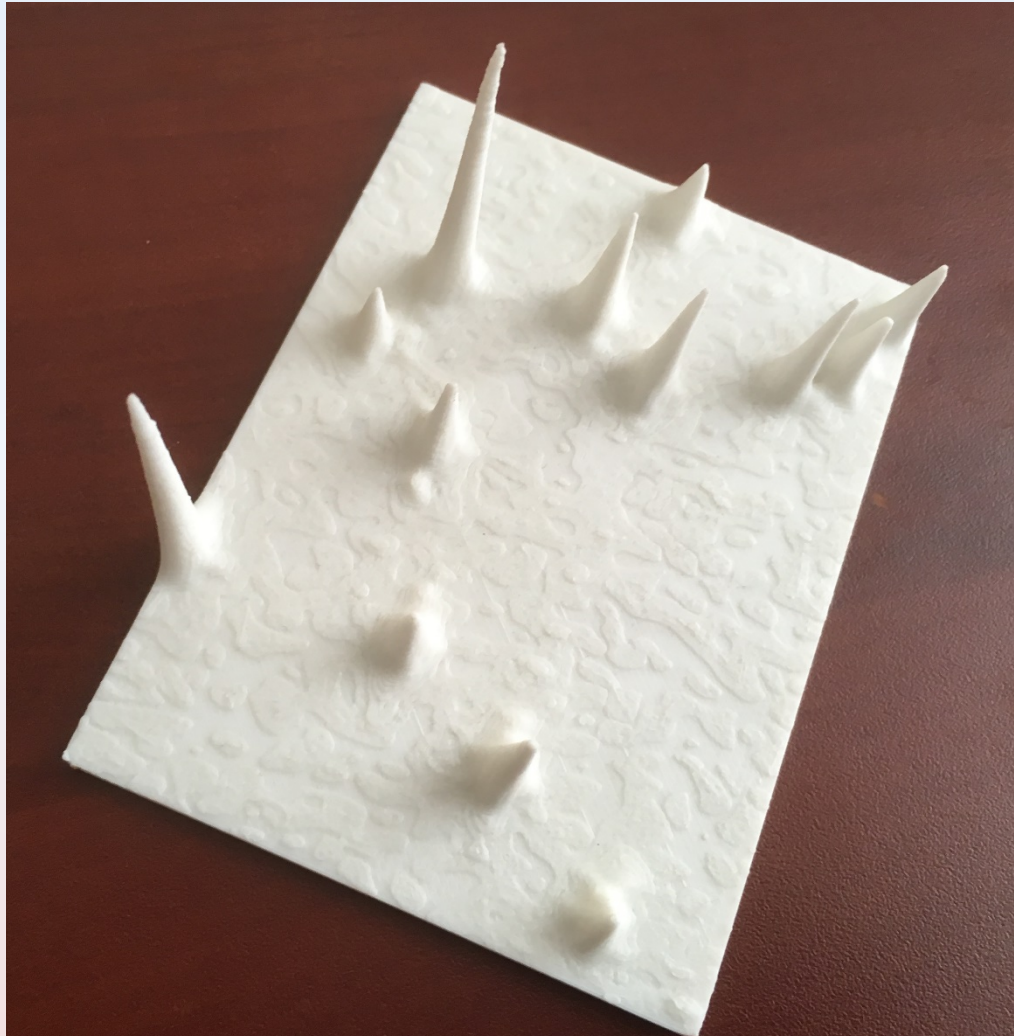- Safe to handle – can be replaced if broken

2-D NMR

- Nuclear magnetic resonance spectroscopy
- Identifies molecular bonds by signal strength at multiple frequencies.
- 3-D model allows for better visualization than 2-D images.

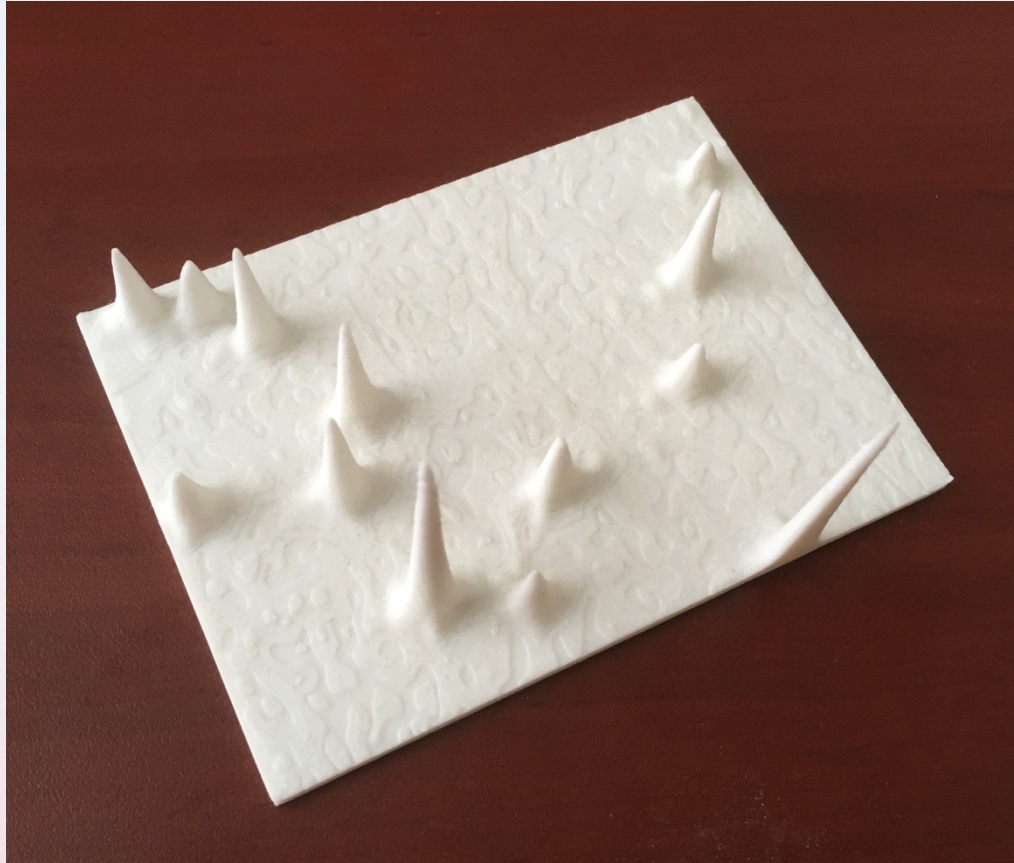- *Thanks to C+I John Williams for 3-D models*

2-D NMR
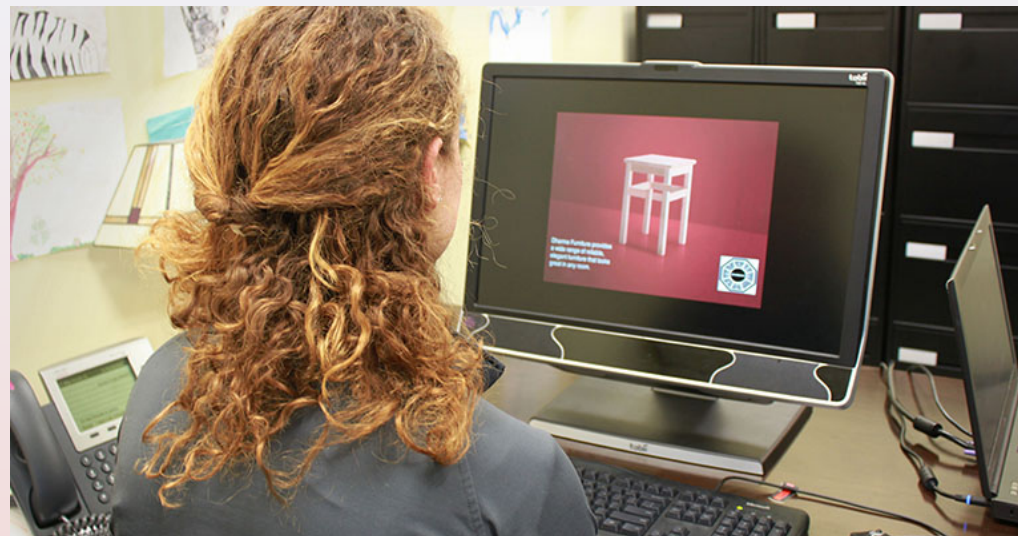
2-D NMR

2-D NMR

Interactive Media Studies

- Game design courses

- Visualization tools

- Visualization lab
    - CAVE (immersive 3-D virtual environment)
    - VR headsets

Pop-up makerspaces

- All the hardware in portable cases
- 3-D scanning/printing
- VR headset (HTC VIVE)
- Teleprompter + video camera station
- Listening stations (record digital stories)
- Arduinos and Raspberry Pi's
- Music makerspace – Oct 18

Visualization Lab

- Repurposing a digitization lab
  - 270° interactive visualization walls
  - VR headset
  - 360° camera

Connecting to stakeholders

- Interactive Media Studies (with the CAVE)
  - Needs more lab space for their students
- Center for Data Analytics
  - Possibly provide them office space connected to the visualization lab
- Department of Statistics
  - Desires interactive 2-D visualization capabilities.
- Students
  - Library resources are available to all students from any department

What will we do with it?

- Interactive data exploration
- Visual digital story telling
- Illustrate concepts
- Thesis and student project display space
- Donor magnet
- VR exploration

Questions?

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