



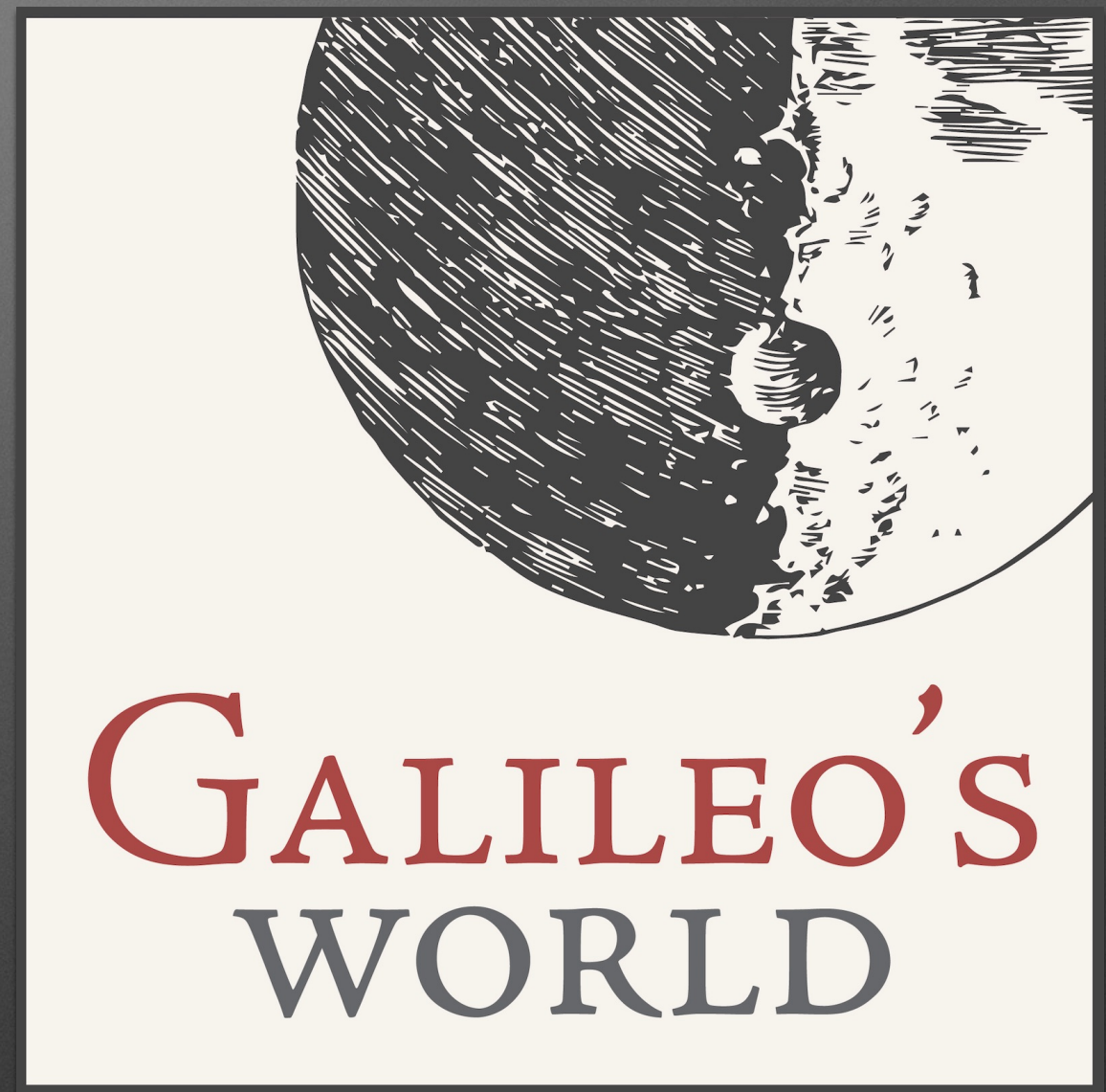
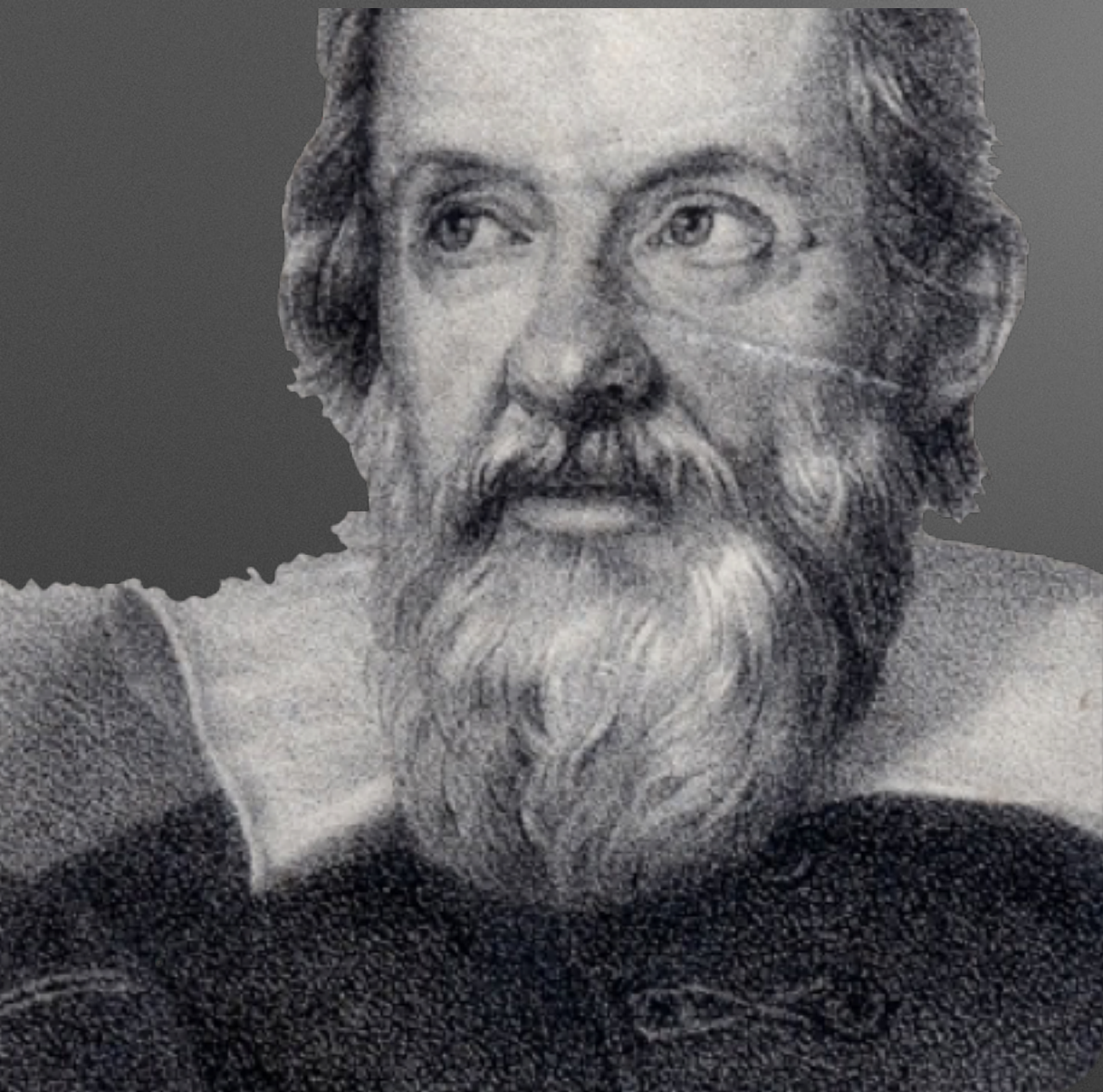
# **Galileo's World and the digital Word**

Kerry V. Magruder, Curator  
Brent Purkable, OU Lynx Outreach Director

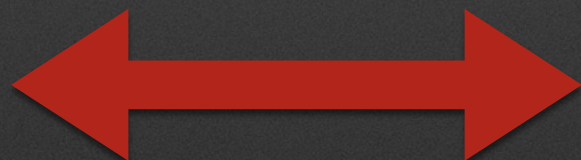
History of Science Collections  
University of Oklahoma Libraries



# Bringing Worlds Together



World of Galileo



World of OU



# EXHIBITION WITHOUT WALLS

4 CAMPUSES

- OU NORMAN
- HEALTH SCIENCES CAMPUS, OKLAHOMA CITY
- OU TULSA
- OU AREZZO, ITALY – AREZZO PUBLIC LIBRARY



# EXHIBITION WITHOUT WALLS

4 CAMPUSES • 8 LOCATIONS

- OU NORMAN
  - SAM NOBLE MUSEUM OF NATURAL HISTORY
  - NATIONAL WEATHER CENTER
  - ATHLETICS DEPARTMENT, HEADINGTON HALL
  - FRED JONES JR. MUSEUM OF ART
  - OU LIBRARIES, MAIN FLOOR
    - 5TH SPECIAL COLLECTIONS: HOS / NICHOLS / BASS / BIZZELL
- HEALTH SCIENCES CAMPUS, OKLAHOMA CITY
  - BIRD LIBRARY
- OU TULSA
  - SCHUSTERMAN LIBRARY
- OU AREZZO, ITALY – AREZZO PUBLIC LIBRARY



# EXHIBITION WITHOUT WALLS

4 CAMPUSES • 8 LOCATIONS • 21 GALLERIES

- OU NORMAN
  - SN: NATURAL HISTORY OF THE AMERICAS; MICROSCOPY
  - NWC: EXPERIMENTATION, SPACE SCIENCE, ETC.
  - HH: GALILEO AND SPORTS
  - FJ: AN ARTFUL OBSERVATION OF THE COSMOS
  - BL1: TOWER OF PISA; QUEST FOR OTHER WORLDS
  - BL5: MUSIC OF THE SPHERES, GALILEO AFFAIR, ETC.
- HEALTH SCIENCES CAMPUS, OKLAHOMA CITY
  - BIRD: GALILEO AND ANATOMY; GALILEO AND HEALTH CARE
- OU TULSA
  - SCHUSTERMAN LIBRARY: THE SCIENTIFIC REVOLUTION
- OU AREZZO, ITALY – AREZZO PUBLIC LIBRARY



# “TOP 10”

- ART
- ASTRONOMY
- BIOLOGY
- ENGINEERING
- INSTRUMENTS
- MATHEMATICS
- MUSIC
- SCIENCE  
EDUCATION



# “TOP 10”

- ART
- ASTRONOMY
- BIOLOGY
- THE BOOK
- CHEMISTRY
- ENGINEERING
- GEOLOGY
- GEOGRAPHY
- HEALTH SCIENCES
- HISTORY
- INTERNATIONAL STUDIES
- ISLAMIC SCIENCE
- INSTRUMENTS
- LAW & POLITICAL SCIENCE
- MATHEMATICS
- METEOROLOGY
- MUSIC
- PHILOSOPHY
- PHYSICS
- RELIGIOUS STUDIES
- SCIENCE EDUCATION
- WOMEN AND SCIENCE



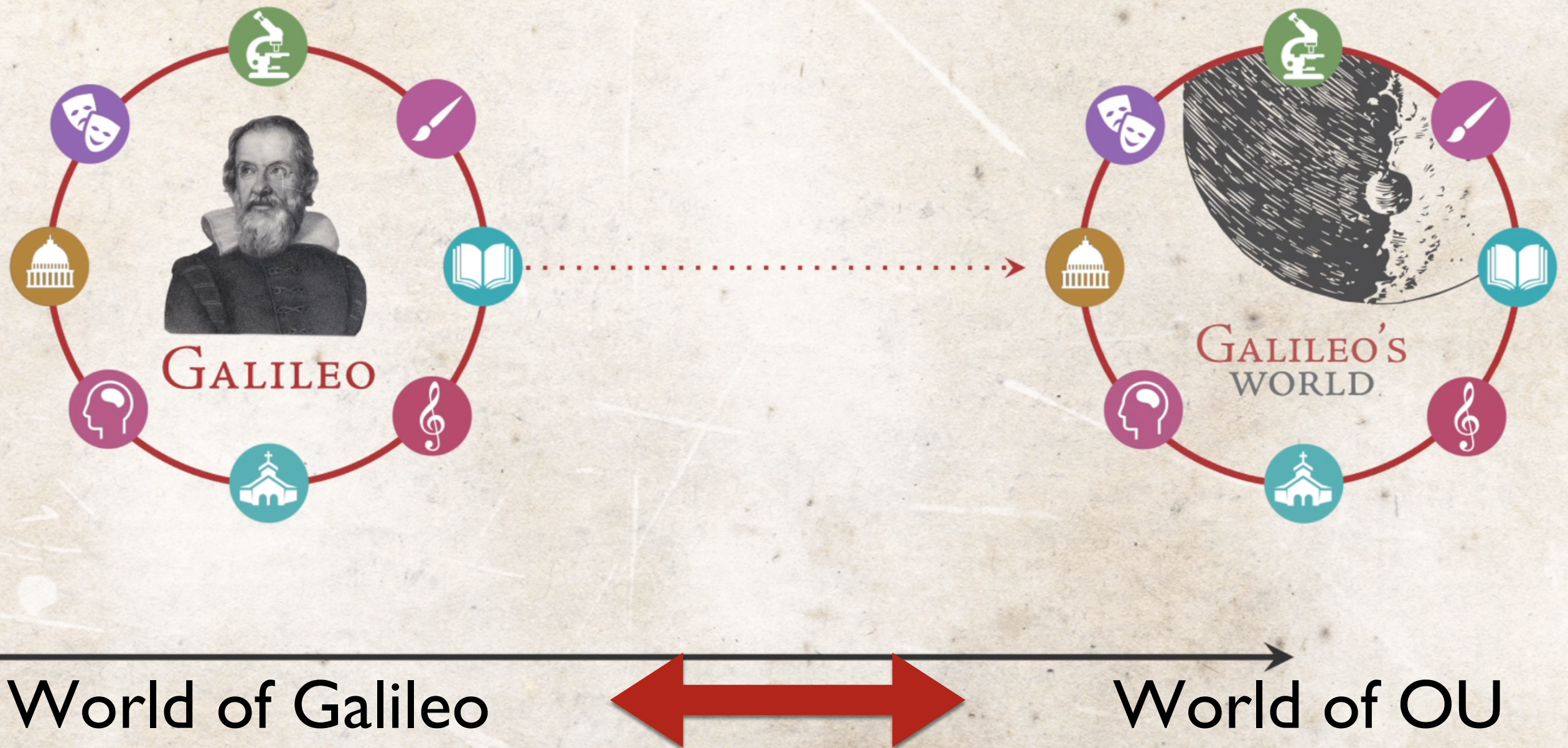
# “TOP 10”

- ART
- ASTRONOMY
- BIOLOGY
- THE BOOK
- CHEMISTRY
- ENGINEERING
- GEOLOGY
- GEOGRAPHY
- HEALTH SCIENCES
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- PHILOSOPHY
- PHYSICS
- RELIGIOUS STUDIES
- SCIENCE
- EDUCATION
- WOMEN AND SCIENCE





# Galileo's World Connections





A grayscale portrait of Galileo Galilei, showing his face with a beard and long hair, looking slightly to the right. The portrait is the background of the slide.

# **Galileo's World and the digital Word**

***Logos, Meaning***



# Participation: Construction of Meaning

## Exhibit-based learning

**350 rare books**

**Dozens of instruments**

**21 galleries, 8 locations**

**Norman, OKC, Tulsa**



# Participation: Construction of Meaning

## Exhibit-based learning

Exploration and discovery

Objects —>

350 rare books

Dozens of instruments

21 galleries, 8 locations

Norman, OKC, Tulsa

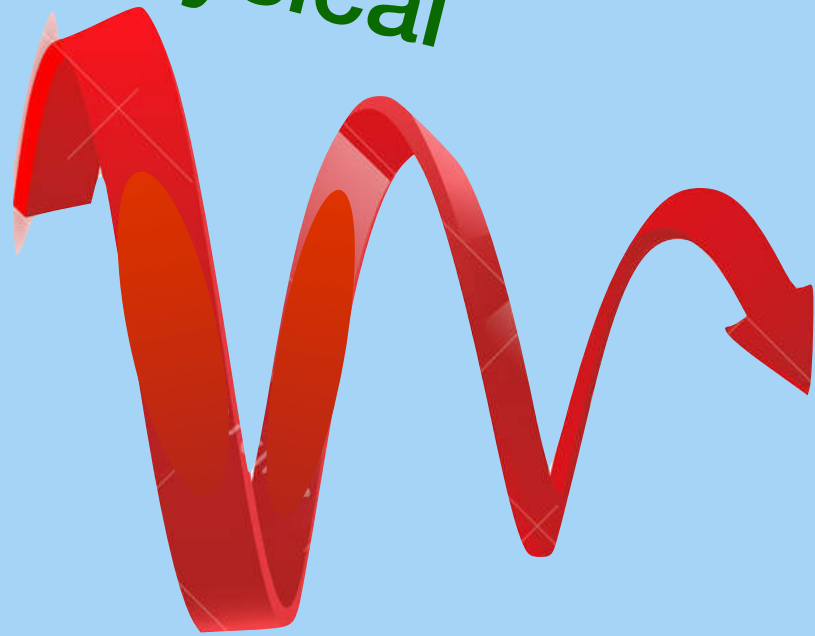




# Participation: Construction of Meaning

Exhibit-based learning

*Physical*



*Virtual*

Synergy



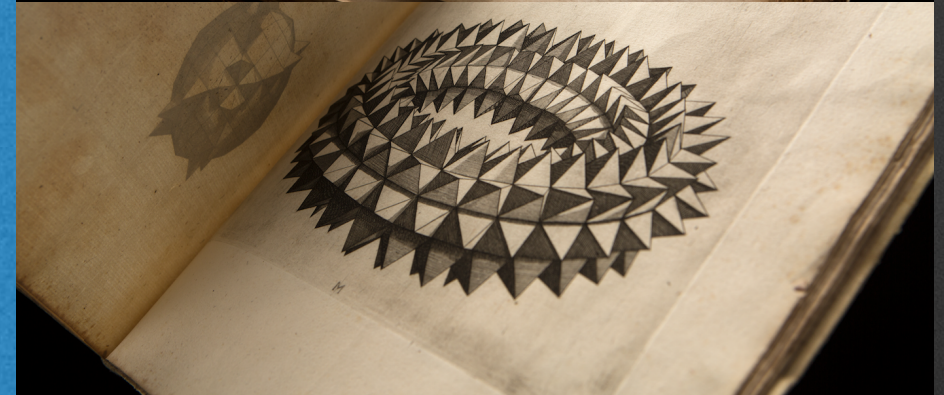
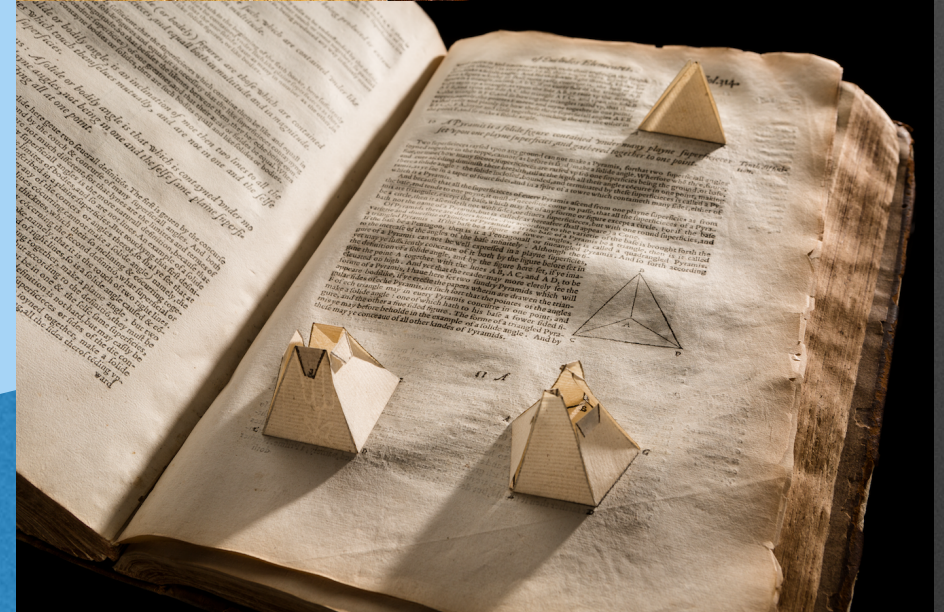
# Participation: Construction of Meaning

Exhibit-based learning

Physical



Virtual – Artistic photographs



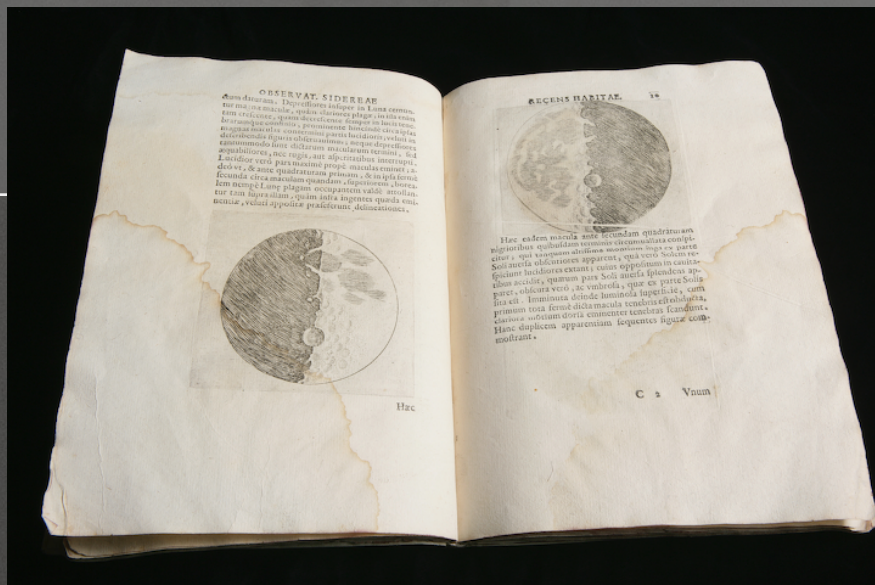


# SYNERGIES: OBJECTS ON DISPLAY

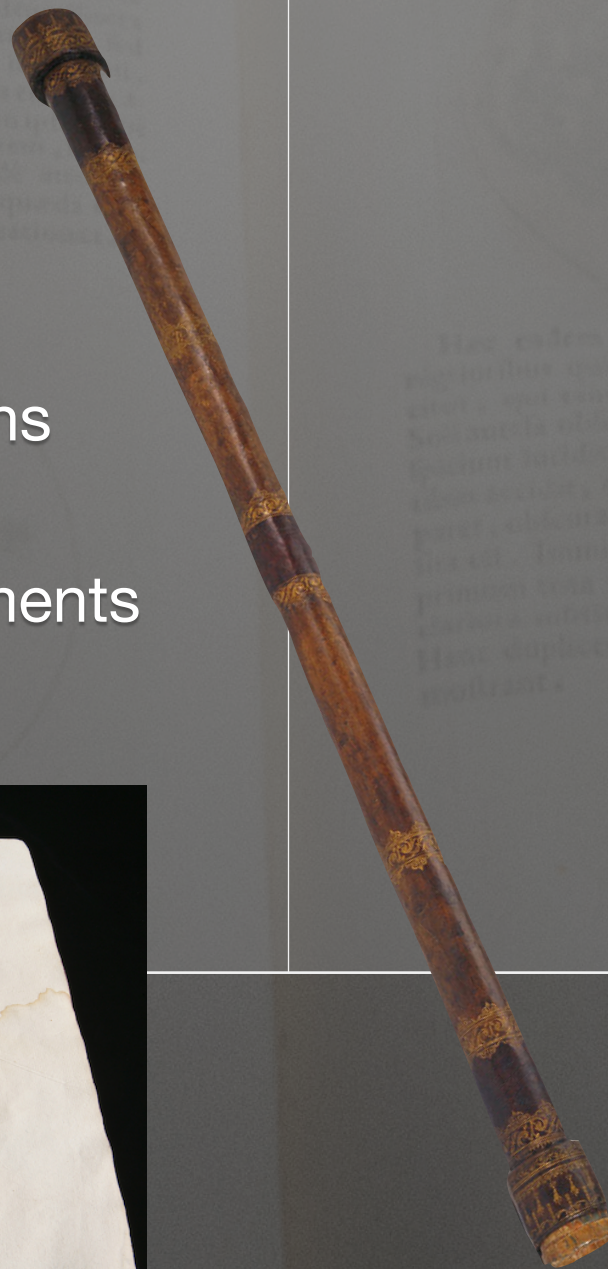
Physical

350 rare books  
from 5 special collections

Dozens of artifacts, instruments



Virtual

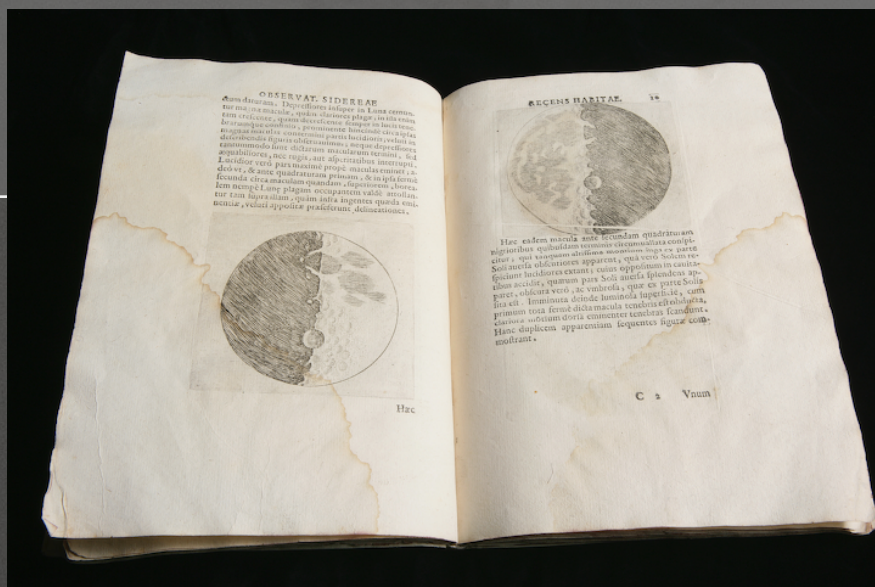




# SYNERGIES: OBJECTS ON DISPLAY

## Physical

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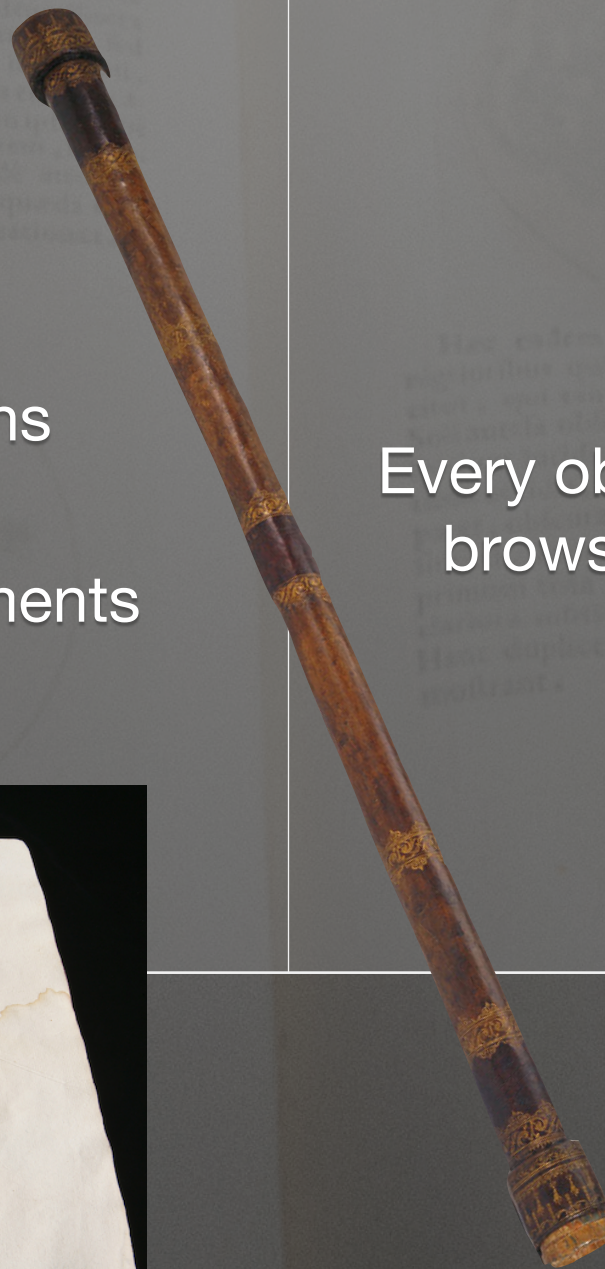
## Virtual

EXHIBIT WEBSITE

[galileo.ou.edu](http://galileo.ou.edu)

Every object on display available for  
browsing in a virtual exhibit site

Led by Twila Camp





# SYNERGIES: OBJECTS ON DISPLAY



Virtual

EXHIBIT WEBSITE

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- Connecting diverse physical locations
- Combining diverse themed galleries
- Sustaining the anniversary exhibit over time
- Drupal platform, Mobile friendly, Internet Archive Book Viewer



# SYNERGIES: OBJECTS ON DISPLAY

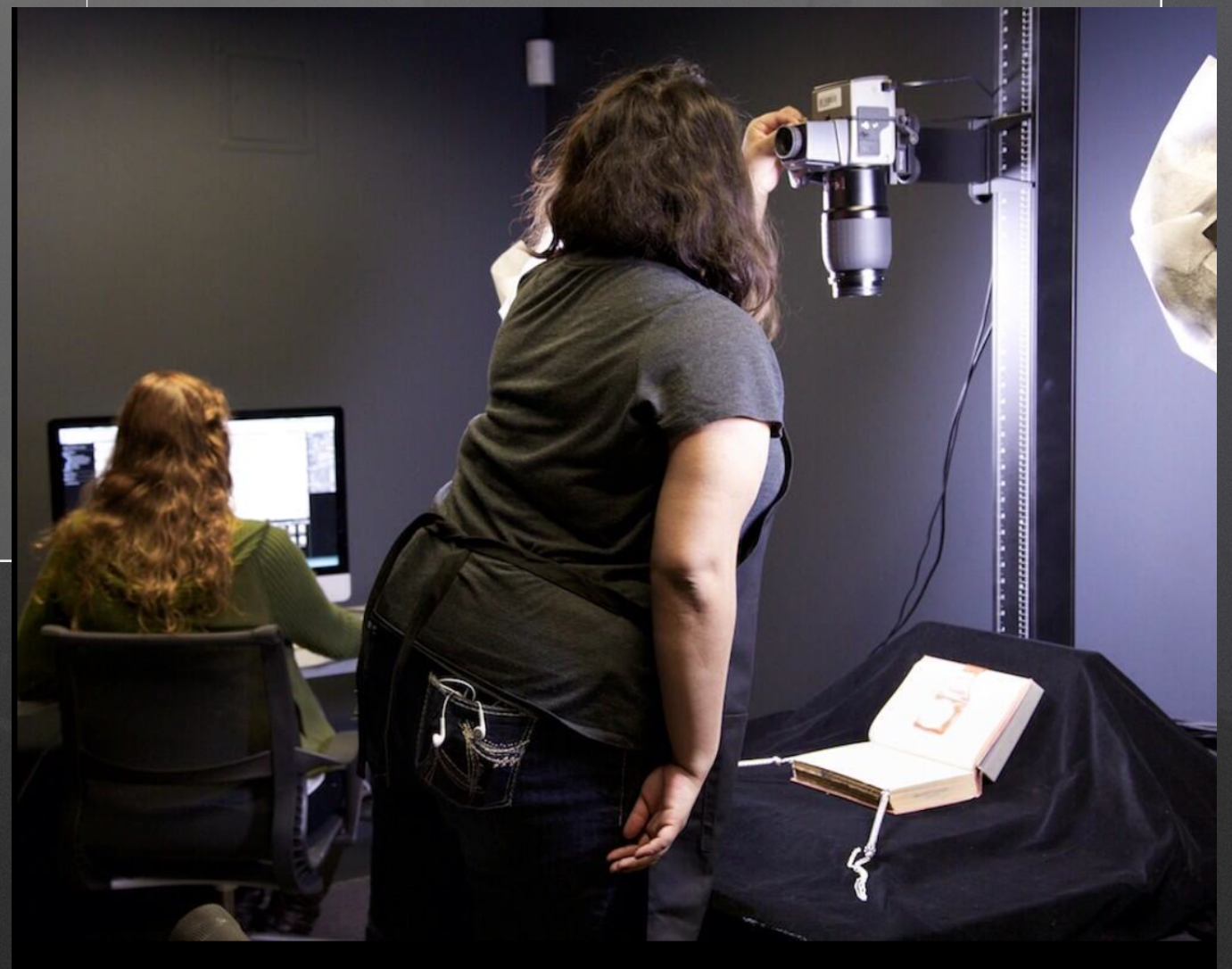
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Virtual

DIGITIZATION LABORATORY





# SYNERGIES: OBJECTS ON DISPLAY

## Physical

350 rare books  
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Dozens of artifacts, instruments

## Virtual

### DIGITIZATION LABORATORY

Every book on display digitized  
in its entirety in high resolution  
with metadata

Led by Barbara Laufersweiler



# SYNERGIES: OBJECTS ON DISPLAY

## Physical

350 rare books  
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Dozens of artifacts, instruments

## Virtual

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Led by Barbara Laufersweiler

- Galileotheka digital library, Museo Galileo (Symposium, Feb 25)



# Participation: Construction of Meaning

Exhibit-based learning

*Exhibit Hall*

Exploration and discovery

Objects —>

*Exhibit Website*

Small pieces... meaningfully joined





# Small Pieces

Event

Activity

Instrument  
model

Artistic  
photograph

Music or video

#galileosworld

@ouhoscollection

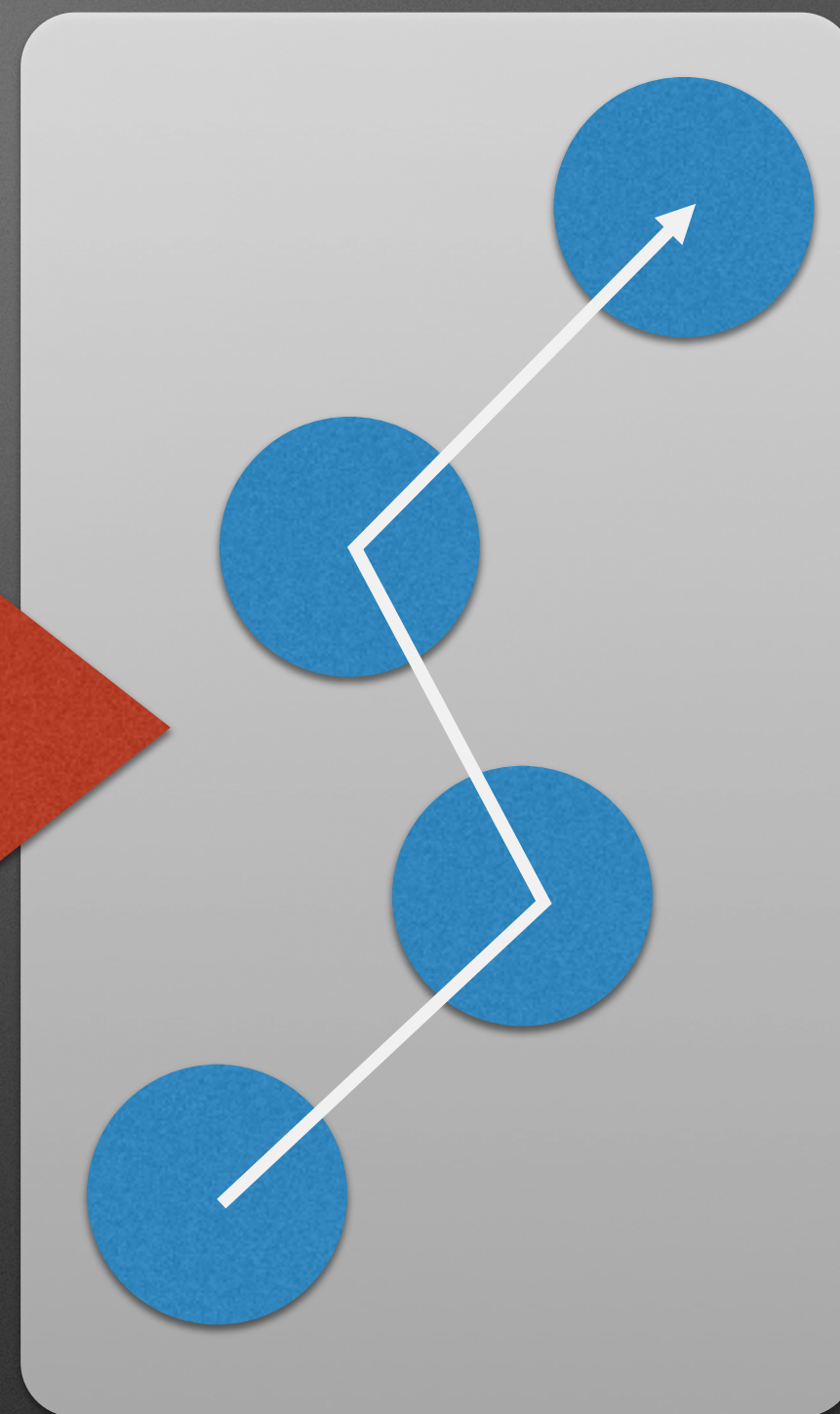
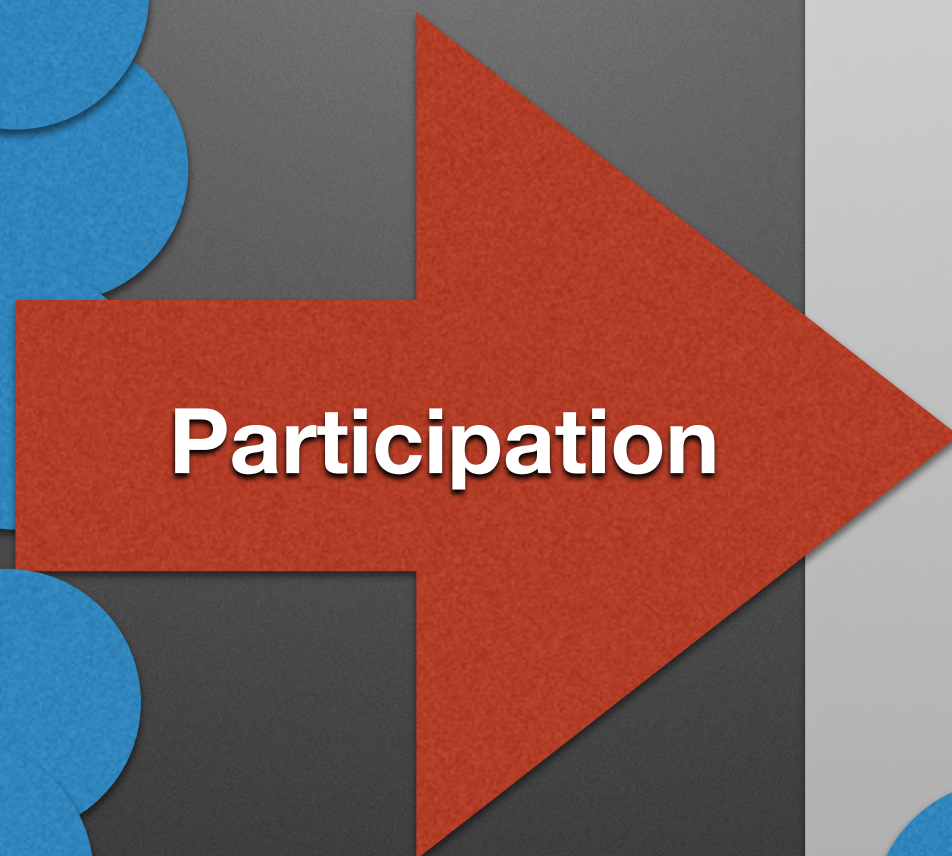
@oulynx



**Construction  
of Meaning**

**Small  
Pieces**

**Participation**





# Participation: Construction of Meaning

Exhibit-based learning

*Exhibit Hall*

Exploration and discovery

Objects —>

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(imagination, collaboration, beauty)



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Exhibit-based learning

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# Participation: Construction of Meaning

## Exhibit-based learning

*Exhibit Hall*

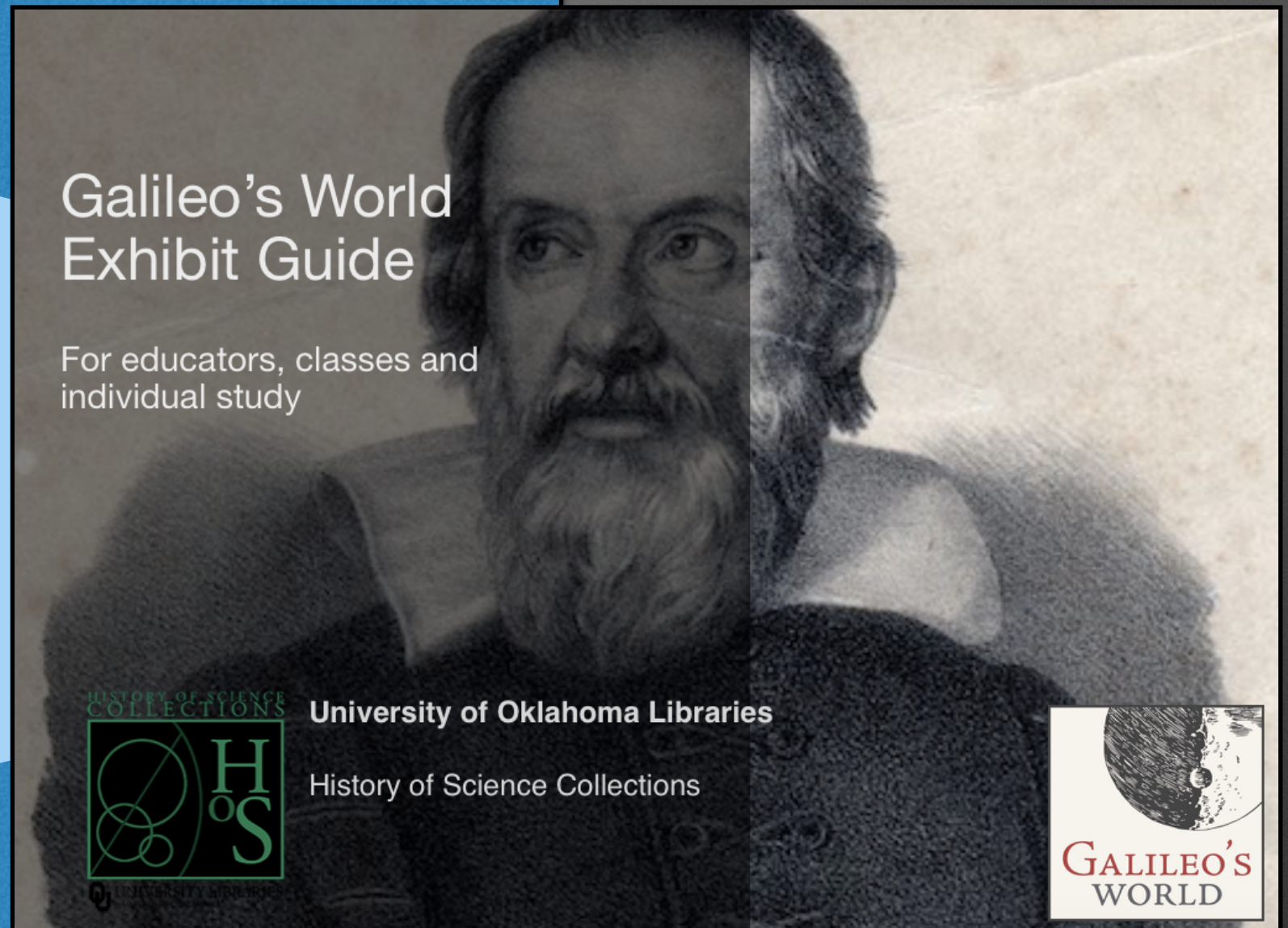
Exploration and discovery

Objects —> Stories

*Exhibit Website*

Small pieces... meaningfully joined

(imagination, collaboration, beauty)





# Galileo's World Exhibit Guide

For educators, classes and  
individual study

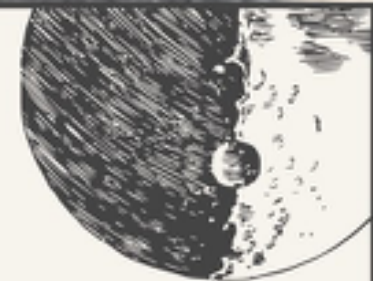
HISTORY OF SCIENCE  
COLLECTIONS



UNIVERSITY LIBRARIES

**University of Oklahoma Libraries**

History of Science Collections



**GALILEO'S  
WORLD**



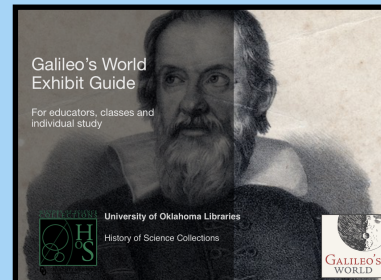
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Exhibit-based learning

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Objects —> Stories



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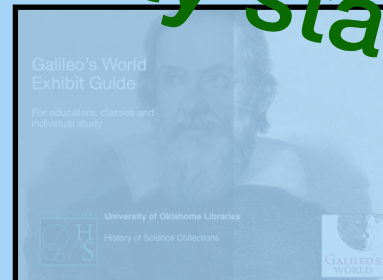
Exhibit-based learning

*Exhibit Hall*

*Activity stations*

Exploration and discovery

Objects —> Stories



*Exhibit Website*

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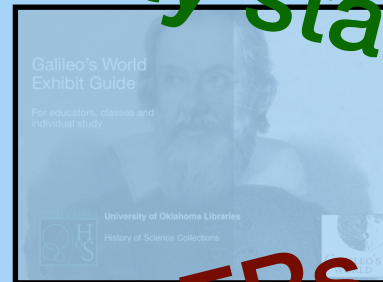
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*Exhibit Hall*

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Objects —> Stories



**OERS**

Open Educational Resources

*Exhibit Website*

Small pieces... meaningfully joined

(imagination, collaboration, beauty)



# AQUARIUS





# Learning Leaflets

## Elisabeth Hevelius Observational Astronomer

Learning Leaflet: Women in Science  
OU Academy of the Lynx  
History of Science Collections  
University of Oklahoma Libraries



Johann and Elisabeth Hevelius, *Firmamentum Sobiescianum sive Uranographia*  
("The Firmament of King Sobieski, or Map of the Heavens"; Gdansk, 1690)

Exhibit: Galileo's World | Gallery: The Sky at Night | No.: 11  
Download learning leaflets at [oulynx.org](http://oulynx.org); remix at OER Commons; read more in the Exhibit Guide (iBookstore).

Can you find the sextants?



### Elisabeth Hevelius: Observational Astronomer

Elisabeth Hevelius, wife of Johann Hevelius, was an astronomer in her own right. They worked together in the observatory of their Gdansk home to measure angular widths and distances with a great sextant, which required two observers at a time. The Sextant was among the new constellations they proposed in *Uranographia* (1690), the most detailed and influential celestial atlas of the 17th century. The *Uranographia* contains 54 beautiful double-page engraved plates of 73 constellations, and 2 oversized folding plates of planispheres.

Tragically, in 1679 their observatory burned. Fire destroyed manuscripts, books and instruments, including the sextant. Johann was 67 years old, and passed away six years later. Later, Elisabeth published the star catalog and celestial star atlas.

The frontispiece shows Johann bringing gifts before a tribunal of great figures in the history of astronomy. These gifts are their proposed new constellations: the shield and sextant he carries, and the animals trailing behind him. Of the 12 constellations they created, 7 are still recognized today.

Kerry Magruder

[oulynx.org](http://oulynx.org)  
[galileo.ou.edu](http://galileo.ou.edu)  
[ouhos.org](http://ouhos.org)

#galileosworld  
@oulynx  
@ouhoscollection





# Elisabeth Hevelius

## Observational Astronomer

Learning Leaflet: Women in Science  
**OU Academy of the Lynx**  
History of Science Collections  
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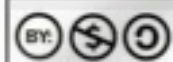
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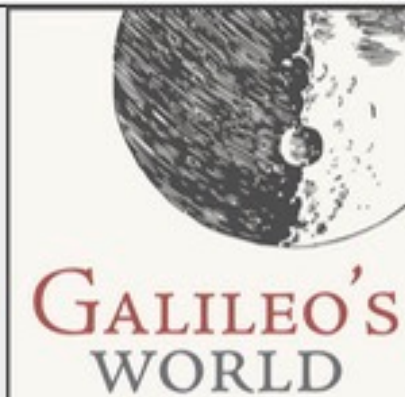
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oulynx.org  
galileo.ou.edu  
ouhos.org

#galileosworld  
@oulynx  
@ouhoscollection



UNIVERSITY LIBRARIES  
UNIVERSITY OF OKLAHOMA



# Learning Leaflet Series

- Iconic Images
- Instruments and Experiments
- Starting Points for discussion
- Primary Source excerpts
- 2-minute stories
- Stand-up activities
- Constellations
- Women in Science

Learning Leaflet: Women in Science  
**OU Academy of the Lynx**  
History of Science Collections  
University of Oklahoma Libraries





# SYNERGIES: EXHIBIT-BASED LEARNING

Physical	Virtual
EXHIBIT HALL K20 Class visits Public group visits	OU ACADEMY OF THE LYNX <a href="http://oulynx.org">oulynx.org</a>
OFF-SITE Classroom visits Presentations	Collaborating in exhibit based learning  Led by Brent Purkapple

- EXHIBIT HALL: Activity Stations for stand-up activities
- EXPLORATION ROOM: for sit-down activities
- HARLOW ROOM: for longer exhibit-related activities





## OPEN EDUCATIONAL RESOURCES (OERs)

- Exhibit Guide (iBookstore)  
for educators, classes and  
individual study
- “Small pieces loosely joined”  
(ShareOK.org)
  - Learning Leaflets
  - Card sets
  - Instrument kits
  - Book discussion guides
  - ...

OU ACADEMY OF THE LYNX  
[oulynx.org](http://oulynx.org)

Collaborating in  
exhibit based learning

Led by Brent Purkapple





# Participation: Construction of Meaning

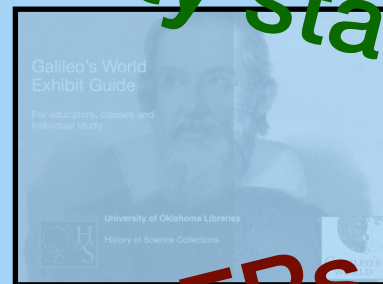
Exhibit-based learning

*Exhibit Hall*

*Activity stations*

Exploration and discovery

Objects —> Stories



**OERS**

Learning leaflets

Exhibit Guide

*Exhibit Website*

Small pieces... meaningfully joined

(imagination, collaboration, beauty)



# Participation: Construction of Meaning

Exhibit-based learning

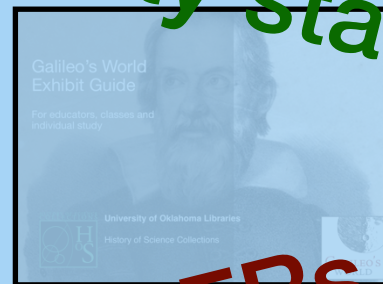
Research

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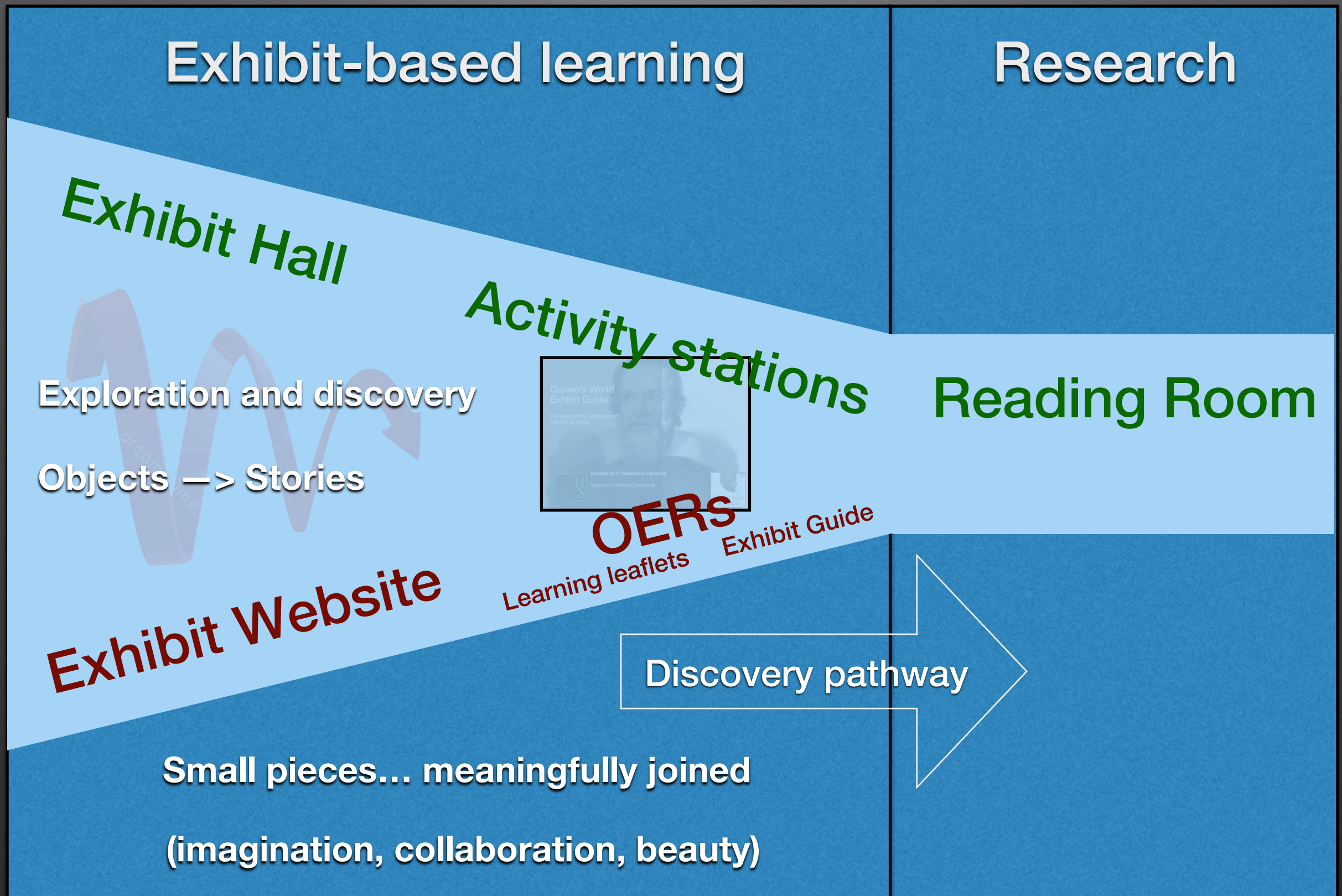
**Exhibit Website**

Small pieces... meaningfully joined

(imagination, collaboration, beauty)

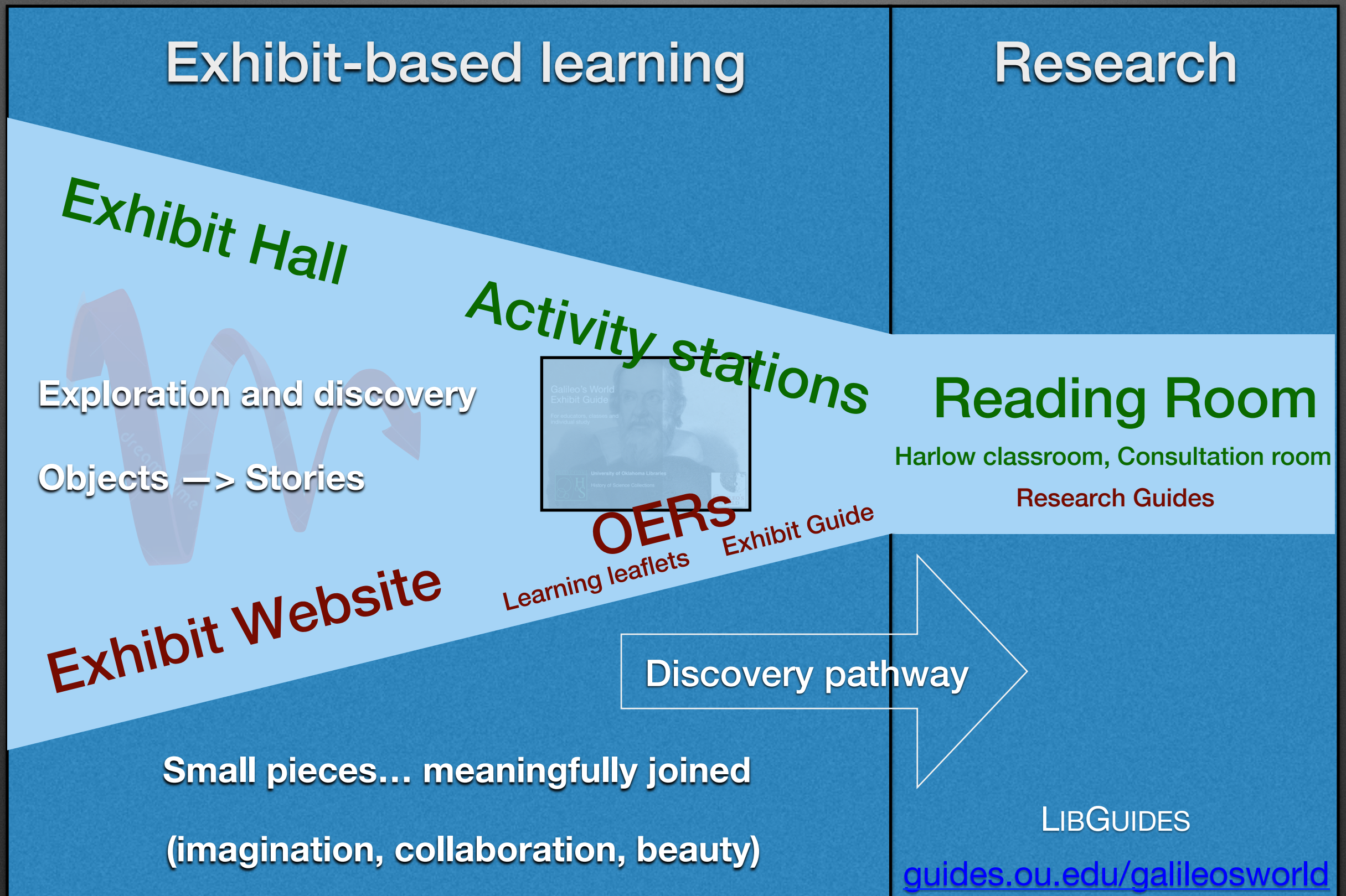


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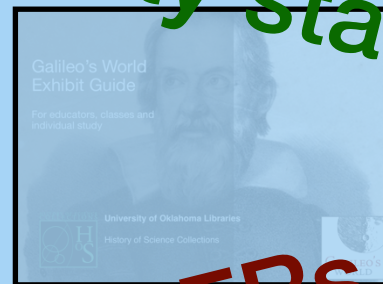
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**Digital library**

**Exhibit Website**

Discovery pathway

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LIBGUIDES

[guides.ou.edu/galileosworld](http://guides.ou.edu/galileosworld)



# SYNERGIES: RESEARCH

## Physical

350 rare books  
from 5 special collections

Dozens of artifacts, instruments

## Virtual

### DIGITAL LIBRARY

Every book on display to be available for  
research in a new Islandora repository

Led by David Corbly

Discovery pathway





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- Interlinked:  
Digital library <—> Exhibit website <—> Library Discover

Coming spring 2016



# Participation: Construction of Meaning

Exhibit-based learning

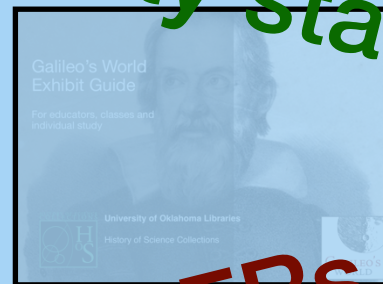
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Discovery pathway

Small pieces... meaningfully joined

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# SYNERGIES: PUBLIC EVENTS

## Physical

Location specific events (e.g., *Orfeo*)

JPL Speakers series (NWC)

Dream course speakers

OU Speakers series (SN,  
with skywatches)

Academic Symposium (Feb 25)

Stadium under the Stars (Sept)

etc.





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etc.

## Virtual

GALILEO'S WORLD EVENTS CALENDAR

[galileo.ou.edu/events](http://galileo.ou.edu/events)

Many events being filmed  
for future viewing

Led by Chelsea Julian



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Led by Chelsea Julian

- #galileosworld, #ouhoscollection, #oulynx



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## Virtual

NAVIGATION APP

Real-time, on-site notifications

Led by Carl Grant, Matt Cook





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## Virtual

NAVIGATION APP

Real-time, on-site notifications

Led by Carl Grant, Matt Cook

- Integrates Exhibit Website content at specific location
- Navigation directions to next desired site



# Galileo's World and the digital Word

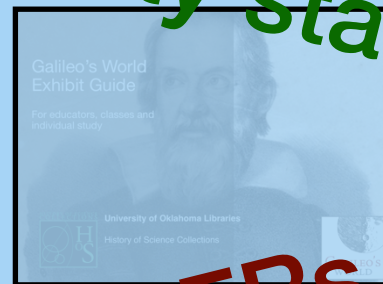
"An Exhibition without Walls"

**Exhibit Hall**

Exploration and discovery

Objects —> Stories

**Activity stations**



**OERS**

Learning leaflets

Exhibit Guide

**Reading Room**

**Digital library**

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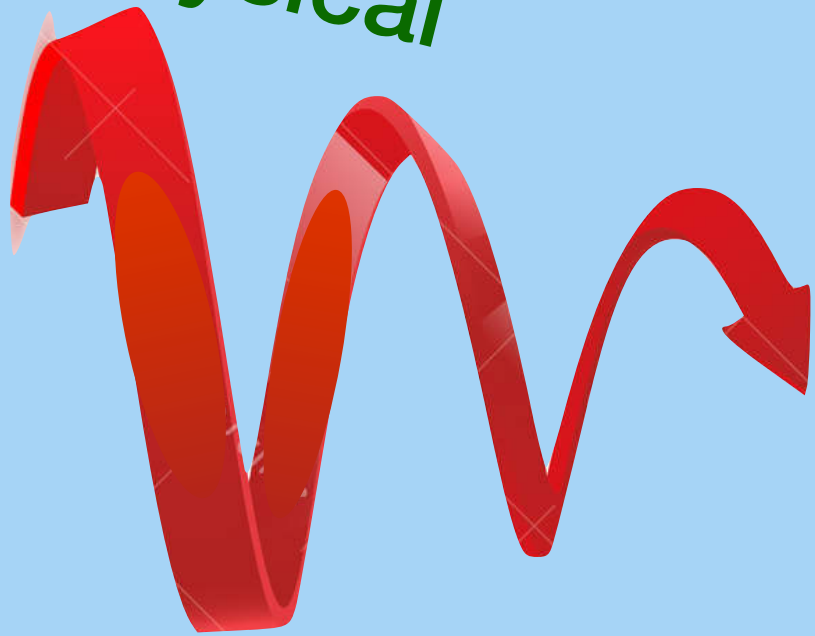
Small pieces... meaningfully joined

(imagination, collaboration, beauty)



# Galileo's World and the digital Word

Physical



Virtual

Synergy

Reading Room  
Digital library

Discovery pathway

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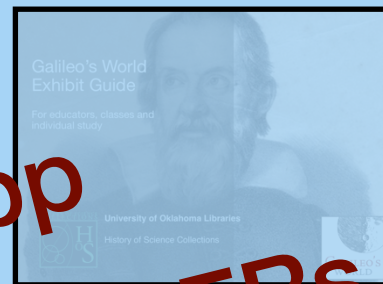
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# Galileo's World and the digital Word

1. Platforms, not one-offs



Digital library

DigiLab  
Exhibit Website

Nav App

OERS  
Learning leaflets  
Exhibit Guide



# Galileo's World and the digital Word

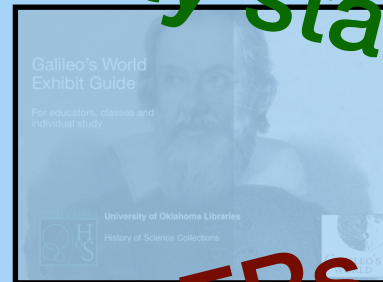
1. Platforms, not one-offs

**Exhibit Hall**

Exploration and discovery

Objects —> Stories

**Activity stations**



**OERS**

Learning leaflets

Exhibit Guide

**Reading Room**

**Digital library**

**Exhibit Website**

2. Participation =  
Construction of Meaning

*Logos*

Small pieces... meaningfully joined

(imagination, collaboration, beauty)