

# Web3D Consortium Cultural Heritage WG Workshop

*Organizers:*

*Nicholas F. Polys, (Virginia Tech)*

*Dieter Fellner (Fraunhofer IGD & TU Darmstadt),*

# Outline

- Introduction & Opportunities: organizers
- Application Requirements:
  - Vince Rossi, Smithsonian
  - Athanasios Malamos, MediaLab CR
  - Pedro Martinez & Gabi Martin, Fraunhofer IGD
  - Matt Adcock, CSIRO
- Scoping the challenge for Web3D graphics community
- Call to Action

# Steve Miller was Right!

- “Time keeps on slippin... into the future”
  - Memories fade
  - Materials degrade
  - Political factors upheaval /access
- Preservation often comes at the expense of access

# David Byrne was right!

“Same as it ever was...  
Look where my hand was  
Time isn't holding up  
Time is an asterisk  
Same as it ever was... “

*Once in a Lifetime*

# Digital Cultural Heritage

Millions of cultural heritage artifacts populate our museums and about 90% still await discovery in museum archives.

3D Digital models can provide:

- Arbitrary availability and concurrent access to digital surrogates of cultural heritage artifacts for art historians and scientists:
  - Use of digital surrogates in cultural heritage institutions for exhibition planning, documentation and acquisition planning.
  - Virtual presentation (combined with new forms of presentation technologies, such as hybrid exhibitions) as a means to increase attractiveness
- Physical surrogates based on digital 3D models:
  - Substitute loaning of cultural heritage artifacts by digital surrogates avoiding damage from transport, insurance fees and legal issues.
  - Reusability of historically correct 3D models in gaming and film industry as well as for architectural reconstruction.

# Game Changers

- Scanning Technology – increase resolution, accuracy, coverage
- Processing Tools – Meshlab, Polytrans, 3DS exporters, Geomagik, Rawkee,
- Publication platforms for industrial strength immersion (X3D) and/or web-wide interactive 3D (HTML5+X3DOM)
- 3D Printers increase in capability, decrease in cost

# Challenges

- Scan data size
  - Meshes
  - Texture maps
  - volumes
  - ... other material descriptions
- Processing to polygon and low polygon models
  - Many techniques in Meshlab
  - Work better or worse depending on the data

# Challenges II

- Durable collections
  - Not subject to proprietary whims, royalties
  - Use ISO standards for international recognition
- Accessible collections
- Interoperable collections:
  - CIDOC ontologies – populating and integrating metadata into the scene graph
  - Shape database Search



# Challenges III

- Portable collections
  - Not bound to specific platforms - reproducible

Can we find best practice?

- Workflows, portals
- Lossiness and processing ,  
Visual fidelity in delivery
- Open tools and reproducible presentations

# Pedro Santos

- CultLab3D

# Athanasios Malamos

- Media Lab: Crete, Greece

# Vince Rossi

- Smithsonian Institute

# Natural Heritage

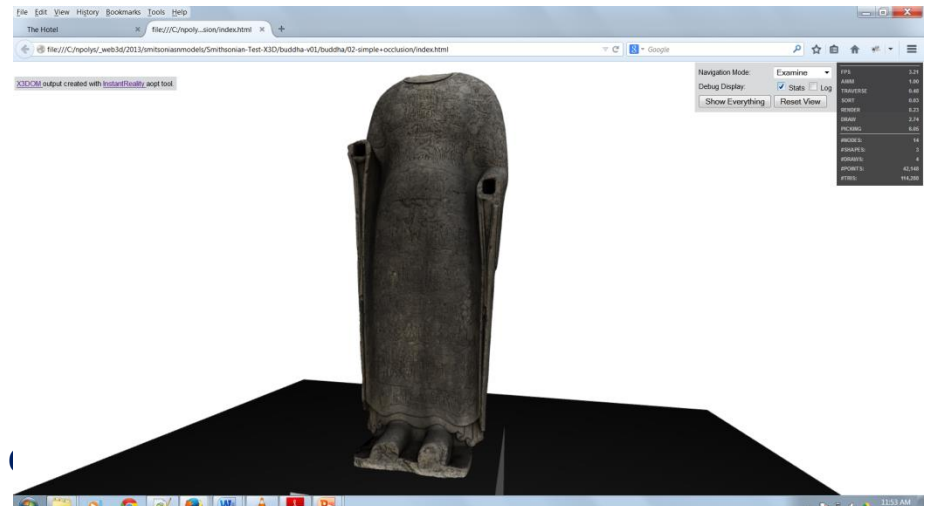
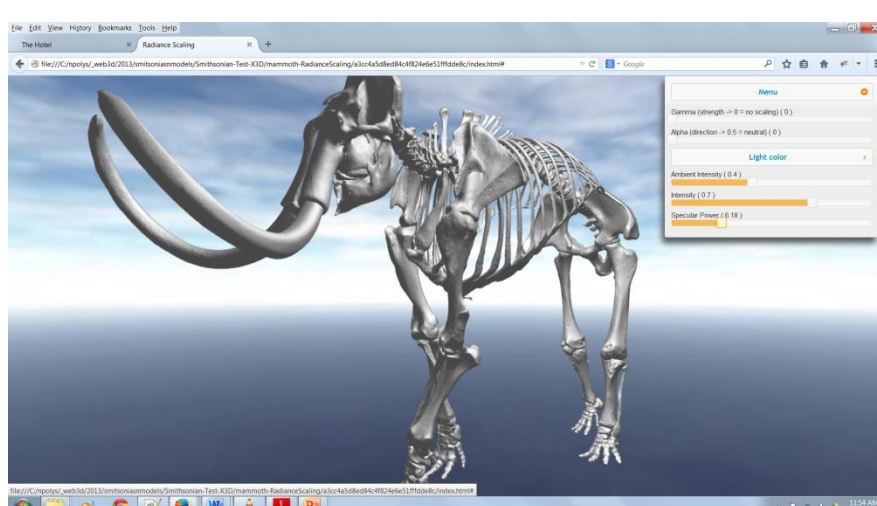
- What requirements are common here?
- What makes these applications or communities different?
  - See Matt Adcock' Web3D poster on digital entomology

# Communities

- Museums
- Anthropology
- ...
- What can Web3D do?
  - Where is low hanging fruit ?
  - Can we articulate a ‘grand challenge’?

## Digital Heritage Examples

- Cosmic Buddha
- Mammoth w/ interactive texture control
- Using models to test new X3D compression methods and metadata schemes



# Web3D

Vehicle for the community to develop and drive standards and recommendations

- Special Interest Groups
- Working Groups



# Charter and Scoping Discussion

- Gather Critical mass:
  - Listerve
  - Wiki
- Reflect
- Participate in setting our direction:
  - All comments welcome!

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