

UPCOMING

MAYAN ARCHEOLOGICAL SIMULATIONS

IDIA Lab will be launching two new simulations next month built in CryEngine / Blue Mars of two important Mayan archeological sites with celestial alignments. Izapa, the origin of the Mayan Long Count which renewed on Dec. 21, 2012 and the Chichen Itza Ball Court.

BSU REDGRID VERSION 2.0

REDgrid <http://bit.ly/112vmKa>, a BSU created and self-hosted virtual world for teaching, learning and research, has been recently redesigned. The new system allows participants to manage accounts through a web portal. For access to REDgrid please contact idualab@bsu.edu.

MELLON CELESTIAL SENSOR

IDIA Lab has been contracted by the Mellon Foundation's Humanities Virtual World Consortium to develop a virtual sensor that tracks and logs potential ancient celestial alignments. Researchers can quickly test alignment theories using NASA/JPL data.

NEWS

Hybrid Design Technologies, through the Office of Information Technology is an evolutionary extension of the IDIA Lab's innovation in virtual and hybrid environments. This newsletter includes updates on IDIA Lab current projects including our Virtual Stonehenge animation featured on the premiere episode of the History Channel's *The Universe* series; the launch of Virtual Hadrian's Villa at the Harvard Center for Hellenic Studies in Washington, D.C.; contracts with the Mellon Foundation; the launch of several digital heritage simulations in Blue Mars; and our Virtual Meridian of Augustus which was presented at the Vatican.



Still from *The Universe*. IDIA Lab, Ball State University. 2014



Still from *The Universe*. IDIA Lab, Ball State University. 2014

BSU IDIA LAB'S VIRTUAL STONEHENGE ON THE HISTORY CHANNEL

The History Channel visited Ball State University to tape an episode of their series, *The Universe*. IDIA Lab's virtual simulation and HD animations of the UNESCO World Heritage site of Stonehenge were prominently featured - showcasing the various stages of construction and celestial alignments in our interactive virtual simulator. The project incorporates IDIA's CelestialEngine simulator that uses data from the NASA JPL Horizons System to accurately position the sun, moon and visible planets. The lab's technology compensates for changes in year, the Earth's rotation and other forces - providing accurate observations of the sky as it would have appeared thousands of years ago at Stonehenge.

The Universe, Ancient Mysteries Solved: Stonehenge

<http://bit.ly/1jUVVfp>

Visit Virtual Stonehenge in Blue Mars: <http://bit.ly/R0wEFk>

The 3-D computer simulation of Stonehenge, created by Ball State's Institute for Digital Intermedia Arts allowed producers of *The Universe* to demonstrate how the ancient monument may have been used to track the movement of celestial objects.

In addition to a painstaking re-creation of the monument itself, the simulation also uses NASA coordinate data to model the positions of the sun and moon for that location on virtually any date in history.

Animation from IDIA's Virtual Stonehenge had been featured over the summer in the popular long-running BBC television series, *The Sky at Night*, and caught the eye of the History Channel. A producer for *The Universe* then called John Fillwalk, director of IDIA and arrangements for a video shoot were finalized. The History Channel also contracted IDIA to produce High Definition 3D animations of Stonehenge. The lab used a specialized rendering software package called *Vue*, which reproduces detailed and realistic simulated landscapes.

The 3D simulation is highly accurate, using archaeological surveys from the monument, actual photographic textures of the stones, and precise measurements to recreate each phase of the heritage site. To simulate the phased development of Stonehenge over time, Fillwalk enlisted the expertise of Michael Parker Pearson, a renowned British archaeologist who has studied the site for years and is one of the world's foremost authorities on the monument.

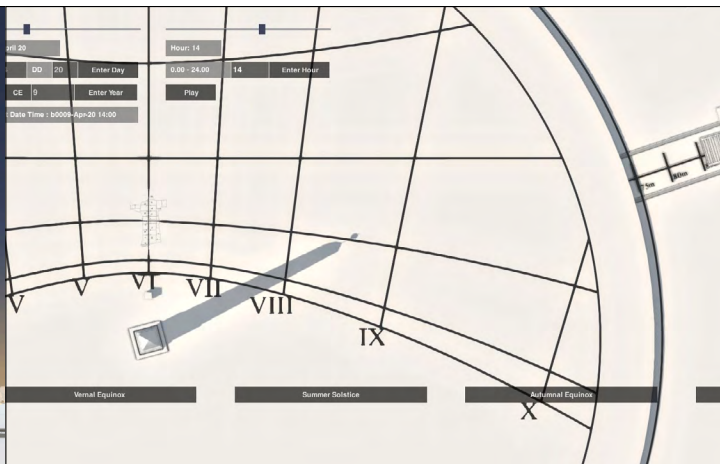
BSU Press release on Inside Indiana : <http://bit.ly/1rowMpj>



Still from *The Universe*. IDIA Lab, Ball State University. 2014



Still from *The Universe*. IDIA Lab, Ball State University. 2014



Screenshots from Virtual Meridian Augusti. IDIA Lab, Ball State University. 2014

VIRTUAL ROMAN SIMULATION PRESENTED AT THE VATICAN'S PONTIFICAL ACADEMY OF ARCHEOLOGY

IDIA Lab's virtual simulation of an ancient Roman sun calendar is helping archaeologists examine long-held theories and reach new understandings about its design and function. A paper authored by Bernard Frischer, Department of Informatics, Indiana University and John Fillwalk, Director, Institute for Digital Intermedia Arts, Ball State University was formally presented at a palace of the Vatican in Rome, Italy. The paper outlined preliminary results from the simulation's analysis of the relationship of the obelisk, meridian, and Ara Pacis of in the Northern Campus Martius.

www.macro.it
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MAGGIO - IN CITTÀ - DI - PHOTOLIA

Letteratura
La storia di Mefistofele nel nuovo libro di Giulio Gianini p. 17

Televisione
"Anni spezzati" via alla trilogia: Solferino e Calabresi di Tullio Gregori p. 19

Arte
Da Vermeer a Liberty: ecco le migliori mostre dell'anno p. 25

Letteratura Gusto Ambiente Società Cinema Viaggi Architettura Teatro
Arte Moda Tecnologia Musica Scienza Archeologia Televisione Salute

Grazie al database dell'Horizon System della Nasa, capace di fornire informazioni sugli azimut di ogni epoca storica ricostruito l'allineamento solare della meridiana di Augusto, ora a Montecitorio, con l'Ara Pacis. Un evento straordinario che accadeva ogni anno il 9 ottobre, giorno dedicato ad Apollo Palatino. Ovvero il dio più importante per l'imperatore

Svelati i segreti dell'obelisco

LA SCOPERTA

Per la prima volta in un'opera di architettura sono stati presentati i disegni originali della Nasa che hanno permesso di simulare il movimento dell'obelisco di Augusto e della Ara Pacis. In questo modo, grazie ad un sistema di simulazione 3D, è stato possibile verificare, per la prima volta, se l'obelisco di Augusto fosse allineato con la meridiana di Augusto. Il risultato è stato che l'obelisco di Augusto è allineato con la meridiana di Augusto.

LA FESTA

Per una celebrazione straordinaria si è tenuto il 9 ottobre, giorno dedicato ad Apollo Palatino. Ovvero il dio più importante per l'imperatore

LA POSIZIONE
Nella ricostruzione virtuale l'allineamento tra i monumenti

LA FESTA
In questo giorno i monumenti colorati ed ora a Campo Marzio

Un'obliquità di 36,5 gradi...
L'obelisco di Augusto...
La meridiana di Augusto...

+ +

The story was picked up by Reuters, LiveScience, History, Gizmodo, Slashdot, Discovery, the Huffington Post and NBC News.

An enduring mystery of archaeology involving the Campus of Mars in ancient Rome is being quietly unraveled in Indiana, thanks to a sophisticated computer simulation created by Ball State University digital artists. The simulation, crafted by the Institute for Digital Intermedia Arts (IDIA) and commissioned by Indiana University's School of Informatics and Computing, re-creates the ancient site built around 9 B.C.E. for the Emperor Augustus just outside the city walls of ancient Rome.

By integrating precise NASA historical data on the movements of the sun with archaeological surveys of the site, researchers examined suspected solar alignments involving structures that were part of the structure. Among other things the simulation looks at the relationship between the Ara Pacis (or Altar of Peace) and a nearby obelisk.

Archaeologists have been unable to research that alignment in real life because the Campus of Mars no longer exists in its original form. What then was the surface of the campus now lies roughly 20 feet below the topsoil of today's Rome — a segment of pavement has been excavated and, in fact, lies in the basement of a building that now sits atop the original location.

Pontifical Academy of Archeology

<http://bit.ly/1rowhvC>

<http://bit.ly/1jUUzdt>

BSU Press release:

<http://bit.ly/1ptfhZx>

Il Messaggero. January 6, 2014



Screenshots from Virtual Hadrian's Villa. IDIA Lab, Ball State University. 2014

VIRTUAL HADRIAN'S VILLA LAUNCHED AT HARVARD

IDIA Lab designed a virtual simulation of the villa of the Roman Emperor Hadrian, which is a UNESCO World Heritage site located outside of Rome in Tivoli, Italy. This project has been produced in collaboration with the Virtual World Heritage Laboratory (VWHL) at Indiana University (IU), directed by Dr. Bernard Frischer and funded by the National Science Foundation. This large-scale recreation virtually interprets the entire villa complex in consultation with the world's foremost Villa scholars. The project launched at the Harvard Center for Hellenic Studies in Washington and the project has been featured by Reuters, Khan Academy and several other news outlets. Web browser versions of the Hadrian's Villa project are funded through a grant from the Mellon Foundation.

Hadrian's Villa Canopus Virtual World: <http://bit.ly/1nIUnB1>

Digital Hadrian's Villa Project web site: <http://bit.ly/1nrDQUG>

Khan Academy Walkthrough of Virtual Hadrian's Villa: http://youtu.be/Nu_6X04EGHk

Virtual Hadrian's Villa Walkthrough: <http://youtu.be/tk7B012q7Eg>



VIRTUAL ROMAN PANTHEON IN BLUE MARS / CRYENGINE

The Pantheon is the best-preserved architectural monument of ancient Rome. This simulation by BSU's IDIA Lab represents the Pantheon and its surrounds as it may have appeared in 320 AD. Visitors to this Blue Mars / CryEngine simulation can tour the vicinity, learning about the history, function and solar alignments through an interactive heads-up-display created for this project. The project includes new solar simulation software calibrated to the buildings location and year, a greeter bot system and a new reactive Non-Player-Character system developed in partnership between IDIA Lab and Avatar Reality. <http://bit.ly/1hiX777>



IDIA LAB WINS BRONZE MEDAL AT GERMAN GAME EXPO

IDIA Lab's Virtual Pantheon/Kinect project in Blue Mars and our occupational simulation for Alzheimer's patients won the Bronze Medal at the iENA International Trade Fair for Ideas, Inventions and New Products in Nuremberg, Germany. The Virtual Pantheon Project in Blue Mars <http://bit.ly/18cfDKu> is a multi-user simulation of the Roman Pantheon and its surroundings as it might have existed in 320AD. The project can be navigated via MS Kinect sensor directly in Blue Mars. The occupational therapy project employed the Oculus Rift VR headset and Razer Hydra controllers. <http://bit.ly/1rmSz08>



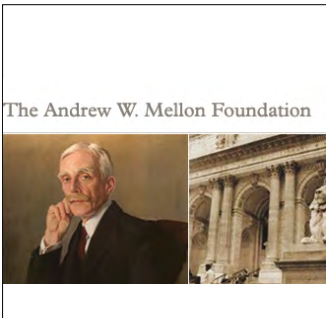
TEMPLE OF ARTEMIS: WONDER OF THE ANCIENT WORLD

IDIA Lab was contracted by digital humanities scholars at UCLA to design and build a virtual simulation of the Temple of Artemis, one of the Wonders of the Ancient World. This massive Greek temple, four times the size of the Parthenon, lies in ruin in present-day Turkey. This simulation incorporates our CelestialEngine with accurately positions both the sun and moon using a site's latitude, longitude, altitude and year via NASA JPL data. This particular simulation studies whether an opening in the temple's portico allowed moonlight to illuminate the statue of Artemis on her feast day. <http://bit.ly/1ig8kah>



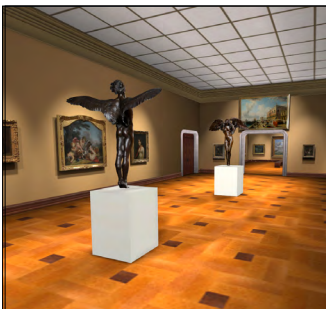
ELSEVIER VIRTUAL NURSING JOURNAL ARTICLE

Virtual Simulations across Curriculum Prepare Nursing Students for Patient Interviews, by Linda Sweigart, Marsha Burden, Kay Hodson Carlton, and John Fillwalk was published in the Elsevier Journal *Clinical Simulation In Nursing*, March 2014. The article outlined a multiyear evolution of the use of virtual simulations to improve communication and assessment skills of pre-licensure baccalaureate nursing students. The virtual clinic employed student nurse and patient avatars providing the setting for multicultural, multigenerational case studies. <http://bit.ly/ZXL7M5>



MELLON FOUNDATION VIRTUAL HUMANITIES PLATFORM

BSU's Hybrid Design Technology and IDIA Lab was contracted by the Mellon Foundation Humanities Virtual World Consortium to design and develop a major open source virtual world platform for Digital Humanities and Cultural Heritage projects. The consortium – comprised of Kings College, London; UCLA; the University of Virginia and Trinity College, Dublin – turned to the expertise of BSU's HDT to create this innovative digital heritage simulation platform that leverages new modes of teaching and learning in immersive environments. <http://bit.ly/113eABL>



UNREAL GAME ENGINE MMO

IDIA Lab is now a developer for Avaya's Massive Multiuser Online environment, *Avaya Live Engage* – a cloud based virtual world for training, learning and collaboration. *Engage* is experienced within a web browser using the Unreal game engine and employs rich media and communication technologies such as spatialized audio, whiteboards, presentations, video, file sharing, webcam, screen-sharing and document editing. This flexible and scalable environment can lower capital and operating costs in facilitating small to large group experiences. <http://avayalive.com/Engage/>

TWEETS

- Blackboard Webinar Integrating Virtual Worlds Within Blackboard Learn and CourseSites <http://bit.ly/1e5PFqH>
- Photogrammetry sculptures employing Photoscan 3D <http://bit.ly/P4C2Tk>
- IDIA designed virtual collaboration and presentation screens <http://t.co/iE500x5ez0>
- Use your phone as a remote game controller with IDIA designed project for Unity <http://bit.ly/1cxMI7t>
- IDIA designed controller for Arduino - control light and sound directly from your phone! <http://bit.ly/1idADIR>
- IDIA showing new iPad Augmented Reality app at Educause Chicago @EDUCAUSEProfDev Mar 4 #EConnect14
- IDIA Lab prototyping new interactive input system from Razer for use with Oculus Rift
- IDIA Lab presented our virtual archeology projects at Digital Heritage 2013 in Marseilles, France

About HDT and IDIA

Hybrid Design Technologies and the Institute for Digital Intermedia Arts at Ball State University engages designers and scholars in exploring the intersections between the arts, science and technology. This interdisciplinary new media initiative investigates virtual reality, human computer interaction, visualization and 3D simulation. The labs develop projects in partnership with our international clients – connecting students to high-profile immersive investigations at the forefront of emergent media design and learning.