# The 2014-2015 DDI Call for Proposals: Funding Opportunities for Faculty to Explore New & Emerging Instructional Technologies

The Duke Digital Initiative (DDI) is an ongoing program to help advance awareness and use of new and emerging technologies in support of teaching and learning at Duke.

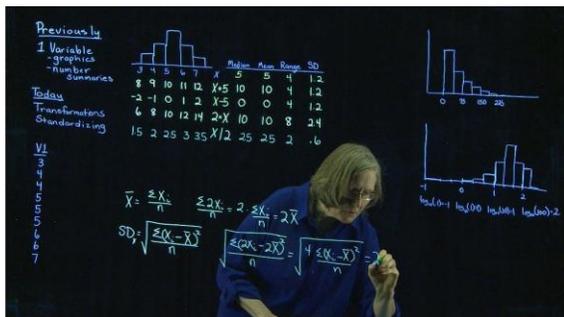*2014-2015 DDI Program Focus Areas:*

1. Support for faculty exploration of
   a. educational video production (specifically, using Duke's lightboard),
   b. maker technologies (specifically, 3D printing),
   c. wearable technology (specifically, Google Glass) and
   d. gaming (specifically, repurposing games for education),
2. support for faculty to attend innovative technology conferences, and
3. awards to support faculty interests in the use of other new and emerging technologies for teaching and learning.

# 1. 2014-2015 Areas of Focus

## 1A. Educational Video

**The Lightboard**

The lightboard is a glass surface that you can write or draw on while facing the camera during a video recording. In this way, faculty can face their "audience" while writing on the board (see the photograph below). Lightboards have been primarily used so far in science and math disciplines. While we are happy to receive proposals from those disciplines, we especially welcome proposals to explore its use in the humanities and social sciences. Recording sessions using the lightboard take place in the Duke Media Services (DMS) studio in the basement of the Bryan Center.



**Dalene Stangl uses the lightboard for statistics lectures.**

**Faculty whose lightboard proposals are accepted** will receive funding to produce *up to* 10 hours of finished video, including studio time and editing support by Duke Media Services (DMS).

**Open Proposals**

*We also welcome your proposals for other **educational video explorations** such as the use of high resolution 4k video, 3D video and other emerging video technologies.*

**Information Resources**
- Example lightboard use by Duke statistics professor and student:
  https://www.youtube.com/watch?v=ANbBenxdi8I&feature=youtu.be
- "Applying the Science of Learning: Evidence-Based Principles for the Design of Multimedia Instruction." *American Psychologist*, Vol 63(8), Nov, 2008. pp. 760-769. http://education.ucf.edu/rtp3/docs/RTP3_Mayer_Article_Applying_the_Science_of_Learning.pdf (Available through the Duke Libraries full-text collection.)

# 1B. Maker Technologies

Maker technologies enable learning-through-doing, usually in a social environment. Technologies may be new or old. (Metalworkers and woodworkers are makers, for example.) The maker movement or culture emphasizes creative use of technologies and tools.

**3D Printing**

3D printing technologies allow you to create ("print") a physical 3D object from a 3D model (computer file). 3D models are created using modeling software such as Sketchup or Blender or by scanning a physical object with a 3D scanner. Although engineering disciplines have been using 3D printers for prototyping since the 1980s, 3D printing has recently become more feasible on a wider-scale as costs have decreased and new printer models have emerged. We especially encourage faculty in disciplines that have not traditionally used 3D printing to submit proposals exploring the use of 3D printing in their teaching.

At Duke, 3D printers (http://oit.duke.edu/comp-print/labs/mps/#mpswestmakerspace) are available in the Multimedia Project Studio for use by the Duke community.
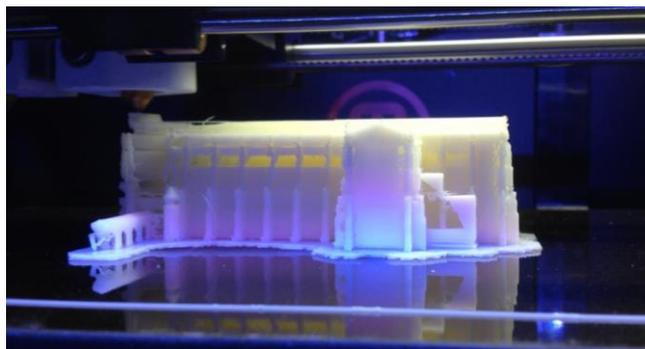


**This rendition of the Duke Chapel was 3D-printed.**

**Faculty whose 3D printing proposals are accepted** may receive funding for hardware (including printers), software, printing supplies (filament or other), and technical support.
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***Open Proposals:*** *We also welcome your proposals for other maker technologies such as laser scanning/cutting tools, ShopBot, Raspberry Pi, or littleBits.*

**Information Resources:**
- What Is the Maker Movement and Why Should You Care? http://www.huffingtonpost.com/brit-morin/what-is-the-maker-movemen_b_3201977.html
- The Maker Culture: http://en.wikipedia.org/wiki/Maker_culture
- Top Ed-Tech Trends of 2012: The Maker Movement: https://www.insidehighered.com/blogs/hack-higher-education/top-ed-tech-trends-2012-maker-movement

- What's Next in 3D Printing? (a TED talk): http://www.ted.com/talks/avi_reichental_what_s_next_in_3d_printing?utm_source=newsletter_daily&utm_campaign=daily&utm_medium=email&utm_content=image__2014-09-18
- EDUCAUSE 3D printing resources: https://www.educause.edu/library/3d-printing
- Some 3D modeling software options: http://www.3ders.org/3d-software/3d-software-list.html
- What is a Raspberry Pi? http://www.raspberrypi.org/
- What is a ShopBot? http://shopbottools.com/index.htm

## 1C. Wearable Technology

**Google Glass**

Google Glass is a wearable technology that users wear in front of their eyes, similar to a pair of glasses (and it can be worn in conjunction with regular glasses). This technology can capture images and record video as users wear it. You can also use Google Glass to view information about your physical location creating a virtual "overlay" onto your view of your physical surroundings.

Many innovative uses of Google Glass in education are being explored, and we encourage Duke faculty to propose ideas for how this new wearable technology can be used in teaching and learning. Proposals may either explore the use of existing functions and apps, or request support to develop a new software app with an educational focus.

**Faculty whose Google Glass proposals are accepted** will receive funding to buy Google Glass, and may also receive funding for other hardware, software, and technical support.

*Open Proposals*
*We also welcome your proposals for exploring other wearable technologies such as smart watches, shoes with embedded microprocessors, and fitness trackers.*

**Google Glass is worn in front of your eyes and can be used to view information about your surroundings.**

**Information Resources:**
- Example uses of Google Glass in education: http://www.huffingtonpost.com/vala-afshar/14-google-glass-innovativ_b_5410893.html
- Putting Google Glass to Work: http://innovationinsights.wired.com/insights/2014/08/putting-google-glass-work/
- Summary of some wearable technologies: http://www.huffingtonpost.com/news/wearable-tech/

- 36 Ways to Use Wearable Technology in the Classroom: http://www.teachthought.com/technology/36-ways-to-use-wearable-technology-in-the-classroom/
- Imagining the Classroom of 2016, Empowered by Wearable Technology: http://www.emergingedtech.com/2014/04/imaging-the-classroom-of-2016-empowered-by-wearable-technology/

## 1D. Gaming

**Re-purposing a mass market video game**
We recognize that many students entering college have a history of avid game playing. Many games such as World of Warcraft both draw on and develop social skills, leadership skills, and problem-solving skills. We invite proposals that investigate ways to use games designed for entertainment as educational tools.

**Faculty whose proposals are accepted to repurpose an existing mass market game** for educational purposes will receive one or more game licenses (depending on the proposal) and may also receive funding for technical support.

*Open Proposals*
*We welcome your proposals to use other gaming systems or technologies, including game engines such as Unity or CryENGINE, in your teaching.*

**College students often have a lot of experience playing video games.**

**Information Resources:**
- Is World of Warcraft an educational tool? https://sites.dartmouth.edu/socy91w14/2014/02/14/world-of-warcraft-an-educational-tool/
- EduRealms: Where Gaming and Education Converge: http://edurealms.com/

# 2. Support for Attending Conferences

We invite applications for support to attend a conference outside of your normal academic discipline where you can see new technologies and engage with exhibitors and other attendees about the potential to use those technologies in teaching and learning.

Awards of up to $1500 can be requested to support conference registration, travel, and/or hotel expenses.

**Faculty whose conference proposals are funded** will be required to 1) write a blog post about their experiences for the DDI blog and 2) conduct a discussion that will be open to the campus community (date to be scheduled during the award process). The discussion should consist of a brief presentation about 1 to 4 topics of interest from the conference as well as a discussion question about each to help open a dialog among attendees. Receipts will be required to process reimbursements.

**Example Conferences:**
- ASU+GSV Summit (http://asugsvsummit.com)
- Neurogaming (http://www.neurogamingconf.com)
- ACM Special Interest Group on Computer Graphics and Interactive Techniques (SIGGRAPH) (http://s2015.siggraph.org/)
- South by Southwest Interactive (http://sxsw.com/interactive)
- World Maker Faire - NYC - (http://makerfaire.com/)
- East Coast Game Conference (http://ecgconf.com/)
- Consumer Electronics Show, Education Division (http://www.cesweb.org/)

# 3. Open Call for Proposals

We welcome proposals for projects involving other new and emerging technologies that might be applied to teaching and learning.

## Deadlines

Proposals should be submitted by 5:00PM ET Friday November 7, 2014.

Proposals submitted between November 7, 2014 and April 1, 2015 will be considered if funding remains available.

## Types of Support Provided

Most awards will provide up to $5,000 for a project. However, we welcome proposals for larger projects requiring up to $25,000 in support. Funds may be used to purchase hardware or software, cover the cost of student employees, or pay for production and editing services from Duke Media Services.

Proposals may also include requests for technical and/or pedagogical consultation time from OIT and CIT staff.

Faculty whose projects are funded will be required to 1) write a blog post about their experiences to be posted on the DDI blog; and 2) provide feedback about the project in a format to be determined during the award process).

## Eligibility
Any faculty member at Duke may apply.

Application Preview (to help you prepare): http://dukedigitalinitiative.duke.edu/wp-content/uploads/CFP_2014-2015_Prep_Doc.docx

Application: https://duke.qualtrics.com/SE/?SID=SV_cTugkr8EAWZ6oap

## Planning Resources Available at Duke
You can draw on several Duke resources before submitting your proposal:
- CIT staff can help you think through pedagogical issues. (Contact: cit@duke.edu)
- OIT staff can help determine how much technical support your project is likely to require. (Contact: ddi-requests@duke.edu)
- Your departmental or school IT staff may be able to help with your proposal or project.
- If your project involves visualization, consider consulting with the library's Data and Visualization Services group (http://library.duke.edu/data/).