Spring 2007 Visualization Grant Awards

Spring 2007 Visualization Incentive Grants

Overview:
In Spring 2007, CIT offered a grant program to support faculty incorporating “visualization” in teaching, where “visualization” was left deliberately open-ended in its meaning in order to encourage a wide variety of proposed uses. As of this writing, we have funded 6 projects and are actively developing proposals for 2 additional projects which we anticipate funding during Summer 2007. These 8 grants will focus on:

- Using Google Earth and digital maps to enhance understanding of the history of Durham, NC (History)
- Scanning images of Dante’s *Paradiso*, to enhance student understanding of that text (Romance Studies)
- Using Google Earth and other tools to visualize value chains of North Carolina businesses (Sociology)
- Using a GPS/accelerometer device, perhaps in conjunction with Google Maps, to record and visualize spatial data related to lemur movement (Biological Anthropology and Anatomy)
- Developing a 3D immersive model of the brain using Duke’s Immersive Virtual Environment (DiVE) to visualize pharmacological principles of brain chemicals (Pharmacology and Cancer Biology)
- Exploring aspects of teaching in Second Life virtual world (Information Science)
- Developing a text visualization and comparison tool (University Writing Program, project still under development)
- Creating Flash animations to assist students in learning Russian verbs (Slavic Languages and Literature, project still under development)

Total project funding $25,350 at this time, with potentially additional funds for the two projects whose plans and final applications are still in development.

Grant process and applications:
CIT requested an initial basic application, of which we received thirteen in two “tracks” – twelve in the general “exploration” track, and one in the “DiVE” track. CIT’s consultants met or talked with the applicants in order to determine whether to request a more detailed full application, route the application to another CIT funding option, or decline the application. After the initial applications, CIT requested 11 of 13 full applications and routed the remaining two applications to other CIT support programs, the Jump Start mini grant (this application was later withdrawn), and the materials development mini grant (this application was approved and supported).

By the full application deadline for the Visualization Grants, we received 9 of the 11 requested full applications (2 applicants chose to withdraw). The CIT and the grant review committee (CIT Advisory Board) approved 7 of the applications, and CIT continues to work with the remaining 2 applicants to further refine their applications. One of the approved grant winners later chose to withdraw for personal reasons, as well, resulting in 6 active projects and 2 additional project proposals still under development as of 6/29/2007.

<table>
<thead>
<tr>
<th>Applications</th>
<th>Phase 1</th>
<th>Phase 2</th>
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<td></td>
<td>Explore appl. rec'd</td>
<td>DiVE appl. rec'd</td>
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<td><strong>Total</strong></td>
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* Two Arts and Sciences project proposals are still in active development and may be funded in Summer 2007.

**Brief synopses of active visualization grant projects**

**Trudi Abel, History, Arts & Sciences**

*Digital Durham Map*

Abel plans to incorporate more interaction into her history course(s) and into her ongoing Digital Durham website/project, by overlaying old Durham maps in Google Earth with student produced audio and content created as placemarks. Ultimately, Abel would like to see several old maps of Durham (including several fire maps) located in Google Earth and presented in a timeline/tour to illustrate the changes/changing of Durham.

**Funding:** $1,650

**Martin Eisner, Romance Studies, Arts & Sciences**

*Mapping Paradise*

Eisner proposes the creation of an online image collection showcasing images of Dante’s *Paradiso*. Further ideas for the creation of a collaborative Web space to present visual materials to students related to Dante (and his representation of Paradise, specifically) and to host students' presentation of visual materials, and the creation of visualizations to explore Dante’s Paradise as envisioned by artists may be pursued in future projects.

**Funding:** $500

**Gary Gereffi, Sociology, Arts & Sciences**

*Visualizing Economic Development: Value Chains and Mapping of U.S. and Global Employment and Trade Data*

In Gereffi’s Marketing and Management capstone course, students collect and analyze data involving several industries, and plot out this data in value chains that eventually end up on a public and highly-visible website. With this project, Gereffi will develop a more effective way for students to create value chains and maps using Google Earth and other tools, and possibly rethink the way this data is presented visually in a more global context.

**Funding:** $11,000

**Ken Glander, Biological Anthropology and Anatomy, Arts & Sciences**

*Visualizing an Animal’s Movement in Real-Time*

Glander’s class will attach GPS/accelerometers to lemurs to track location, speed of travel and height (in trees) in real-time. The data will be mapped onto Google Maps to visualize the animal movements. This visualization would facilitate better hypothesis generation and testing, important components in a research methods course.

**Funding:** $3,200

**Rochelle Schwartz–Bloom, Pharmacology and Cancer Biology, DUMC**

*DIVE into Science Education: Development of a Biological/Chemical 3D Virtual Model*

Schwartz–Bloom will supervise an interdisciplinary team of students in constructing a 3D model of receptor binding to be tested as a learning object by students in her pharmacology class. The model will be used both in the DiVE and on her science education website.

**Funding:** $6,500

**Victoria Szabo, ISIS, Arts & Sciences**

*Online Virtual Worlds*

Szabo will explore the Second Life virtual world in her teaching, and will develop best practices to share with the Duke community. In addition, she will develop objects or modules for use when teaching in Second Life and will support other Duke faculty wishing to learn about the SL environment.

**Funding:** $2,500
Van Hillard, University Writing Program, Arts & Sciences (proposal still under development)

Docuview Text Comparison Tool

Hillard hopes to create or modify a web-based program to demonstrate changes in a sample of text over time, to aid in teaching students strong revision skills (this is a core skill to be developed in writing courses). The application could be used in disciplines that closely examine text changes; faculty might use it for demonstrating changes during a lecture or have students load a series of changes and discuss their ideas during the drafting process.

Funding: $0 at this time

JoAnne Van Tuyl, Slavic and Eurasian Studies, Arts & Sciences (proposal still under development)

Visualizing Motion in Russian

Van Tuyl proposes is to create animations to visually represent the spatial relationships that students must understand to make accurate decisions about verb morphology in Russian.

Funding: $0 at this time