

**Application for Non-Salary Financial Support Grants**  
**DUE: APRIL 1, 2008**

Name: William I. Wolff

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Department: Writing Arts

Title of Project: Mapping Relationships among Web 2.0 Applications: A Preliminary Investigation into a New Information Literacy

I am a:

Full-time, tenure-track faculty member

Total amount requested (generally limited to \$5,000 for Non-Salary Financial Support Grants): \$4811.00

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**For Committee Use Only**

Recommended  Amount

Not Recommended

## **Project Title**

Mapping Relationships among Web 2.0 Applications: A Preliminary Investigation into a New Information Literacy

## **Project Summary**

As literate readers of web pages we understand that the hyperlink is used to connect together different web sites and that the web is a system of interconnected hypertext documents. When we hyperlink from one web site to the next we read these sites as discrete entities, each with unique texts, symbols, navigations, and artifacts that define it apart from others. CNN.com, for example, has a different look, feel, and usability compared to Yahoo! Other than the content of some reports we generally do not expect their features to overlap in any meaningful way.

Web 2.0 applications complicate our understanding of how to read web sites by requiring a sophisticated kind of reflective, elastic, semiotic eco-spatial information literacy that evolves with the web. This new (as yet unnamed) literacy involves, for example, becoming a critical reader of the similarities among Web 2.0 vocabularies (“widget,” “feed,” “reader”) from which new modes of composition are emerging. Literate users will be able to recognize Web 2.0 applications as writing spaces that contain multiple symbiotic genres, and will have an ability to transfer knowledge of application functionality from one site to the next. They will understand both the meaning-making and compositional possibilities of working with and among, for example, static pages, blogs, RSS readers, and social bookmarking sites.

Little, however, is known about the literacy of Web 2.0 applications. This project begins that process of understanding. The project requests \$4811.00. A portion of this money is to support two undergraduate student co-researchers. The remaining money is for computer hardware and software, which will facilitate our work. The end result will provide the seeds for a larger study that will investigate the processes of how web users (students, faculty, the general public, and so forth) become literate readers and users of Web 2.0 applications. The ultimate goal is to identify the characteristics of and name this new literacy. Doing so will have broad implications for the fields of composition, internet studies, rhetoric, ontological studies, and any discipline concerned with Web 2.0 applications.

## Project Description

### Introduction

As literate readers of web pages we understand that the hyperlink is used to connect together different web sites and that the web is a system of interconnected hypertext documents. When we hyperlink from one web site to the next we read these sites as discrete entities, each with unique texts, symbols, navigations, and artifacts that define it apart from others. CNN.com, for example, has a different look, feel, and usability compared to Yahoo! Other than the content of some reports we generally do not expect their features to overlap in any meaningful way.

Web 2.0 applications complicate our understanding of how to read web sites and understand the relationship among web sites because so often their features, symbols, and artifacts often do overlap in meaningful ways. Though there is great disagreement about the validity of the Web 2.0 meme as well as the cultural, economic, and privacy implications of related technologies, the term itself is not as important as the online applications it describes. O'Reilly (2005) observes that there is a

set of “Web 2.0 design patterns”—architecting systems so that they get smarter the more people use them, monetizing the long tail via a combination of customer-self service and algorithmic management, lightweight business models made possible by cooperating internet services and data syndication, data as the “intel inside,” and so on.

More immediately, Web 2.0 is the era when people have come to realize that it's not the software that enables the web that matters so much as the services that are delivered over the web. Web 1.0 was the era when people could think that Netscape (a software company) was the contender for the computer industry crown; Web 2.0 is the era when people are recognizing that leadership in the computer industry has passed from traditional software companies to a new kind of internet service company. The net has replaced the PC as the platform that matters, just as the PC replaced the mainframe and minicomputer.

Though O'Reilly tends to focus on the web's financial and economic future, implicit in his discussion of the web as a platform and a service industry, is the idea of relationships between and among applications and users, and the applications themselves. We see the relationship among sites when we use, for example, the Touchgraph Google Browser—an application that maps relationships among web sites (Figure 1). There are, according to Go2Web20, the self-proclaimed Complete Web 2.0 Directory, 2,241 Web 2.0 applications with social networking services ranging from advertising (e.g., AdReady, Qoof, Ads-click) to music (e.g. Last.fm, One Llama, my jam) to dating (e.g., WooMe, girlsaskguys, yesnomayB) to video (e.g., YouTube, wedigTV, iFilm).



This new (as yet unnamed) literacy involves, for example, becoming a critical reader of the similarities among Web 2.0 vocabularies (“widget,” “feed,” “reader”) from which new modes of composition are emerging. Literate users will be able to recognize Web 2.0 applications as writing spaces (Bolter, 2001) that contain multiple symbiotic genres (Spinuzzi, 2003), and will have an ability to transfer knowledge of application functionality from one site to the next. They will understand both the meaning-making and compositional possibilities of working with and among, for example, static pages, blogs, RSS readers, and social bookmarking sites. And they will be able to effectively adapt to the emergent qualities of Web 2.0 applications, such as when versions and toolbars are updated, and when functionalities and vocabularies change.

The larger study will record participants’ interactions among various Web 2.0 applications along three activities:

1. interaction with a Web 2.0 applications with which they are familiar
2. interaction between a Web 2.0 application with which they are familiar and one with which they are not familiar
3. interaction among two or more Web 2.0 applications with which they are not familiar

Participant activities will be recorded by adapting the accepted methodologies of usability studies: a screen recording software application, voice aloud protocols, researcher observations, and pre- and post-test questions.

In preparation for the larger study, the following will be completed in this project by the applicant and two undergraduate student researchers:

#### Months 1 - 10

- research, bookmark, and store important articles on the history of the web, social networking, Web 2.0, the Semantic Web, and semiotic domains (such as role playing video games);

#### Months 1 – 4

- identify, catalogue, screenshot, and tag the 50 most popular Web 2.0 applications (at the time of the study, but with room for new applications as they emerge and/or gain popularity), including each application’s version, purpose, functionality, information requested during to sign-up, symbols, toolbar use, relationship with other Web 2.0 applications, number of registered users, writing spaces, genres, and competition;
- upload screenshots of applications to Flickr and tag images according to a predetermined tagging structure (also known as a collabulary)
- using screen recording software, record the primary functions of each Web 2.0 application, store the videos on a computer, and upload and tag each video to a private YouTube account

#### Months 4 - 8

- map relationships among the applications using Flickr, XML, and Adobe Flex
- write up preliminary results in a co-authored article for publication in *The Journal of Computer-Mediated Communication*, *Computers & Composition*, or other related journal

- identify and prepare conference presentations (single and co-authored)

Months 8 - 10

- determine which applications will be useful for the purposes of the larger study
- design the study, including all testing apparatus
- compose final report to be submitted to Associate Provost for Research

Ideally, one student will have a strong background in object-oriented programming and the other a strong background in the language arts. The former would be able to learn quickly the Adobe Flex object-oriented coding language, ActionScript 3. The latter student would be able to recognize more quickly the multiple genres and writing spaces within Web 2.0 applications. By working together, teaching each other, showcasing their skills, the project becomes a more authentic collaboration among disciplines. The interdisciplinary of the project, then, compliments the interdisciplinary nature of Web 2.0 applications—writing spaces with functionality designed by software engineers, coding specialists, and language arts workers for the benefit of users from across the population.

### **Broader Impact**

This project will benefit the applicant by providing him with the background work necessary to design a larger study that investigates literacy development when using Web 2.0 technologies. It will also provide him with material for articles and a book-length treatment of the subject of the future of literacy in the age of Web 2.0 and, later, the Semantic Web. He will also be able to adapt certain aspects of his courses that cover Web 2.0 technologies.

The project will benefit student workers by introducing them to research methodologies and new software applications, including Flickr, Del.icio.us, Adobe Flex, and Final Cut Express. Students will also have the opportunity to co-author a paper(s) for a major journal(s) as well as prepare proposals with the possibility of presenting at conferences.

Very little is known about literacy and Web 2.0 applications. The closest that anyone has been to working on this subject is James Paul Gee. In his important book *What Video Games have to Teach Us about Literacy and Learning*, Gee (2008) identifies and defines a semiotic domain: “any set of practices that recruits one or more modalities . . . to communicate distinctive types of meanings” (p. 18). He argues that video game environments are diverse, rich domains, filled with “oral or written language, images, equations, symbols, sounds, gestures, graphs, artifacts, etc.” (p. 18) from which naturally emerges an important contemporary literacy. The issue that he and others are just beginning to consider is transference: how video game users take the literacy skills they learn playing video games and transfer them to the more traditional literacies of reading, writing, geography, and so forth.

I have argued that Web 2.0 applications share many of the same characteristics of semiotic domains (Wolff, 2008). Yet, because users of Web 2.0 applications are *encouraged* to move between and among Web 2.0 applications and static web pages (cnn.com, nytimes.com, yahoo.com, and so forth), their traditional understanding of the web is complicated. This project begins the process of understanding that movement between and among Web 2.0 applications and static web pages. The ultimate goal is to identify the characteristics of and name this new

literacy. Doing so will have broad implications for the field of composition, internet studies, rhetoric, ontological studies, and any discipline concerned with understanding how humans become literate users of Web 2.0 applications.

### **Qualifications of the Applicant**

The applicant has extensive experience designing, conducting, and analyzing the results of IRB approved qualitative and quantitative studies. These studies include, “Classroom Technology Access and Use Study” (Rowan University, 2007); “Innovation and Instructional Technology in the Liberal Arts at the University of Texas at Austin: The Future of the Community” (The University of Texas at Austin, 2004 – 2006); and “Walk-up Study of People Working in University Common Area” (The University of Texas at Austin, 2005). The latter two studies have led to publications in *Computers & Education* (in press), *Technical Communication Quarterly* (accepted), and *Educause Quarterly* (2006).

The courses he teaches—Technologies and the Future of Writing; Writing, Research, and Technology; and Writing for Electronic Communities—provide the applicant with the opportunity to engage students in discussions about the socio-cultural, ethical, and economic implications of the latest Web 2.0 technologies. The hands-on, activity-based pedagogy of his courses provides ample opportunity for the applicant to observe students successes and difficulties with multiple Web 2.0 applications. He has used his classroom experiences and observations to prepare papers that have been presented at premier international conferences, including the 4th International Conference on Technology, Knowledge and Society. He will also be presenting at the Third Annual International Association of Online Communicators Conference.

### **Expected Outcomes**

The expected outcomes of the project are a detailed archive of Web 2.0 applications from which relationships can be mapped and analyzed, as well as the apparatus for a larger study that investigates how people become literate users of such applications.

### **Program Funding**

There are few, if any, funding opportunities for faculty in writing. This grant will provide the foundation for a study that could eventually be funded by NSF or, possibly, a National Academy of Education/Spencer Postdoctoral Fellowship.

## References

- Bolter, J.D. (2001). *Writing space: Computers, hypertext, and the remediation of print*. Mahwah, NJ: Erlbaum.
- Gee, J.P. (2007). *What video games have to teach us about learning and literacy* (Rev. Ed.). New York: Palgrave Macmillan.
- Holland, J.H. (1992). Complex adaptive systems. *Daedalus*, 121, 17 – 30.
- O'Reilly, T. (2005, September 30). What is Web 2.0: Design patterns and business models for the next generation of software. *O'Reilly*. Retrieved March 29 2008 from <http://www.oreillynnet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>
- Spinuzzi, C. (2003). *Tracing genres through organizations: A sociocultural approach to information design*. Cambridge, MA: MIT Press.
- Wolff, B. (2006). "Laptop Use in University Common Spaces." *Educause Quarterly* 29.1.
- Wolff, B. (2008, January). Preparing writers for the future of information systems. Paper presented at the 4th International Conference on Technology, Knowledge and Society, Boston, MA.
- Wolff, W.I. (accepted). "The appearance of aameness: Systems of classification and the cognitive properties of grant proposal formal documents," *Technical Communication Quarterly*.
- Wolff, W.I. (in press). "'A chimera of sorts': Rethinking educational technology grant programs, courseware innovation, and the language of educational change," *Computers & Education*. Corrected proof online at <http://dx.doi.org/10.1016/j.compedu.2007.11.005>

## Budget

### Salaries and Wages

Student Type	# of Students	\$/Hour	Hours / Week / Student	Total # Weeks	Total \$
Undergraduate	2	\$10.00	5	28	\$2800.00

### Equipment and Software

Description	#	Total \$
MacBook 13-inch (White), 2.4GHz Intel Core 2 Duo <ul style="list-style-type: none"> <li>• Part Number: Z0FK</li> <li>• SuperDrive 8x (DVD±R DL/DVD±RW/CD-RW)</li> <li>• Keyboard/Mac OS - U.S. English</li> <li>• 2.4GHz Intel Core 2 Duo</li> <li>• 250GB Serial ATA Drive @ 5400 rpm</li> <li>• 4GB 667MHz DDR2 SDRAM - 2x2GB</li> <li>• Accessory Kit</li> </ul>	1	\$1649.00
AppleCare Protection Plan	1	\$183.00
Final Cut Express 4 - Academic	1	\$179.00
<b>Total</b>		<b>\$4811.00</b>

## Budget Justification

I am asking the Non-Salary Financial Support Grant Committee for \$4811.00. A portion of this money is to support two undergraduate student co-researchers. The remaining money is for computer hardware and software, which will facilitate our work.

Because of the volume of work that needs to be completed in a short period of time, two undergraduate co-researchers are needed. The kind of work in which they will be engaged—identifying, assessing, processing, and tagging Web 2.0 applications, as well as learning two complex software applications, Adobe Flex (freeware for academics) and Final Cut Express 4—is complex and draining. Collaboration and communication is essential. Two pairs of eyes, as well as my own, will help ensure that the completed work is of exceptional quality. See **Method / Experimental Procedure** for a more complete list of work to be completed.

Due to the online, RAM-heavy nature of the work, a top level laptop computer with excellent wireless capability is essential. The MacBook I have requested has 4GB RAM and a 250GB hard drive—plenty of memory to support the work.

Final Cut Express 4—Academic is the trimmed-down version of Final Cut Pro, Mac's professional-grade video editing suite. The Express version is excellent and provides more flexibility, functionality, and quality than iMovie (Mac's built-in video editing application). Due to the amount of video that we will be taking in the form of screen recordings, a more robust application is needed. It will also allow us to create more dynamic videos for conference presentations.

## Curriculum Vitae

### Education

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**Ph.D. in English, Computers and English Concentration**, University of Texas at Austin, 2006  
Specialization: Educational Technology Administration, Organizational Systems,  
Innovation Theory, New Media  
Title: *Faculty Learning Communities: Cultivating Innovation in Educational Technology  
Support Organizations*  
Committee: Margaret Syverson (Chair), John Slatin, Linda Ferreira-Buckley, Daniel  
Updegrove (former Vice-President for Information Technology), Cynthia Selfe

**M.A. in English and Creative Writing**, University of Cincinnati, 1997  
Fields: Rhetoric and Composition, Playwriting, Modern British Literature, Poetry  
Thesis: *The Salon, a play in three acts*

**B.A. in English** (departmental honors) Union College, New York, 1994

### Related Academic Employment and Teaching Experience

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for course web sites, see <http://williamwolff.org/courses/>

#### **Assistant Professor, Department of Writing Arts, Rowan University, 2006 – present**

Writing for Electronic Communities (graduate, 1 section, designed course)

- topics to be covered: usability, new media theory, communities of practice, hypertext theory, race and technology, distributed cognition, internet studies, web 2.0

Technologies and the Future of Writing (2 sections, co-designed course, designed module as part of course “Introduction to Writing Arts”)

- Students compose online information ecologies, and consider: metaphors about technology; identity; writing spaces; ownership; classification systems; information architecture; and writing in online environments.
- Technologies: course wiki, forums, blogs, RSS feed reader, social bookmarking

Writing, Research, and Technology (4 sections, designed course)

- Students work with theories on writing spaces, remediation, evidence, and mapping.
- Technologies used: hand-coded course web site, forums, online chat, html editor, Voicethread

### Related Publications

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for my blog, see <http://williamwolff.org/composingspaces>

“Toward the Convergence of Wireless Technologies and Learning Space Design: A History and a Proposal,” *Computers and Composition: An International Journal*. Completing revisions.

“The Appearance of Sameness: Systems of Classification and the Cognitive Properties of Grant Proposal Formal Documents,” *Technical Communication Quarterly*. Accepted, completing revisions.

“‘A Chimera of Sorts’: Rethinking Educational Technology Grant Programs, Courseware Innovation, and the Language of Educational Change,” *Computers & Education*. In press. Corrected proof online at <http://dx.doi.org/10.1016/j.compedu.2007.11.005>

“Laptop Use in University Common Spaces.” *Educause Quarterly* 29.1 (2006).

## **Related National and International Conference Presentations**

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“When Understanding Hypertext Isn’t Enough: Notes toward a New Online Literacy.” *The Seventh Biennial Watson Conference*. Louisville, KY (Oct., 2008). Submitted.

“Preparing Online Communicators for the Future of Information Systems.” *Third Annual International Association of Online Communicators Conference*. Reykjavik, Iceland (June, 2008). Accepted. Presenting with Diane Penrod.

"Preparing Writers for the Future of Information Systems." *4th International Conference on Technology, Knowledge, and Society*. Boston, MA (Jan. 2008). Presented with Diane Penrod.

## **Selected Grants, Awards, and Fellowships**

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Information Technology Services Grant, provided by the Vice President for Information Technology, The University of Texas at Austin, 2005

- \$5000 to cover data analysis of two studies

Professional Development Award, University of Texas at Austin, 2004 and 2001

Accessibility Internet Rally (University division) Accessibility Award for redesign of Computer Writing and Research Lab web site, 2003

McGraw Hill Technology Design Award, Computers and Writing Conference, for the Learning Record Online, 2001

The Thomas J. Watson Fellowship, The Thomas J. Watson Foundation, 1994 - 1995

- \$15,000 grant to study the life and work of T.S. Eliot in the countries where he wrote his major pieces: England, France, Germany, and Switzerland.
- Worked in the following archives: The Brenchly Collection, Merton College Library, Oxford; The Hayward Collection, King's College Library, Cambridge; the T.S. Eliot Collection at The British Museum Library; and The Lloyds Bank Archives, London.