

RICHTER SCHOLR PROJECTS - 2005

ATHLETIC DEPARTMENT

Coach Mike Dau
Sports Center 068B
Ext. 5297; email: dau@lakeforest.edu

History of Athletics at Lake Forest College (1 student)

Phase I. Collect all available data from:

1. the *Stentor*
2. college yearbooks
3. athletic conferences (C.C.I., M.C.A.C.)
4. L.F.C. Athletic Department files
5. alumni sources
6. Library of Congress

Phase II. Construct a historical summary for each varsity sport to include:

1. team rosters
2. team honors; captain, M.V.P., etc.
3. external athletic honors; All Conference, All America, etc.
4. team records and stats
5. publicity (press clippings)
6. photographs, programs, memorabilia

Phase III. Construct a chronological summary highlighting items 2, 3 and 4 from Phase II for all varsity teams for each school year. In addition, prepare biographical sketches of the inductees to the L.F.C. Athletic Hall of Fame.

ART

Professor Tom Denlinger
Durand 108
Ext. 5190; email: denling@lakeforest.edu

Project 1: Sound and image (1 student)

I am working with internationally recognized composer Gene Coleman on a series of video/sound projects that combine projected video and live performed music. The artworks that we are creating are assembled from live and still video images and live-recorded musical scores, and then edited with Final Cut Pro software in preparation for their presentation in a multi-media production, and eventual recording into DVD format.

We are in the beginning stages of our second collaborative effort, *Kyoto: In_Ex*, that will be presented during the Soundfield Festival of New Music in Chicago in the Fall of 2005. *Kyoto: In_Ex* is about the relationships between post-modern and traditional architectural forms in the Kyoto train station and a nearby temple Higashi Hongan-Ji. I photographed and videotaped these sites in Kyoto under the auspices of a two-course release from Lake Forest College and a travel grant from the Japan Study Center at Earlham College in October of this year.

In preparation for editing this work we will be examining some current uses of sound and image tracks in music videos, recent cinema and recent video installation.

We will be looking at this relationship as an interaction of visual and aural scores that demonstrate rhythmic, lyrical, and percussive elements, and the interplay of these elements in the construction of meaning. We will also be looking at the possibilities for using some of these structural ideas in the generation of our own multi-media artworks.

The Richter Scholar will be directly involved in the organization and editing of video and still image material towards the production of *Kyoto: In_Ex*. Additionally, the Richter Scholar will provide support and feedback in the process of selection, viewing, and analysis of pertinent music videos, cinema, and video installations, as well as the organization of the resulting material.

The ideal student will have an interest in video, cinema and music, and the intersections between these forms. Some familiarity with video and the digital environment would be useful but not absolutely necessary. I will provide training in Final Cut Pro and related software programs to the interested Scholar as needed for the completion of this project.

Project 2: William Shakespeare's *The Tempest* (1 –2 students)

This project is a collaborative effort with Professors Dennis Mae, Don Meyer, Jennifer Lowe and Richard Pettengill towards a production of Shakespeare's *The Tempest* for the Spring of 2006. The production will involve multiple projected video

images and composed soundscapes that will function as interactive backdrops for the live drama.

Richter Scholars will be expected to read and research *The Tempest* and related materials and then to aid in the production and collection of images with video and still cameras as needed. These Scholars will make informed decisions in the selection, organizing and editing of raw video and still material, and will contribute directly to the eventual presentation of this imagery in large-scale video format.

The ideal student will have an interest in video, theater, and music and the creative possibilities that occur at the junctures between these forms. Some familiarity with video and the digital environment would be useful but not absolutely necessary.

In addition to guidance in research I will provide training in Final Cut Pro and related software programs to the interested Scholar as needed for the completion of this project.

Professor Alan Teller

Durand 303

Ext. 5194; email: teller@lakeforest.edu

Exhibit Development Project (1 student)

While public exhibits may be developed by host institutions themselves, this is rarely the case. More often than not, outside exhibit developers, planners and designers are employed. I am a partner in a small, Chicago-based museum exhibit design firm that does much of this work for institutions throughout the United States. During the Fall semester, I was able to share this expertise with LFC students in the Museum Practicum course (Art/SOAN 350.) The end result was 'Clouds of Fantasy, Pellets of Information', a wonderful exhibit that explores issues in photography, anthropology and exhibition.

During Summer 2005, I would be willing to mentor a student in the exhibit development process. We are working on several exhibits that would be ideal for student involvement. The most notable is an exhibit for the City of Chicago, Department of Environment in the Calumet region of the city. This is the former industrial area surrounding the now defunct south side steel mills. We are designing a new Ford Calumet Environmental Center, which will explore nature, industry and community in this still vibrant area.

I would need an individual who could read both technical and non-technical environmental and historical material quickly and be able to summarize content; have decent writing skills and good organizational ability. Most importantly, I

would need someone who would be willing to work hard and learn quickly. A good sense of humor would help, too.

Professor Michael Vari

Durand 100

Ext. 5197; email: vari@lakeforest.edu

Visual Analysis of Photographs Published by Newsweeklies (2-3 students)

One of my current research projects involves the visual analysis of the photographs published by newsweeklies (*Time*, *Newsweek*, and *U.S. News & World Report*), and how these relate to captions, texts, and the creation of the news frames that guide public discourse. Visual communication researcher Michael Griffin conducted research in this area, looking at how the two Gulf Wars were represented in the newsweeklies, which he argues serve as a kind of national digest. He concluded that images were not used to relate new information (news), but rather to illustrate pre-existing narratives and news frames.

I have conducted some similar preliminary research, looking at how the newsweeklies covered the primary and early presidential campaign. While I share Griffin's interest in how images relate to existing news frames, I also found that in a long-running story, involving the two candidates' Vietnam War-era experiences (prior to the Swift Boat Veterans flap), the magazines used images to subvert, soften, or re-balance the text and the facts of the story itself. This may reflect a misguided desire to be "objective." At this point, I would like to study the relationship between image, caption, and text more systematically, over a longer period.

Student researchers would work with me on coding the images, captions and texts, and help determine patterns in their relationships. The skills and knowledge involved in the process would include some level of visual literacy (semiotics and formal visual analysis), critical thinking, and understanding concepts like stereotyping and propaganda. Students who have taken Art 112 (Intro to Visual Communication) would be well suited, as well as Communications students who have taken the Introductory 110 & 120 courses or the Mass Communication course (281). These students could familiarize themselves with the specifically visual concepts with some reading.

BIOLOGY

Professor Shubhik DebBurman

Johnson Science Building-A201
Ext. 6040; email: debburma@lakeforest.edu

Discovering Molecules That Combat Protein Misfolding Linked to Neurodegeneration (1-2 students)

During summer 2005, the DebBurman lab seeks one or two highly-motivated, hardworking undergraduates to join a diverse group of six other peers, who collaboratively study how certain disease-linked proteins misfold and if such errors can be suppressed or reversed. To fold correctly, most proteins require chaperones, which are proteins that help other proteins fold into their proper shapes and maintain their shape. If proteins still misfold, they are targeted for destruction by the ubiquitin-proteasome complex. But some misfolded proteins that escape quality control, build up in tissues and cause tragic incurable diseases. We have focused on the protein folding mysteries underlying two such illnesses: Parkinson Disease (PD) and dentatorubral pallidolusyan atrophy (DRPLA). Mutations in α synuclein and atrophin cause PD and DRPLA, respectively. Mutant α synuclein and atrophin proteins are both thought to misfold, aggregate, and somehow selectively kill nerve cells. We hypothesize that chaperones, and enzymes of the ubiquitin-proteasome pathway, lysosomal degradation pathway, and oxidative damage pathway can regulate mechanisms underlying the misfolding of these two proteins. To test this hypothesis, we have chosen to work with yeasts and mammalian cell culture as model systems and techniques in molecular genetics, cell biology, and biochemistry. Students choose from several ongoing hypothesis-driven projects and enjoy significant control over experimental design. As part of their introduction to biology research, Richter students will attend a prestigious scientific summer conference in Chicago, and learn to present scientific journal clubs and lead data discussions at lab meetings. Past students choose to continue working additional years in these projects. Some make it a senior thesis, which they present at national conferences. Several students have become co-authors on research manuscripts and all lab graduates have pursued graduate degrees in biology or diverse health professions. Prerequisite: BIOL120 and CHEM111.

Professor Caleb Gordon
Johnson Science Building-J207
Ext. 6051; email: gordon@lakeforest.edu

Project 1: Stopover Ecology of Migrating Woodland Birds (1-2 students)

The notion that a 10-gram bird would make a thousand mile journey twice a year seems unbelievable, and yet *most* of the bird species that breed in North America engage in such seasonal migratory activities. Understanding the ecology of migrating birds *during* their migration is critical for understanding the life histories of these birds, and for their conservation. As a Richter Scholar under this project, the student(s) will participate in an intensive bird-banding study that I initiated in

2002, targeted at 1) monitoring long-term and continent-wide population trends in North American migratory birds; and 2) understanding the “stopover ecology” of migrating birds as they pass through Lake Forest during spring migration. Students selecting this project should enjoy working outdoors in moderately strenuous and very muddy conditions, and be willing to wake up very early most days during the second half of May. Students will learn how to operate mist-nets and handle live birds in the field, including identification, weighing, banding, and physiological and reproductive condition assessment. This project involves many volunteer banders from the local community as well, and so an interest in working with the public, and helping to train and coordinate volunteers is also desirable. This project will involve two weeks of intensive field work at a Lake Forest nature preserve in the second half of May, followed by data entry, analysis, and research. The precise topic for research is flexible depending on students’ interests, and will represent an opportunity for students to become involved in publications, presentations and/or continued research on migratory bird ecology.

Project 2: Effects of Bird Exclusion on Coffee-dwelling Beetles (1-2 students)

Coffee, grown in biodiversity-laden tropical cloud forests and Latin America’s #1 source of foreign exchange, is perhaps the world’s premier example of an agroecosystem that holds tremendous potential for simultaneously maintaining biodiversity and providing a living for people. My research in this system is aimed at determining how much of tropical cloud forest biodiversity persists in coffee agroecosystems ranging from intact cloud forest at one extreme, through a variety of “shade” coffee plantations with varying amounts of tree diversity and forest-like structure, to highly simplified “sun” coffee plantations at the other extreme. As a Richter Scholar, student(s) will participate in a collaborative research project in which beetles have been collected from coffee foliage in bird-excluded and non-excluded plots in three coffee plantations in Chiapas, Mexico, in order to investigate the ecological effects of excluding top predators (birds) on biodiversity at lower trophic (food chain) levels. Students selecting this project will become trained as beetle experts, learning to identify beetles under powerful dissecting microscopes to the family level using published taxonomic manuals, and then to the level of “morphospecies,” which are essentially “what look like species to us,” which is as close as we can come to getting reliable species-level data given that many of these particular species have never been described to science. An interest in beetles, and a willingness to work with microscopes are desirable. This project will present an immediate opportunity for student(s) to coauthor a manuscript to be submitted to a major biological journal, as well as other opportunities for continued research in the areas of conservation agroecology and/or beetles.

Professor Doug Light

***Johnson Science Building-D230
Ext. 6039; email: light@lakeforest.edu***

Regulation of Cell Volume in Red Blood Cells (1-2 students)

I study problems associated with animal physiology and homeostasis, mainly focusing on membrane transport mechanisms and signaling processes at the cellular level. Currently, I am looking for students interested in investigating the physiological basis of cell volume regulation. The ability to control size is a fundamental property of cells and is one of the oldest regulatory mechanisms from an evolutionary standpoint. In fact, many of the mechanisms involved with cell volume regulation also are associated with important biological phenomena, such as activation of white blood cells, regulation of the cell cycle, and programmed cell death. Nonetheless, the underlying mechanisms used to regulate cell volume are ill defined.

Students conducting research in my laboratory will perform novel experiments, which will lead to new findings that can be presented at regional and national meetings. These studies also may result in student-faculty co-authored publications in scientific journals. Students have the option of continuing with these studies beyond the summer so they may become the basis of a senior thesis.

Specifically, my research incorporates several complementary experimental approaches, using amphibian and fish red blood cells as model systems. These include hemolysis experiments to examine osmotic fragility, electronic sizing of cells to determine their volume, and fluorescence microscopy to monitor intracellular calcium. The specific lab procedure(s) used by students will depend on individuals' particular interests. Given the nature of these studies, a minimum of Biology 120 and Chemistry 110 is required; having a full year of both Biology and Chemistry is strongly encouraged.

BUSINESS

***Professor Les Dlabay
Young Hall 306
Ext. 5145; email: dlabay@lakeforest.edu***

Project 1: Dollarization: Global Currencies In Formal And Informal Settings (1 student)

The U.S. dollar is the official currency of El Salvador and Ecuador. More than 60 percent of U.S. paper currency is in circulation outside the United States. The euro is being used in many countries with less stable currencies.

Dollarization refers to the use of a country's currency in another country. For decades, economists and others have predicted the emergence of one or more global super-currencies. This project involves an analysis of existing and potential dollarization activities involving the U.S. dollar, the euro, the British pound, the yen, and others.

Richter Activities

1. IDENTIFY KEY ISSUES related to historic, economic, cultural, and political influences of dollarization and the emergence of the regional currencies.
2. LIBRARY, WEB RESEARCH to prepare summaries of background information regarding dollarization in various regional settings.
3. INTERVIEWS with people familiar with the culture and business environment in other countries.
4. WEB SITE DEVELOPMENT to plan the format and content for a web site with resources related to formal and informal dollarization.

Project 2: Ethnic Neighborhoods: Indicators Of Global Cultures And International Business Activities (1 student)

Every major city in the United States, along with many suburban areas, provides great insight into the culture and values of various ethnic groups. The foods, clothing, music, customs, and buying habits of ethnic groups provide a foundation for local and global business activities.

Richter Activities

1. IDENTIFY KEY ISSUES related to ethnic influences in the United States regarding global cultures.
2. CREATE ANALYTIC FRAMEWORK to identify the relationship among various cultural factors, buying behaviors, and global business activities.
3. LIBRARY, WEB RESEARCH to prepare summaries of background information regarding ethnic influences in the United States.

4. INTERVIEWS with people familiar with cultures and business activities of various ethnic groups.
5. FIELD OBSERVATIONS of ethnic retailing enterprises and cultural activities in Chicago and the suburbs.
6. WEB SITE DEVELOPMENT: To plan the format and content for a web site for reporting on the ethnic neighborhoods of Chicago.

Project 3: Doing Business In Africa: Cultural Foundations And Industry Trends (1 student)

Continued political unrest along with epidemic health concerns creates a very difficult business environment for much of Africa. In an attempt for companies and agencies to address these issues, foundation knowledge of African culture and business activities is vital.

Richter Activities

1. IDENTIFY KEY ISSUES related to economic development, trade relations, quality of life, and consumer behavior in various regions of Africa.
2. CREATE ANALYTIC FRAMEWORK to identify the relationship among various factors influencing business activities in Africa.
3. LIBRARY, WEB RESEARCH to prepare summaries of background information regarding the culture, trade relations, economic development, consumer behaviors, and quality of life in Africa.
4. INTERVIEWS with people familiar with the culture, political situation, and business environment in Africa.
5. WEB SITE DEVELOPMENT: To plan the format and content for a web site for reporting on how to do business in Africa.

CHEMISTRY

*Professor Dawn Wiser
Johnson Science Building-A301
Ext. 5092; email: wiser@lakeforest.edu*

Chemistry, Computers, Calculations: The Convergence of Science, Technology, and Math in Industrial Applications (1 student)

My research uses computer modeling to understand how the structure of a catalyst can affect the outcome of a catalytic reaction. The reactions of interest are called asymmetric reactions and are important to the *pharmaceutical* and *petrochemical* industries.

The recent availability of powerful and affordable desktop computers makes computer modeling of molecules a powerful research tool for chemists in industry and academia. Although the insight gained by computer modeling is remarkable, the full utility of this tool is realized only when computational results are combined with appropriate laboratory data. Richter scholars participating in this project will be directed and closely supervised by me, and will work closely with my upper level research students to gain valuable experience with the use of computer modeling here at Lake Forest College. Once appropriate data has been collected, students will have the opportunity to interact with my collaborators at the University of Chicago and the University of Wisconsin at Madison.

The goal of my research is to understand how to optimize the synthesis of metallocene and hydroformylation catalysts in order to increase their availability for use in the manufacture of specialty polymers and in pharmaceutical research. The project involves exploring the structural and energetic aspects of a series of known catalysts and then using this information to guide the synthesis of new catalysts. The project also involves the development of new methods to model chemical structure and energy.

A student working on this project will perform molecular modeling calculations using a variety of computer programs running on Mac OS X, Linux, and Unix operating systems. Interested students will gain valuable experience in understanding chemical structure and in developing skills in the area of computer modeling. The project is suitable to students interested in the intersection of chemistry, computers, mathematics, and/or physics. Necessary prerequisite material includes introductory chemistry and a willingness to use Macintosh, UNIX, and PC computers. As with all research, there will also be a significant amount of literature research.

COMMUNICATIONS

Professor David Park
Young Hall 416
Ext. 5149; email: park@lakeforest.edu

Internet and Satellite Radio (1 student)

I am currently working on a research project that involves internet and satellite radio. Internet and satellite radio have already yielded a large number of new channels for radio. Many of these channels are dedicated to programming from terrestrial radio stations. In particular, college radio stations and other small FM stations are an important part of the move to adjust to this new technology. With 30,000 internet radio stations available, and a number of new satellite radio channels, distinguishing a station's programming from the raft of competing stations becomes a crucial challenge. How do small FM stations adjust to the new world of internet programming? How can one station stand out from the surfeit of other options? How has the relationship with the audience been renegotiated? Do these new platforms for popular culture represent a departure from the top-down flow of music in terrestrial radio? What has happened to the sense of geographic specificity that has often been an important part of radio culture in the U.S.?

Student assistance on this project will involve the following:

- interviews with radio programmers
- application of a content analysis to online and satellite radio programming stations
- finding all of the current research on internet radio, and fitting this together with the tradition of radio studies

ECONOMICS

Professor Carolyn Tuttle

Young Hall 319

Ext. 5137; email: tuttle@lakeforest.edu

Economic Development of Mexico (1 student)

I propose to work with a Richter Scholar on my recent area of research – NAFTA, maquiladoras, and the economic development of Mexico. I spent my most recent sabbatical living with and interviewing people associated with the industrialization of Northern Mexico - the Mexican-American border. I collected 600 interviews of women who work in the maquiladoras in Nogales, the majority of them owned by American multinationals. The three main hypotheses to test using this data are:

- (1) Who are ideal maquila workers and why?
- (2) What are the demand and supply of labor factors which have led to an increase in the employment of women in maquilas?
- (3) Are the women in these maquilas exploited?

During the summer, questions 2 and 3 will be examined using the data and other documents, and interviews obtained while I was living in Mexico. The Richter Scholar would help in building the economic model of the labor market for Mexican women maquila workers as well as gather research to identify which demand and/or supply factors are relevant in this situation. In addition, the Richter Scholar would learn about the various definitions of exploitation (Hard Times definition, Marxian definition, and the capitalist definition) in an attempt to discern which type(s) exist, if any, for the women interviewed.

The culmination of the project will be one or two short papers that will become the basis of two of the five chapters of a book I am writing on the subject. The Richter Scholar should have some knowledge of Spanish, economics, and the issues of world poverty.

ENGLISH

Professor Jennifer Sampson
Carnegie 300
Ext. 5269; email: sampson@lakeforest.edu

Victorian Writers (1 student)

My research project for this summer will be for an article that will continue the work of my University of Chicago dissertation and help expand it to a book-length project.

The dissertation, which I will be defending this spring, examines the ways in which four Victorian writers (Charlotte Brontë, Charles Dickens, Alfred Tennyson, and William Makepeace Thackeray) sought a mediating presence between themselves and their larger reading public. This presence takes different forms; secretaries, critics, mentors, and even a dead friend all play the role of mediator between writer and public. Casting this mediating role in their lives with individual representatives of a larger public leads these writers to solve some anxieties about their works' reception and create others, but most importantly for my project it allows them to imagine a space of connection between writer and reader that I have termed *synglossic space*. This space is created when the author writes with the reader's process in mind and imagines a reader cognizant of the writer's process. The texts produced by these writers are, as a result, more than usually obsessed with dynamics of writing and reception and often attempt to educate their audience in how to read beneath the surface of the text. The novels and poems I examine are texts that not only yield to close reading but invite it, and I argue that it is the

creation of these texts which leads nineteenth century critics from criticism which judges the value of a text to criticism which seeks to uncover hidden meanings.

The article/book chapter I will be researching this summer will look at Wilkie Collins' concept of "The Unknown Public" of lower-class readers and his attempts to connect with this public through the mediating presence of his servant-class lover who appears in his texts as character, writer, and audience. A Richter Scholar assisting with my research would have the opportunity to help select relevant letters from Collins' correspondence and stories from his works that would be useful for my analysis. He or she would also work at locating and sometimes reading articles in nineteenth-century periodicals on class issues, on Collins' work, and written by Collins. The student might also locate manuscripts and, depending on local availability, accompany me for archival work. In positioning my theories in the canon of critical work on Collins, I would find it useful to discuss contemporary critical essays on Collins with the student. I would hope that in assisting me, a Richter Scholar might discover ideas of his or her own about Collins' work or the Victorian period that would prompt further personal research and writing.

There are no prerequisites for assisting with this project, though I would prefer a student with an interest in British Literature and some course work in the English department at LFC. I am happy to begin the project with some reading assignments for the student to provide any necessary background.

Professor Davis Schneiderman
Carnegie 205
Ext. 5282; email: dschneid@lakeforest.edu

Project 1: Exquisite Corpse Anthology/Project (1 student)

Together with Lake Forest College Art Professor Tom Denlinger and Academic Technology Specialist David Levinson, as well as representatives from two other ACM colleges, I have been facilitating an update of the Surrealist parlor game of Exquisite Corpse. The update consists of the electronic transfer of artistic 'texts', with responses generated by a different student at each transfer point. For instance, a student in my creative writing class might produce a one-page text, which once uploaded onto the Corpse server at LFC, would then be accessed by a student at Monmouth College. That student might produce a digital image in response to the text, and the resulting image would then be sent to a student at Colorado College, who would respond in kind. The finished Corpses are on display at <http://nutmeg.durand.lfc.edu/corpse/gallery.html>, and the Corpse planning group (all faculty and staff from the participating colleges) are working to expand the project for the 2003-04 academic year.

Thus, the first part of this project would entail a Richter Scholar providing support for the expansion of the project through research on the Exquisite Corpse, and potential technologies that might be used to update the cross-campus collaboration. The Richter Scholar will serve as a program assistant for a small summer planning conference for the Corpse group, and will be able to participate directly in the shape of future iterations of the project.

The second part of this project involves my co-editorship on a proposed book anthology about the Exquisite Corpse. Tom Denlinger and I are writing a chapter about the MITC-funded version (above), and along with two other editors, are preparing a book proposal that deals with the historical models of the Corpse, as well as with more recent updates. There is a significant amount of interest from the academic field, and the four editors are in the process of finalizing which proposals to accept.

The Richter Scholar would thus conduct research to assist in the editorial work, researching and discussing with me a large body of literature about the Surrealists, the Exquisite Corpse game, and a related literary group called the Oulipo. The summer work would serve as a primer in this branch of collaborative aesthetics, and the student would be able to have influence, directly, in the development of the anthology. Previous Richter Scholars have worked with me in a similar capacity on the book, *Retaking the Universe: William S. Burroughs in the Age of Globalization*.

The ideal student will have an interest in literature and art, and will perhaps have completed at least one course that deals, in part, with either of these topics in the 20th century. Of course, some familiarity with the work of the Surrealists and/or new Web technologies would be welcome, but is not absolutely necessary.

Project 2: Literary and Cultural Copyright (1 student)

I am starting to research a large project considering literary copyright and literary theft, within the context of contemporary issues of corporate ownership (music downloading, fan fiction, etc.). This project calls for a student interested in collecting material on the development of literary copyright, the rise of the “author” in the 1700s-1900s, as well as the implications of ownership standards on consumerism. The Richter Scholar will help develop a list of primary and secondary materials that investigate the ways that corporate leveraging of copyright law (in music sampling, in book publishing, and in advertising) dovetails with artistic production, and the possibilities of artistic production within the limits of the law.

On the literary side, I am particularly interested in researching writers who routinely “borrow” previously published work (Walter Benjamin, Kathy Acker, William S. Burroughs), and the ways in which they attempt to subvert copyright law.

On the more current side, for example, the musician Beck routinely “samples” from a variety of sources for each of his albums. Backed by a large record company (Geffen/BMG), he is able to cover the copyright usage fees. In 1998, a group of underground musicians released a CD called *Deconstructing Beck*, which mixed Beck songs *without* clearing any fees. Beck’s label threatened to sue the makers of the CD, until the company realized that public debate about the way transnational capital/money authorizes only certain people to make sample-driven music was exactly the point of the *Deconstructing Beck* project. Thus, this Richter project will entail making connections between the literary and cultural spheres, and may also involve interviewing professionals in the field of copyright law (professors, lawyers, etc).

The ideal student will be motivated to develop her own research directions, and will be interested in linking literature to broader social enterprises.

Professor Benjamin Goluboff
Carnegie 206

Ext. 5270; email: goluboff@lakeforest.edu

Project 1: John Updike: The Horticultural Imagination (1 student)

The author of more than thirty volumes of fiction, verse, drama, and criticism, John Updike is one of the most prolific and distinguished American writers of the twentieth century. Best known for realist novels about middle class American lives (*Rabbit Run*, 1960, *Memories of the Ford Administration* 1994), Updike chronicles the American scene with an exacting fidelity to details of setting and milieu. Updike's many readers and critics have largely overlooked, however, the close attention he pays to some of the important non-human components in those milieus: plants and gardens. Indeed Updike's imagination is sharply focused on the horticultural world. Plants in the novels act as components of setting, as characterizing agents, and sometimes virtually as characters in their own right. The Richter Scholar working with me this summer will read widely in Updike's novels and short fiction, will perform a survey of major Updike criticism to date, and help me formulate an interpretive thesis on plants in Updike's fiction.

Project 2: Clergymen in Howells (1 student)

Friend of Henry James and Mark Twain, American novelist William Dean Howells (1837-1920) made significant contributions to the tradition of the realist novel in this country, and to the evolution of American literary taste. Howells's more than two dozen novels range widely over a variety of themes and settings in American life. Again and again, however, these novels offer readers portraits of clergymen. The typical Howells clergyman is compassionate and ineffectual, socially progressive and personally conservative. The confusion of the characters may

reflect Howells's sense of the contradictions in the religious culture of his day. The Richter working with me this summer will read widely in Howells's fiction, assemble a bibliography of contemporary scholarship on Howells, and help me formulate a thesis on the clergymen in his fictions.

HISTORY

Professor Michael Ebner

Young Hall 514

Ext. 5135; email: ebner@lakeforest.edu

Using the WWW to Teach American History (1-2 students)

I wish to work with a student (or students) knowledgeable about the development of innovative technological applications for classroom instruction in American history.

The student(s) will work on multiple projects during the course of the summer:

- # upgrading digitization of a American history slide library, currently consisting of more than 2,000 images
<http://campus.lakeforest.edu/%7Eebner/Images.html>
- # constructing interactive web-based syllabi for several history courses (e.g., Foundations of the American Republic, Modern America, American Cities, History of Sport, and Theory & Methods).
<http://campus.lakeforest.edu/%7Eebner/courses.html>
- # construct web-based classroom course assignments, to be integrated into the day-by-day course syllabi.
<http://campus.lakeforest.edu/%7Eebner/courses.html>
- # maintaining a home page for Professor Ebner. <http://www.lfc.edu/~ebner>

Professor Steve Rosswurm

Young Hall 515

Ext. 5151; email: rosswurm@lakeforest.edu

Waukegan and the World: From Pre-Invasion to the Present (1-2 students)

I am convinced not only that Waukegan's history makes most sense within the context of the larger world in which it was embedded, but also that the lives of Waukeganites were inextricably linked to many about whom they knew nothing.

For example: the "discovery" of the "New World" had a major impact on the area's indigenous people; the development of industrial capitalism in Europe (and later the US) significantly influenced the ways in which the lakefront was used; Canadian miners dug the asbestos for the Johns-Manville plant in the city; NAFTA sufficiently altered Mexico's political economy so that Waukegan became an attractive option for workers from La Luz and Tonicico.

My goals for this summer include: the creation of a basic bibliography of secondary and primary works on Waukegan and Lake County history; the development of the world connections that need to be investigated; the production of a set of photographic sources. My ultimate goals include: the teaching of a Lake Forest College course on the local, the national, and the transnational that would feature Waukegan and other similar Midwestern cities; the writing of a book on Waukegan and the world; the creation of a web site that would provide sources for local teachers.

I hope to involve at least one student, but could easily involve more. No particular skills are required: Waukegan has three Superfund Sites, so I need science skills; Waukegan has many Spanish-speaking residents, so I need language skills; Waukegan has a literary tradition, so I could use literature skills, etc. My goals for this coming summer also are flexible. I can find an important undertaking for anyone interested in this project.

MATHEMATICS/COMPUTER SCIENCE

Professor Joseph Hummel
Young Hall 218
Ext. 5156; email: hummel@lakeforest.edu

Data Structure Visualization (1-3 students)

Visualization is an important mechanism for learning in many fields, including Computer Science. The ability to “see” how an algorithm works or how a data structure is implemented is crucial to understanding how computers operate in general. For most students in CS, visualization is key to mastering the fundamental concepts.

Data structures are one of the fundamental concepts in Computer Science. Arrays, linked-lists, trees and graphs are just a few of the commonly used structures for storing data within the computer. The correct data structure can enable a straightforward and efficient solution to a difficult problem; the wrong data structure can prevent you from solving the problem at all. One of the challenges for

students is learning the various types of data structures, their implementations, and their associated algorithms. This is where visualization comes in.

The focus of this research project is to design and implement data structure visualization software for integration into Visual Studio .NET. Visual Studio is the primary software development environment used by our students, as well as professionals throughout the world. Visual Studio is designed to allow such integration, but to date very few people have taken advantage of this powerful capability. I would like to change that by developing a set of data structure visualizers for students, faculty and professionals alike. This research project requires programming skills on the level of CS 212 (basic data structures and OOP). Knowledge of computer graphics is a plus, but certainly not required.

PHYSICS

Professor Nathan Mueggenburg
Johnson Science Building-A130
Ext. 5164; email: mueggenb@lakeforest.edu

Compaction of Granular Materials (1 student)

At first glance it may seem that granular materials are rather simple. They are merely a collection of discrete macroscopic particles. We encounter such materials quite often as we go about our daily lives. We use salt at the dinner table, and we walk across the sand at the beach. Farmers store and transport grain and the pharmaceutical industry mixes and packages powdered medicines. Yet, such prevalence in our society does not imply simplicity, and does not imply that these materials are well understood. This project explores one aspect of the unusual behavior of granular materials.

Unlike ordinary solids and fluids, the density of a granular material is not a static property of the material and its current environment, but also depends on the history of the packing. We encounter this phenomenon when we open a new box of cereal, and find the container nearly half empty. Lest we think that we have been ripped off, the side of the box has a disclaimer stating that some settling may have occurred during shipping. Vibrations during transport cause the particles to rearrange and result in a more compact configuration. The number of particles in the box has not changed, but the density of the packing has increased. This concept of compaction, is ubiquitous in granular materials, and is crucially important in engineering.

A Richter Scholar will explore the phenomenon of granular compaction with controlled laboratory experiments. Using an electromagnetic shaker (similar to a speaker) the student will test the dependence of compaction on the distribution of particle sizes and on dilatancy (the idea that in order for the packing to rearrange, it must be able to expand). Some knowledge of general physics will be useful, but the student does not need to have had extensive experimental or theoretical training. He/She needs only a desire to understand the physics behind this common, but perplexing phenomenon.

POLITICS

Professor James Marquardt
Young Hall
Ext. 5126; email: marquard@lakeforest.edu

Transparency, Governance, and American Foreign Policy (1 student)

Transparency is the idea that the affairs of nation-states should be subject to outside scrutiny. It is a powerful idea in international relations today. Many attribute it to the “openness” that characterizes the political institutions of established democracies, which have an obligation to be open and accountable to the people. Transparency is also consistent with the liberal tradition of the separation of powers, as it serves to regulate the activities of powerful actors in society. This identity of democratic, liberal states has given rise to a new international norm that some say is supplanting the idea of sovereignty, the notion that states are free to conduct their internal affairs as they see fit and without external interference.

I am studying the role of transparency as a confidence-building measure in United States national security policy since 1945. It is my view that the conventional wisdom, as noted above, captures only one aspect of a larger picture about transparency and foreign policy. I am interested in the more overtly political aspects of transparency—why some states support it and why others oppose it. I want to advance a more critical and value-neutral understanding of the role of transparency in U.S. foreign policy.

The research project I will pursue next summer address transparency and American domestic governance, and how the practice of transparency at home may influence the conduct of American foreign policy abroad.

The student assisting me in this research should have an interest in political theory, American government, and U.S. diplomatic history.

PSYCHOLOGY

Professor Robert Glassman

Hotchkiss Hall 11

Ext. 5257; email: glassman@lakeforest.edu

Short-Term Memory, Long-Term Memory, The Rhythms Of Brain Waves, And The “Rhythm” Of Cognitive Growth (1-2 students)

Our long-term memories are vast - so why is the capacity of immediate memory only about seven independent items - the so-called “magical number 7 ± 2 ”? The typical psychology class demonstration involves keeping in mind seven random digits or short words. Indeed, our capacity is even smaller – only about three or four – under certain attention-absorbing conditions. Are we so “narrow-minded” because of limitations of brain function? Or did working memory capacity evolve small because of the logic of cognition, in decision making or mental development? Are people the same as other animals, in this respect? What are our brain waves doing while we are holding “chunks” in memory?

At Lake Forest College we have been doing research and sometimes publishing papers coauthored by undergraduates on these matters. This year the following projects are available:

1. **Computer programming for brain wave recording and analysis.** We will further develop programs written in LabVIEW, a computer language that is almost entirely iconic, or pictorial, for recording EEG activity during various memory tasks, and for analyzing EEG waves to see if they have properties analogous to musical harmonies.
2. **Computerized testing of human working memory.** We will systematically record capacity using a “virtual radial maze,” a standard digit span test, and a reaction time test involving memory for pictures. We will compare results to earlier ones in which people responded in certain outdoor hide-and-find situations.
3. **“Subitizing.”** How many objects can you discriminate when they are seen only during a 1/10 second flash? Is the result influenced by the size, shape, and color of the objects? We will compare computer-testing results to an old-fashioned technique, mentioned by William James in his late 1800s book, of looking at marbles in a box.
4. **Lab rats in a radial maze.** The “radial-arm maze,” in which a rat seeks pieces of food in eight short alleyways, is often used to study how the brain processes memories. There is also promise of learning things important in

the study of Alzheimer's Disease, disorders of chronic alcoholism, learning disabilities, etc. We will replicate the standard procedure, and discuss issues of animal and human research. Students who wish to put in extra time and effort may also carry out experiments recording brain waves or single neuron action potentials.

5. **Do crayfish have a memory?** An animal that has as much central nervous system as a crawdad does *must* have a memory! For several years we have sought a way to demonstrate that, using various behavioral techniques, but we still need to better figure out "how to think like a mudbug." Maybe this is the year we will crack this mystery. I have also been in touch with scientists in Mexico City, who have developed techniques for recording brain waves from crayfish during sleep and wakefulness. These are also techniques that would require interested undergraduates to put in extra time learning the fine art of microsurgery.

Professor Burton F. Krain

Hotchkiss 12

Ext. 5258; email: krain@lakeforest.edu

(Project Director: Burton F. Krain, Ph.D., CPT, Director of Human and Organizational Performance, Naval Service Training Command, Great Lakes, IL)

Mapping Navy Competencies to Performance Measures for Officer and Enlisted Personnel (2-3 students)

The Navy has undertaken an initiative to define the competencies of a sailor in the United States Navy. To date, ten mega-competencies have been identified and their relationship to successful performance is in the process of being empirically determined. Our project team has been leading this effort for the Navy's Accession Command (Naval Service Training Command) and has been actively engaged in developing a competency data dictionary to fully explore and document the relationship between observable behaviors and performance outcomes. Much of our work has taken us into exploring the affective domain (Bloom's taxonomy), since the primary work of accessions is to get our recruits and officer candidates ready to accept Navy core values, attitudes and beliefs to perform their functions as United States sailors.

Role of a Richter Scholar: The ideal candidate(s) would have an interest in psychology and the field of business. Having a foundational course or two in psychology, business, research or statistics would be highly desirable. We can provide the model for human performance technology that we work from, and based on the quality of students attracted to this program, they should be able to quickly pick up on our efforts and work with our team of master's-degree-level staff to carry out applied research under close supervision. Currently, we are developing notional

proposals to collect “critical incident” samples and develop “job-simulation” exercises to capture actual performance of our accession graduates in both the officer and enlisted community. We expect that once these measures are fully developed we will be able to pilot these to collect actual performance data and collect follow-on performance indicators (fitness reports) to draw correlation relationships and further our efforts.

Need for Personnel: The nature of our project work involves a multiple-pronged effort, which includes module development, piloting, data analysis and project write-ups. For this reason, we could probably accommodate between two and three such scholars to assist us in this work effort.

Considerations: The work/research experience we provide is real-time, applied work in the field of human performance technology and industrial/organizational psychology. Students who develop a passion for our efforts sometimes go on to major in the area post-college graduation. We offer a nurturing environment with support and assistance from myself and my very talented staff of professionals. Our work is “cutting edge” research and application. Our “living laboratory” is located only ten minutes from Lake Forest College and provides an ideal work setting for someone developing an interest in the field of human behavior, psychology and business as applied to a not-for-profit organization.

Professor David Krantz

Hotchkiss 12

Ext. 5258; email: krantz@lakeforest.edu

Project 1: Research Methods (1 student)

This summer’s project involves developing materials for teaching research methodology to students who need to acquire the foundational skills of analyzing and interpreting their observations. Having taught research methods in a number of non-Western settings, I found it necessary to lay a foundation of such skills based in everyday experience before I could present the technical ideas of control, confound, chance etc. We will be developing experiential assignments to teach these skills based upon our reading and discussion of philosophical and scientific thinking as to what is involved in the research process. Students with interest in philosophy and research (whatever the field) would find this work of particular interest.

Project 2: Detecting Influence (1 student)

How do we know that an idea or an individual has had an influence on another? In this project we will explore this question in regard to scientific ideas particularly assessing various ways influence is indexed. A content analysis of a recent book, *Anatomy of Impact*, will provide the source for analyzing how influence is

considered. This project will be of major interest to students in history, philosophy and the social sciences.

RELIGION

Professor Herbert Bronstein

Reid Hall 3

Ext. 5138; email: bronstein@lakeforest.edu

Project 1: The Periodization of Historic Time: Ideologies and Social Systems (1-2 students)

1. I am proposing continuing research on the thesis that all schemes of periodizing history or "earthly time," such as Ancient/Medieval/Modern, similarly to BC/AD, are ideological in origin and are socially constructed, whether cyclical or linear. Beginning in ancient times and proceeding into our own century, intellectual elites have endeavored to find or impose some order on the flow of time through the segmentation of history or mundane time into eons or epochs with clear-cut divisions. The thesis is that each periodization of the flow of time can be seen as the crystallization of the world view from which that periodization has issued. One or two students could help me very very much to explore various systems of periodization, depending on the interest and background of the student(s). No prior classes are required, though I will ask the student to read certain texts. A value of this research area is the wide scope it provides, allowing for particular student interests; another, that there is one other factor that would be of help to me. Many of the students have a competence with the Internet which I do not (!), and therefore there could be good teamwork involved.

I suppose the entire project could be entitled "The Periodization of Historic Time: Ideologies and Social Systems." After briefly sketching the time-scheme in which the particular student is interested, I can show her or him how to research the ideological correlates and their relations, if any, to social and institutional structures.

Further, an awareness of the ideological determinants of a particular scheme of periodization of history and their social-structure correlates helps to develop critical acumen in cultural and intellectual studies: a perception of the distorting and even damaging effects of variously imposed templates of periodization. And also the student can be helped to see that behind any system of periodization lurk assumptions about causation, that is, about "fundamental" and "secondary" or "derivative" factors that produce these schemes, or determinants of human culture in history. Various critical methodologies could be demonstrated.

Project 2: Center Symbolism As A Religious Motif In Shakespeare (1-2 students)

In certain of Shakespeare's works (Othello, Macbeth, etc.) it appears that the center symbolism of ancient religious cosmologies relating to the maintenance of the order of the world and the normal natural cycles is endowed by Shakespeare with moral significance. The student would first read certain of Herbert Bronstein's published articles for background and then work with him to research either renaissance references to this symbolism or correlations in various passages in the Shakesperian texts and/or the commentaries to particular passages in Shakespeare.

I have already published an initial statement on this in a book called *Time, Order, Chaos*, (ed. Frazer, Soulsby) but I want to develop a book-sized work on this project and whoever works with me will, of course, be given credit for the work accomplished in that respect as well.

Professor Ron Miller
Reid Hall 207
Ext. 5175; email: rmiller@lakeforest.edu

The Apostle Paul (1-2 students)

New research on the historical Jesus has thrown the figure of Paul into a new light as well. Is he the faithful apostle of Christianity or is he its founder? Is he faithful to the teachings of Jesus or does he introduce his own agenda and give Jesus a new meaning? Many new and provocative studies are being written on Paul and it would be the task of the Richter Scholar to work with me in developing a bibliography of some of these new books and articles and to begin to develop a portrait of Paul as he emerges from this literature.

There is no language requirement for this job but it would help if the Richter Scholar had some background in Christianity and some familiarity with the letters of Paul in the New Testament. Most important, however, would be an interest in this kind of research and a willingness to be immersed in this literature.

THEATER

Professor Dennis Mae
Hixon Hall 202

Ext. 5141; email: mae@lakeforest.edu

Project 1: Visual Research (1-3 students)

This Scholar would research the historical, political and cultural influences as well as the visual elements as background for one of the 2005-2006 Garrick Players productions. The student would serve as an assistant to the designer. The objective of this project is to generate research documentation and analysis for one or more of the three major productions, each set in a different time period. The student may also assist in the creation of set renderings and costume plates for the production. A short paper may be presented by the student at the panel discussion after the final performance. Research materials will also be part of a lobby display on the historical period of the play. No special skills are required but an interest or ability in illustration could be a plus.

Project 2: Making a Musical (1 student)

This project consists of research on and adaptation of an accepted classic stage work into a contemporary musical theater work. Titles under consideration include: "Idiot's Delight" by Sherwood, "The Tempest" by Shakespeare, "The Would-be Gentleman" by Molière, "She Would if She Could" by Etheredge, and others, including student suggestions.

Research includes standard dramaturgical inquiry into the literary and production history of the work(s) chosen. Period versus contemporary production options are to be explored. Selection of music, songs, and overall musical styles/adaptation from contemporary "popular" music genres including rock, alternative, dance, hip-hop, rap, country, metal, grunge, house/club, etc.

Student(s) will assist in the selection of songs, song placement in the text, text editing, lyric writing/adaptation, etc.

Performance and/or publication is an expected outcome of this project.

Professor Richard Pettengill

Carnegie Hall 101

Ext. 5148; email: pettengi@lakeforest.edu

Wild Shakespeare: Radical Stagings into Film (1 student)

How is it that some of the most innovative directorial approaches to Shakespeare – often controversial when first put on stage – end up making their way to film and video and long-term critical acclaim? This summer, come help me think about a number of radical film interpretations of Shakespeare's plays by major British and American directors – including Peter Brooks' *King Lear*, Julie Taymor's *Titus*,

Richard Loncraine's *Richard III*, Robert Woodruff's *The Comedy of Errors*, and Michael Bogdanov's *Macbeth*. We'll be tracing not only the genesis of each production concept and the stage to screen process, but also the critical reception of both versions of each production. The result should be a fascinating study of directors working to ensure the cinematic permanence of what might otherwise have disappeared after the theatrical run.

This summer let's read, discuss, research -- and watch provocative films of -- some of the most incredible plays ever written.

(Richard Pettengill is Assistant Professor of English and Theater at Lake Forest College.)