

Faculty Fellowships 1999-2002

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BARBARA C. BEAN

Associate Professor of English

DREAM HOUSE: A COLLECTION OF STORIES

For this project I will write three to six short stories linked by the theme of architecture. This idea grew out of a story I wrote that was published in the Colorado Review, (Spring, 1998) called "Dream House." Using this story as the foundation, I plan to rewrite my story "Perfect Heart" (Laurel Review, Spring, 1998) and a new story I have been working on called "Sugar Creek" to fit the architecture theme more fully. In addition to revising those two existing stories, I have in mind three new stories that I would work on each of the three years of the fellowship. The first story is about the house where I grew up in Iowa built in 1870; my mother grew up in the same house, and her aunts and uncles all lived there at one time. The second story I want to write is about an apartment in a house where three friends live the summer after college. The third story is about a farm house two women own in Crawford County, Wisconsin. The three new stories, the two revised stories, and "Dream House" would form the nucleus of a new book manuscript. I have always been fascinated by houses and they have often figured in my stories, usually in subtle ways. My fiction is about crossing boundaries, breaking rules, transgression. I am interested in the forbidden, the private, the intimate. These stories would be about reinventing relationships and the necessity of being unconventional, of imagining new spaces, new kinds of architecture, especially for women. This project, "Dream House", is a way for me to give form to these concerns.

JAMES H. BENEDIX, JR.

Associate Professor of Biological Sciences

**THE CONFLICT BETWEEN CONTENT AND PROCESS IN THE LECTURE:
TECHNIQUES FOR REDUCING TRADE-OFF COSTS IN INTRODUCTORY
BIOLOGY**

It is generally believed among science educators that teaching techniques promoting active learning are more effective than those in which the students play a more passive role, such as traditional lectures. However, most active learning techniques are time consuming and therefore lead to a reduction in the absolute amount of material that may be covered in a given course. This creates a conflict for introductory biology where active learning is particularly important but mastery of course content is an important goal to prepare students for advanced studies in this diverse field. In this project I will research teaching techniques and develop exercises for introductory biology that will foster active learning while achieving as much as possible of the desired mastery of course content. I will adapt techniques and exercises from a variety of sources as well as developing some exercises de novo. The success of the techniques will be assessed using paired class sections taught by the same instructor in the same semester. Individual exercises dealing with different topics will each be assigned to one or the other section so that each section experiences the same number of active learning exercises. For each topic covered, one section will be exposed to the topic using an active learning method while the other will be taught using a traditional lecture format. Student performance on exam questions relating to each of the topic areas will be compared to determine if the new method was more effective. A booklet describing exercises that work in specific situations will be produced as well as a presentation of the results to the DePauw faculty. The overall goal will be to enhance the introductory biology experience of our students while continuing to give them as broad a background as possible in preparation for advanced studies.

YUNG-CHEN CHIANG

Associate Professor of History

**EDUCATING "PILLARS OF STATE" IN "THE LAND OF THE FREE":
CHINESE STUDENTS IN THE UNITED STATES, 1905-1931**

This project engages both the dominant and emerging revisionist interpretations in American academia of the history of the Chinese students educated in the United States in the early 20th Century. The dominant interpretation paints an unflattering composite sketch of the students: mediocre academic records, alienation from Chinese culture, mismatch between their fields of study and the needs of the Chinese society, inordinate ambitions incommensurate with their abilities, and desertion of their moral and political leadership in society. The revisionist school, reflecting the current outward-looking reform ideology in China, portrays the students as liberal and patriotic torchbearers in China's tortuous search for modernization who were frustrated in their efforts by the social, political, and economic forces that were beyond their control.

This project proposes to build upon the strengths of the old school while correcting and superseding it with a fuller and more nuanced interpretation by concentrating on five major themes. The first concerns the students' political conservatism and their conviction that they were destined to become leaders of the nation upon their return. Second, they were incurable Amerophiles in spite of the discriminatory laws and sentiments they encountered while in the United States. Third, they approached political and international conflicts as if they were amenable to reasoning and debate, much as what they did in their college debates and student government. Fourth, they participated, while negotiating and contesting with Western orientalist, in the construction of orientalist images of China that would become so embedded and saturated in popular as well as academic discourses on China that they have been taken for truths rather than mere constructs. The fifth theme concerns women students and gender relations. Their fields of study and their difficulty in overcoming the division between marriage and career were consistent with what their American sisters had experienced until the 1920s.

ISTVAN CSICSERY-RONAY, JR.

Professor of English

PROJECT PROPOSAL: THE SEVEN BEAUTIES OF SCIENCE FICTION

The Seven Beauties of Science Fiction is a book-length project which will discuss seven major features that I will argue distinguish sf among other literary and cinema/video genres. Each of these features will be analyzed in terms of its history within Euro-American literature and the genre, in its social-historical context, and with an eye toward the complex interaction between the generic rules (or "protocols") of sf and a social attitude in the real contemporary world that I have called science fictionality. My thesis is that fiction articulates a mode of consciousness that has developed in the advanced technological societies of the 20th century (the US, Britain, Russia, Japan, and France). This mode - the science-fictional - is characterized by a complex attitude toward the increasingly rapid inundation of social life with scientific and technical innovations, which are linked closely to social innovations. Science fictionality simultaneously involves the acknowledgment that sweeping, society-transforming innovations are inexorable, and the imaginative labor of trying to re-code these transformations into a manageable structure (usually narrative, but often visual). This mode might be called quintessentially hyper-modern or post-modern, since it accepts as an existential given what modernists thought considered a theoretical possibility: namely, that technological innovation can transform material conditions to a degree that previous societies would have considered beyond human powers. Thus contemporary inhabitants of the developed North know that it is within human power to destroy the biosphere, to create genetic doubles, to fuse machines and organic matter, to construct machines that calculate infinitely faster than humans, and they would not be surprised to learn of human technologies that can create life or even alternative spheres of existence (such as Artificial Life), to control minds from a distance, and to engineer organic evolution. Each of these developments alone affects fundamental values of human societies, yet we live in an age when value-transforming technologies converge at rapid pace. The science-fictional response to this is to accept social-technological transformation as an ineluctable given, while imaginatively, even playfully managing the sense of technological fatedness through micro-myths of science-fictional art.

The seven aspects I will consider are: fictional neologism, the fictional innovation (or novum), historical futurism (conceiving the future as emerging from present conditions), scientific impertinence (the playful use of impossible scientific concepts), the scientific grotesque (use of imagery involving extravagant combinations of incompatible concepts), the scientific-sublime chronotope (timespace settings that draw on forms of sublimity), and technoscientific allegory (narratives that depict the history of technology as moral allegory). Each chapter of The Seven Beauties will discuss one of the features, explaining its historical provenance and discussing its manifestation in sf texts. The texts will be classical sf novels and stories, films, and television programs, taken from US, British, French, Polish, Russian and Japanese sources.

WILLIAM P. HARMAN

Professor of Religious Studies

**"PROMISING GODS AND GODDESSES: THE VOW IN SOUTH ASIAN
RELIGIOUS TRADITIONS"**

An unusually wide array of religious activity in South Asia can be analyzed and explained in the context of what English speakers would call "the religious vow." We find this activity among Hindus, Christians, Muslims, Buddhists, Jains, and Sikhs. Cutting deals, striking bargains, entering into covenants -- being or becoming involved in relationships characterized by varying and variable obligations between humans and perceived supernatural powers: these are common ways to characterize human interaction with the supernatural. Individuals or groups often accept certain obligations and responsibilities to the supernatural in return for a benefit either received, assumed, expected, or requested and thereafter anticipated. This interaction often implies obligation on the part of supernatural powers involved. The act of stipulating consciously, though not necessarily publicly, the terms of these obligations I understand to be the act of entering into a religious vow. Specifically, a religious vow is an understood (and sometimes publicly expressed) relationship of obligation between humans and the supernatural. Because the intensity of the relationship varies, it can involve what we might perceive as a "deal" or a "bargain." Included normally would be a mortal and a perceived supernatural power, either of which can be reported as having initiated the vow. It also involves a specific articulated desire, or a diffuse sense of appropriateness on the part of the one initiating it.

In the edited volume I propose, we intend to assemble the varied expertises of 12 to 14 specialists in South Asian religions, and to make their scholarship on the topic of vows in Hinduism, Buddhism, Islam, Christianity, and Jainism in various parts of South Asia available to a wide scholarly audience.

WADE N. HAZEL

Professor of Biological Sciences

**THE ECOLOGY AND GENETICS OF SEASONAL CHANGE IN THE
COLORATION OF EASTERN BLACK SWALLOWTAIL BUTTERFLY
CATERPILLARS**

Phenotypic plasticity is the ability of individuals to alter their characteristics in response to their environment. Because an understanding of phenotypic plasticity addresses problems of concern to geneticists, ecologists, developmental biologists and evolutionary biologists, it is an area of intense empirical and theoretical interest. For plasticity to be advantageous in an evolutionary sense, the response to the environment must increase average reproductive success given the sorts of environments an organism is likely to occupy. In addition, for plasticity to evolve, it must have a genetic basis (i.e. some of the differences among organisms in how they respond to the environment must be genetic). There are, however, few cases of plasticity for which the environmental control, genetic basis and adaptive significance of the plastic trait are well understood. Previous unpublished research in my laboratory has shown that the production of dark caterpillars in the autumn by the eastern black swallowtail butterfly is a genetically based, plastic response to rearing temperature and daylength. This proposal asks for released time to prepare these unpublished results for publication and to support studies designed to test hypotheses for the adaptive significance of the production of dark caterpillars in the autumn. The proposed research will test the hypothesis that the advantage of producing dark caterpillars in the autumn lies in the effect coloration has on body temperature and growth rate. Therefore, the research will examine the effects of larval coloration on body temperature and growth rate under natural and artificial lighting in the laboratory and in the field in the autumn. Specifically, this hypothesis predicts that dark caterpillars more effectively absorb solar energy, will have a higher body temperature in natural and artificial sunlight, and will grow more rapidly in autumn than will light colored caterpillars.

MITCHELL B. MERBACK

Assistant Professor of Art History

PILGRIMAGE AND POGROM: THE VISUAL CULTURE OF ANTI-JUDAISM IN LATER MEDIEVAL GERMANY

Pilgrimage and Pogrom studies the wide range of images that reflected and activated the dominant discourses of anti-Judaism in the period between 1300 and the advent of the Reformation in Germany. In this era violence against Jews found expression in converging symbolic and actual forms: the mass burnings of the plague era; the patriotic crusades against the domestic "enemies" of Christ; the accusations of ritual child murder or Host desecration; the tightening restrictions on Jews economic and social freedoms, and the challenges to their political protections by urban magistrates. Linking these processes were networks of beliefs and rumors, fears and fantasies, folkloric and learned discourses about the Jews and the "Jewish question." Art historians have studied the many ways Christian art has worked to sustain and inform these discourses. Passion iconography offered stereotyped representations of the wicked Jews as Christ's tormentors, while elsewhere allegorical images of the antithesis of Church and Synagogue conveyed the triumph of the New Dispensation over the Old Law. While acknowledging the importance of such symbolic and stereotyped representations, Pilgrimage and Pogrom will extend beyond the symbolic violence done through images, to the ways in which actual violence may have been sanctioned and provoked by images. In south Germany, the primary context for this relation between art and violence is a species of pilgrimage shrine, founded on the site of a destroyed synagogue, or in the aftermath of a pogrom. In the rural shrines dedicated to the "bleeding Host," the ancient story of Jewish guilt for the Crucifixion of Christ suffused the whole economy of violence, symbolic and real, upon which the shrine was founded. During the heyday of the antisemitic cult of the Schöne Maria, cities such as Munich and Nuremberg saw churches dedicated to the "conquering Virgin" built to replace synagogues. By studying the cultic and narrative imagery of these shrines, Pilgrimage and Pogrom will reveal the manifold ways Christian devotional art and popular piety were used polemically to deepen the historic antagonisms towards the Jews and Judaism – antagonisms that centuries later, would be easily exploited during Germany's self-mobilization for mass murder.

SUNIL K. SAHU

Associate Professor of Political Science

PROJECT TITLE: POLITICAL SCIENCE FOR THE NEW MILLENNIUM

I propose to do two interrelated things over the three-year term of the Faculty Fellowship. First, I will undertake a thorough revision of two of my existing courses-International Politics (POLS 270, a required political science course for all majors) and Politics of Developing Nations (POLS 352, an upper-level elective course in the area of my specialization)-in terms of their content, methodology, and format. Second, I will enrich the course offerings of the political science department by designing an important new course, Contemporary Political Ideologies, already approved by the department. The new course, to be offered in AY2000-2001, will introduce students to the emerging new ideologies of the last two decades-Religious Fundamentalism (Islamic, Christian and Hindu), Nationalism, Globalization, Environmental Movement, Liberation Theology, and Feminism, in addition to the other prominent twentieth-century ideologies such as Socialism and Marxism, Fascism and Nazism, Liberalism and Conservatism, and Third World ideologies.

FREDERICK M. SOSTER

Professor of Geosciences

MEASURING FLOODPLAIN SEDIMENTATION RATES USING FALLOUT LEAD-210

Human activities generate pollutant materials (contaminants) that are released into the environment. Some contaminants persist in the environment for years, decades, or even centuries. Many contaminants are adsorbed (attached) onto fine-grained particles in soils that are eventually eroded from the land surface and transported as fine suspended sediments via stream flow. Consequently, these contaminants may have profound impacts on areas that are distal from the source. Understanding and predicting the long-term fate of contaminants in river systems is not possible without detailed knowledge about the movement and storage of river sediments. Most sediment that is transported by rivers is suspended sediment and most suspended sediment is transported during flood events. During flood events, a portion of the suspended sediment is deposited outside the river channel on the floodplain. Thus, storage in the floodplain represents a potentially important long-term sink for fine sediment and associated contaminants.

Recent studies have demonstrated the feasibility of using the naturally occurring lead-210 radioisotope to determine the historical rate at which sediment accumulates on a floodplain. I propose to begin an investigation designed to determine floodplain sedimentation rates along the Yellowstone River in Wyoming and Montana. I will develop sampling methods and laboratory techniques that will provide lead-210 data from floodplain cores collected along 900 km of the river. These data will enable me to determine what fraction of fine sediment eroded from the drainage basin is sequestered in the floodplain. The significance of the proposed project is that it promises to provide important information about sediment storage and about the long-term fate of contaminants in the Yellowstone River drainage basin, where natural resource exploitation is underway and where the likelihood that additional contaminants will be released into the environment is high.

PAUL B. WATT

Professor of Religious Studies and Asian Studies

**APOCALYPTIC RELIGION IN CONTEMPORARY JAPAN:
A STUDY OF AUM SHINRIKY , ITS IMPACT ON JAPANESE SOCIETY
AND ITS PLACE AMONG THE NEW RELIGIONS**

The Japanese new religion Aum Shinriky , or Aum Supreme Truth, arose in the mid-1980s, rapidly gaining followers both in and outside of Japan. Led by Asahara Sh k , who was born nearly blind and who was raised in poverty, the movement initially promised its adherents a path to personal happiness, the attainment of supernatural powers, enlightenment and the power to survive the apocalypse that Asahara was predicting. By the mid-1990s, the movement had become the target of growing criticism in Japanese society and it responded with increasing violence. On March 20, 1995, the movement became known around the world as word spread of the sarin gas attack it had launched on the Tokyo subway system. This study of Aum will treat the early life of the founder, the formation of his teachings, the growth and organization of his movement and the rise of violence within Aum during its final years. It will also examine the impact that the Aum affair has had on Japanese society and the place of Aum among new religious movements, particularly in Japan and the United States.

M. SCOTT WILKERSON

Assistant Professor of Geosciences

INVESTIGATION OF THE LATERAL DEVELOPMENT AND TERMINATION OF CONTRACTIONAL FAULT-RELATED FOLDS

In this research project I will investigate how natural contractional faults laterally propagate and how folds at contractional fault terminations relate to folds elsewhere along their length. I will focus on determining if testable differences predicted by different lateral propagation models for contractional fault-related folds are recorded by strain patterns, rock fabrics (e.g., fractures, small faults, small folds, etc.), displacement changes along the length of the fault, and/or 3-D geometries of the genetically-related folds.

I propose to study natural examples of contractional fault-related folds that have well-exposed terminations in order to address three general questions: (1) What criteria help distinguish the mechanism by which contractional fault-related folds terminate (i.e., what features define the relative contribution of displacement loss along the fault versus change in fault geometry)? (2) Have strain markers and/or rock fabrics recorded the lateral growth of a fault (i.e., are strains and fabrics that are observed in fold terminations preserved in more central portions of the fold)? and (3) Does the 3-D geometry of a contractional fault-related fold reflect its mode of lateral propagation?

Answers to these questions might help resolve issues involving 2-D and 3-D interpretations and restorations of folded rocks, the relationship between 3-D geometry and rock fabrics (e.g., where might open fractures exist and do these positions correspond to regions of high curvature on the fold?), and assessment of seismic risk based on how contractional fault-related folds evolve and laterally develop.