Scholarship

Discovery

Integration

Application

Teaching

Revisiting Boyer

**Exploring the Scholarly Work
of Empire State College Faculty**

Volume 1, 2011

Preface
by Alan Davis, President

Ernest Boyer held appointments at the State University of New York from 1965 to 1977, and was chancellor for the last seven years of that period. His conceptualization and establishment of Empire State College was arguably his most notable accomplishment while at SUNY.

After leaving SUNY, and a brief spell working with the Carter administration, he led the Carnegie Foundation for the Advancement of Teaching, which is where his international legacy as a pioneer and commentator at all levels of education was established.

In a series of ground-breaking – and still highly relevant – reports, he opened up discussions in areas such as: a core curriculum in the nation's schools accompanied by relevant community service; the need for institutions of higher education to become what we now call "learner-centered;" and, most famously, the reconsideration of what "scholarship" means.

There is no doubt that his Carnegie Foundation reports were influenced by what he experienced at SUNY – and by the radical and exciting experiment of Empire State College, with its openness of approach, its mentor-learner model, its embrace of interdisciplinarity in all its forms, and its respect for prior and informal learning. It is gratifying to know that he saw his concept become reality and thrive so well.

Scholarship Reconsidered: Priorities of the Professoriate (1990) explored a broad and authentic meaning of scholarship, and suggested four categories: discovery, integration, application and teaching. His report generated debates around the world and influenced many institutions of higher education to expand the range and recognition of academic scholarship in new and important ways.

The scope and quality of the work shared in this volume is a small but telling sample of what we have achieved in our approach to scholarship – from elegant biochemistry to environmental explorations (both today and in the Middle Ages), from heath care to languages, and from ancient Egypt to suburbia.

I want to take this opportunity to thank those whose essays appear here, the members of the editorial board who worked with the authors to organize and edit their work, and the staff of the Office of Communication and Government Relations who helped shape, and then produce, this volume.

I hope that Dr. Boyer would be as proud as I am of the work of the faculty of this amazing institution, with this special 40th anniversary publication providing but a taste of all that they have been inspired to achieve.

Introduction

As the college readied for its 40th anniversary, we wanted to celebrate the work of our faculty in the spirit of Ernest Boyer, whose vision led to the creation of this institution. One of Boyer's many and important legacies was to redefine the notion of scholarship in the academy, so we conceptualized this collection as an opportunity to highlight the breadth and depth of our faculty's scholarly work.

It also seemed the perfect opportunity to highlight and explore some unique aspects of our college: our respect for interdisciplinarity, the role of expert faculty as mentors, a recognition that students themselves bring learning and wisdom to the educational encounter.

The Editorial Board organized this work to reflect the redefinition of scholarship that was crafted by Boyer in 1990. We added a section titled "The Journey," which highlights the fact that many of our faculty experience their careers as an ongoing iterative process that captures all of the different facets of scholarship Boyer described: the scholarship of application, integration, discovery and teaching.

Our call for papers asked faculty members in the college to propose an essay – more of a meditation than an academic article – on some aspect of their scholarship recognizing that not all their scholarly pursuits are done through the Boyer lens.

This publication is the result of their willingness to reflect upon their work and lives as mentors. We hope you enjoy reading it.

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"We need … a more inclusive view of what it means to be a scholar – a recognition that knowledge is acquired through research, through synthesis, through practice, and through teaching."

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Scholarship

Boyer's Scholarship Reconsidered: Journey of a New Scholar

by Patricia Isaac

I n the exploration of my inner and now emerging scholarly voice, a number of questions come to mind. How did it happen? How did I develop this academic voice that is so uniquely mine? And when did it occur? Without much thought I could easily say it happened during graduate school and the countless papers I had to write. Not really. Did I notice it when I taught high school or right after I earned my master's or doctorate? Not then, either. After great thought about these questions, I've concluded that this voice was ever changing and is re-forged by every new experience in my life, every story I heard, every conversation I had and every book or article I read. This is when the journey began and how it continues.

I came to Empire State College more than three years ago to take a position as a full-time tenure-track mentor in the School for Graduate Studies from a somewhat remote Indigenous community. There I worked as school psychologist evaluating and counseling high school students for special education services, and increasingly I became aware of the "pressing human needs" of the children in this particular community. This experience added depth and breadth to my knowledge base and expanded my worldview. I learned to think differently about people and their lives. The experience also confirmed what I had seen in the classroom as an urban high school teacher. Thus I was pressed to address the serious needs of children, and my research has been a dedication to this cause. Ernest Boyer asserts that, "scholarship has to prove its worth not on its own terms but by service to the nation and the world."

Still, I don't think of myself as a scholar. I don't seem to fit the image of the true scholarly giants, such as Boyer. Yet I find affirmation of my scholarly position in my interactions with other colleagues, in publications and in conference presentations. Most importantly, I look to the valued conversations with my pre-service teachers and teachers, who help to shape my thinking during our exchanges. These conversations

are central to my research on adolescent mental health, developing cultural competence in counseling and teaching minority youth and teacher preparation. Essentially, my research is designed to inform and train future human service and teaching professionals.

I find great comfort in reading and reflecting on Boyer's Scholarship Reconsidered as he implies a certain academic freedom in which there is a flow of knowledge between research and teaching.

"But knowledge is not necessarily developed in a linear manner," he writes. "The arrow of causality can, and frequently does, point in both directions. Theory surely leads to practice. But practice also leads to theory. And teaching, at its best, shapes both research and practice. Viewed from this perspective, a more comprehensive, a more dynamic understanding of scholarship can be considered, one in which the rigid categories of teaching, research, and service are broadened and more flexibly defined."

Boyer concluded that the role of the professoriate had four separate, yet overlapping functions: the scholarship of discovery; the scholarship of integration; the scholarship of application; and the scholarship of teaching. Upon closer examination of my own scholarship and teaching, I find it is interdisciplinary in nature, and that it embraces all four of Boyer's aspects of scholarship. This was quite an awakening for me because Scholarship Reconsidered was written more than 20 years ago. His words hold with time and they have become personal for me. Boyer is the first person to give me permission to call myself a scholar, which is a confirmation of my inner self-belief. I need not follow a prescribed road or be like anyone else to be a scholar. I must be myself and have the scholar emerge through the research that I am so passionate about.

The Scholarship of Discovery

The scholarship of discovery is defined by Boyer as research for the sake of knowledge,

the freedom of inquiry and an investigation wherever that may lead. Scholarship of discovery is not only the stock of human knowledge, but also the intellectual climate of the college or university. Boyer viewed scholarly investigation as "the heart of academic life, and the pursuit of knowledge must be cultivated and defended."

The scholarship of discovery is its own journey in which one question leads to another. I find this to be particularly exciting because I am always questioning things, searching for answers and trying to make connections wherever I can. The academic climate here at Empire State College is one of collaboration and fosters academic inquiry and the freedom to expand my research ideas. As a new faculty member, it is liberating for me to teach in an academic environment that allows exploration for the sake of knowledge. There is room to play with new ideas and to think out loud as I am able to do when I present aspects of my scholarship at the Central New York Human Service Learning Residency and the All College Conference. While I also present work at national conferences, these college opportunities afford me a starting place for ideas and a stage to present my research while collaborating with others.

As a school psychologist, my research embraces the two disciplines of education and psychology to broach topics of concern to social workers, school psychologists, school counselors, psychologists, teachers, counselors and human service professionals. I've presented on such topics as: Counseling Indigenous Adolescents: A Journey of Transformation (2010), The Importance of Developing a Culturally Competent Framework (2010) and Teen Suicide in the Minority and GLBTQ Youth Populations (2009). This work focuses on my ever growing concern for adolescent mental health, and represents my own contribution to the literature. My latest written work, Respecting Traditional Healing: A Journey Where Spirituality and Cultural Competence Intersects (2010),

asked readers to expand their thinking about spirituality in counseling. There was a time when this was unheard of and thought as being too far out on the edges of counseling. But society – no, humanity – demands scholars to be courageous and fearless in asking hard questions.

The Scholarship of Integration

The scholarship of integration, on one level for Boyer is, "making connections across the disciplines, placing specialties in a larger context" with the researcher asking what the findings mean? Boyer quotes Polanyi in his reference to the integration of boundaries where fields converge as "overlapping [academic] neighborhoods." This term evokes mental images of blocks of ideas evolving from conversations, research and experiences converging to a central point, the scholar. As a new researcher, Boyer's ideas concerning the scholarship of integration invite me to turn my thoughts and inquiry to the merging of new ideas. Boyer states, "We need creative people who go beyond the isolated facts, who make connections across disciplines, who help shape a more coherent view of knowledge and a more integrated, more authentic view of life."

Here scholarship is more interdisciplinary in nature and more comprehensive; my research embraces a large overview of particular questions and to a greater extent extends my scholarship beyond my discipline. On a larger scale, the scholarship of integration is about the academic interconnectedness across Empire State College, an interconnectedness that is one of the more pleasant aspects of teaching here. I enjoy the opportunity to collaborate with colleagues within and outside of my program and across the college.

The Scholarship of Application

The scholarship of application, according to Boyer, moves towards engagement as the scholar asks, "How can knowledge be responsibly applied to consequential problems? How can it be helpful to individuals as well as institutions?" The latter question mirrors earlier uncertainties concerning my scholarly worth and herein rests the heart of my dilemma. Will my research create value and add to the body of knowledge? I struggled with this during my first year as a faculty member. Then it became vitally important to begin chronicling my research and equally important to muster the courage to produce scholarly endeavors. Writing my first article, The Ecology of Caring: Teaching our Teachers (2009), was difficult, but taking the first step created an open window of opportunity leading to endless possibilities.

Boyer contends that scholars need to respond to critical issues of the century and posed a moral question, "How can we justify a university that is surrounded by pressing human needs and essentially ignores them? It is a failure not only intellectually, but ethically as well." I take to heart this question and the spirit of the scholarship of application as it is my desire to be a valuable contributor to academia through my research on what I consider to be pressing human need, the emotional wellbeing of children. I pass this concern on to our pre-service teachers and teachers and have collaborated with colleagues as a way to address it through our work at the All College Conference presenting Exploring Social Justice with Pre-Service Teachers: Empowering Teachers as Change Agents (2009), and in a community public forum for African-American and Latina adolescent girls, Mental Wealth and Social Wellbeing, The Image Initiative (2009).

Scholarship of Teaching

In the introduction to the scholarship of teaching, Boyer quotes from Aristotle, "Teaching is the highest form of understanding." He goes on to say that "those who teach must, above all, be well informed, and steeped in the knowledge of their fields" and, "inspired teaching keeps the flame of scholarship alive." Teaching is the culmination of the other three functions:

discovery, integration and application. It is the inspiration to develop new scholars from the classroom. Blending of all four faspects creates the perfect formula to effectively teach in higher education and for scholarship.

Teaching others does not come from one source of information; it is not simply direct instruction. The scholarship of teaching is a synthesis of knowledge based on the four aspects of scholarship blended together and funneled into the classroom. Effective teaching is a craft and requires commitment to the profession and the student. Expanding my pedagogical content knowledge is an ongoing process of acquiring current research to add to my existing body of knowledge. Mentoring goes hand-in-hand with teaching. Having thoughtful conversations with students is another aspect of scholarship where sharing of information and encouraging the exploration of new research ideas takes place.

My journey as a new scholar has been an affirming road of self-discovery and self-confirmation. Through this writing process about Boyer's ideas on scholarship, I have given myself the name scholar, new that I am to the profession. I've become acquainted with and explored where Boyer's ideas and my scholarship intercept. In the nearly four years of teaching at the college, my scholarship and teaching have grown exponentially and Boyer's four aspects of scholarship are deeply rooted in my ever-growing scholarly voice. I fully understand that scholarship is not only a commitment to strive for excellence, but a mission to impact and contribute to society. I am excited for my future academic endeavors and look forward to a career rich in experiences, people and research. Finally, Boyer calls for "a vision of scholarship, one that recognizes the diversity of talent within the professoriate." This anniversary publication is a wonderful example of that.

Patricia Isaac is a mentor in the School for Graduate Studies Master of Arts in Teaching program. She holds a Ph.D. in Educational Psychology – School Psychology, a Master of Education in counseling and Human Relations and a Bachelor of Arts in Anthropology and American Studies. Her research focus is on adolescent mental health and teen suicide.

Off the Beaten Track: Environmental Philosophy and Scholarship Reconsidered

by Wayne Ouderkirk

I n 1985, as a brand-new faculty member at Empire State College, I was excited to attend the annual faculty lecture at the All-College Conference. Before the lecture, I had the honor of informally meeting our late colleague, Bob MacCameron, who had won the Excellence in Scholarship Award the previous year and thus was the 1985 lecturer. I was impressed by his unassuming friendliness, lack of pretension and good humor. But more importantly from an academic perspective, I was deeply affected by the scholarship that had won him his award. Bob had been trained as a Latin American historian, working with traditional methods and sources within mainstream historical scholarship. However, what had put Bob at the college's lectern that year was not that traditional work but his work in the entirely new field of environmental history, an emergent sub-discipline relatively unheard of at that time, but now a well-respected area of historical work. He was examining the relationships through time between human communities and cultures and their surrounding natural environments. To do this work, he had had to develop new intellectual skills and become conversant with sources and ideas that were not available to him from his graduate education, some well outside the discipline of history, such as ecological theory.

I was inspired by Bob's work and its results because I saw a parallel between his accomplishments and my hopes for my own scholarship. Like him, I had been trained in the traditional streams of my discipline, philosophy. At the time, I was struggling with whether and how I might include work in the relatively new field of environmental philosophy. That Bob had not only included a new field of interest in his scholarly pursuits but had also made that new field his primary focus was a revelation to me. His example showed me that, as a faculty member at Empire State
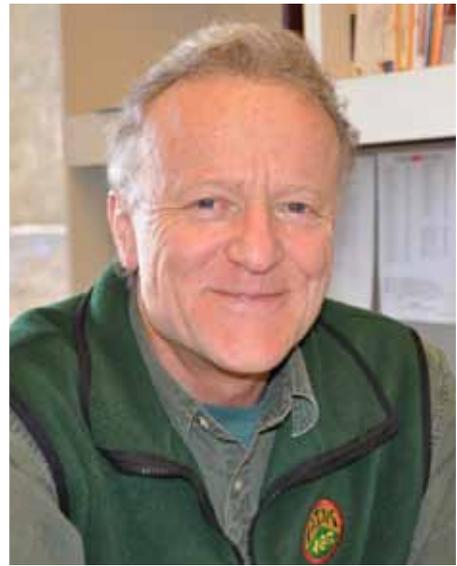
College, I could indeed pursue my philosophical interests where they led me and not confine them to more traditional approaches.

There are many ways one could characterize environmental philosophy. In its earliest days, it was viewed and practiced as a form of "applied philosophy," a somewhat condescending label invented by those engaged in "pure" philosophy to categorize the work of colleagues attempting to re-connect philosophy to real-world problems. The first thinkers engaged in the field did indeed apply already existing philosophical concepts and theories to the environmental crisis, and their work did clarify some significant issues. For example, the application of traditional moral theories to environmental issues raised the question of "moral considerability," that is, of what kinds of beings can and should be accorded standing in moral deliberations. The question had been asked before in the history of philosophy, and the answer had been nearly unanimous: only humans!

For the most part, these early efforts were about ethics, so the field took on the label of "environmental ethics." As philosophers examined the issues more thoroughly and over time, it became clearer that in order to give a complete philosophical response to many questions that arise in this arena, other areas of philosophy had to come into play. Metaphysics (a philosopher's account of what exists) as well as theory of knowledge, aesthetics, social and political philosophy, philosophy of religion, feminism, and postmodernism add other strands to the debates. This multi-dimensional picture is the basis for my view that "environmental ethics" is a misnomer, conveying the false impression that the field is limited to ethical reflections. The proper label for such speculation is environmental philosophy.

Since ancient times, philosophy has sought truth, beauty and goodness; environmental philosophy is squarely within that tradition. As such, it falls within Ernest Boyer's category, the scholarship of discovery. Boyer writes that "in our complicated, vulnerable world, the discovery of new knowledge is absolutely crucial." Clearly, the ways we humans have regarded the non-human world have gotten the planet into a set of interrelated problems that add up to a major crisis, for ourselves and for the myriad life-forms and systems of which we are part. The development of new, sounder ways to conceptualize our world and our place in it is one way philosophers can contribute to "the discovery of new knowledge."

If that were the end of the story, it could be argued that environmental philosophy, though complex and with a significant role to play, remains within the most traditional of Boyer's categories of scholarship, i.e., discovery, and so does not actually exemplify or advance his call for a re-thinking of scholarship. However, the best thinkers in the field have seen the need to reach across disciplinary boundaries. No single discipline owns environmental problems; they are multi-dimensional. Indeed, it is not far from the truth to say that one-dimensional and partial thinking has created the crisis we find ourselves in.

Thus, environmental philosophers have developed understandings of other disciplines that bear most heavily on the issues. Perhaps obviously, the sciences are central in this, and first among them for our purposes is the science of ecology, which provides several elements needed by environmental philosophers. First, its field research gives us facts without which we cannot proceed. Second, ecology develops evolving models of ecosystems that inform philosophical speculation about the structure of the world. Finally, through the first two contributions, ecology provides a set of concepts – e.g., ecosystem, biotic community, niche, trophic hierarchy, inter- and intra-species competition, symbiosis, population dynamics – that augment those of philosophy in ways that are central to any discussion of environmental issues.

Yet other disciplines play important roles: history, both the history of philosophy and

environmental history; economics; and aspects of political science and the policy process.

I could give yet more examples, but the point is clear: environmental philosophy, pursued with rigor and diligence, is thoroughly interdisciplinary. As such, it exemplifies another of Boyer's categories, the scholarship of integration, "serious, disciplined work that seeks to interpret, draw together, and bring new insight to bear on original research." Moreover, one could argue that environmental philosophy takes scholarship a step farther than Boyer envisioned. Its integration of multiple perspectives begins to dissolve traditional disciplines, thereby helping to create a more unified conception of knowledge and research.

Finally, I want to assert that environmental philosophy can also exemplify Boyer's scholarship of application, in at least two different ways. First, in the tradition of American Pragmatism, I understand all philosophy as practical. That is, philosophy is one important human response to problems we encounter in living, in interacting with one another and the world. As such, philosophy is an attempt to gain clarity about such problems; that clarity in turn helps us formulate appropriate responses to those problems. The effects of those responses then provide feedback to the philosophical enterprise, which can then be modified to reflect that feedback. In this way, all philosophy, including environmental philosophy, "vitally interacts" with human problems, "and one renews the other," as Boyer suggests it should.

Another sense in which environmental philosophy is a form of the scholarship of application lies in the efforts of philosophers to engage in various activities that inform non-philosophers of the ideas and implications of environmental philosophy. Those activities then inform the philosophers about issues and phenomena that need philosophical attention. I am thinking here of philosophers' central participation in efforts such as the University of North Texas-Chile Sub-Antarctic Biocultural

Conservation Program (University of North Texas, 2011). In that and other instances, the point is not for the environmental philosophers to tell others "the truth," which then is carried forth like a banner, but rather to engage in an exchange that will take place in which both (or all) sides will be informed by the other(s) and everyone involved will learn while attempting to make the world a better place. Some of that learning will necessitate the criticism and rejection of theories and the development of new ones; some of it will lead to better science; some of it will lead to better social and environmental practices. That seems precisely what Boyer was after with his call for scholarship of application.

I'm privileged to work in such a diverse, interesting, important area, one that challenges the very notion of a traditional "discipline" and that embraces multiple perspectives. My own research, especially my publications and conference presentations, has focused mostly on two topics: intrinsic value and the nature/culture relationship.

The concept of intrinsic value, long central to the field of philosophy, is straightforward enough: Intrinsic value is the value that an entity has in and of itself, independent of other entities and independent of the interests of other beings. It is generally agreed that bearers of such value are entitled to moral respect, that is, are morally considerable. Formerly, the only philosophical candidates for such status were human beings and perhaps God. But environmental philosophers, such as Holmes Rolston III, argue in various ways that non-humans, including animals, plants, species and ecosystems, are the bearers of such value as well.

For a long while, I thought that intrinsic value was the key to developing an environmental ethic. However, more recently, I have concluded that the arguments for it are not cogent. Because the alleged possession of intrinsic value depends on the possession of other qualities (e.g., being alive, integrity), making it the basis of a theory is to rely much too heavily on a quality that

cannot itself be directly identified. Intrinsic value is, I now believe, ultimately mysterious.

A second theme of my work has been the nature/culture relationship, approaching it mostly through the idea of wilderness. Once the paradigmatic environmentalist's pet project, wilderness has become the center of a number of disputes, including philosophical disputes. Certainly, wilderness is a foil for civilization, and if civilization has been the cause of environmental problems, then the preservation of wild areas seems an appropriate response. However, in making that distinction, we are once again caught in a dualism between humans and nature, a dualism that no longer seems scientifically and philosophically tenable. (And here comes the metaphysics!) All of the science and most of the philosophy of the last 150 years, indicates that humans are natural creatures, with the same genetic code as every other living thing on this planet. This view seems more environmentally sound, putting us as it does back into nature, along with all other creatures, our pretense at superiority undermined. Our roots, our home, our needs - all natural.

Dispersed through most of the environmental philosophy literature is this idea that the distinction between humans and the rest of nature is metaphysically mistaken, that there exists in the world only one kind of entity (nature), not two (nature and human culture). I and others see an important connection between the debate about that idea and the debate in mainstream philosophy about the relationship between mind and body, which asks a similar question about minds and bodies. For the last few years, I have been working (slowly!) on the connections between those two debates. Doing so has helped me see both strengths and weaknesses in environmental philosophy and has led me to re-educate myself about the philosophy of mind, a major theme in traditional philosophy.

Working at the border of environmental and mainstream philosophy is, I believe, another

instance of Boyer's scholarship of discovery and of integration. Thus my belief that both my field of interest and my own work in it help advance Boyer's hope for a scholarship with "a broader, more capacious meaning…."

The work that Bob MacCameron presented in his 1985 lecture did so as well. My recollections of Bob are always bittersweet. I had the privilege of working with him sporadically over the next several years. He worked at our Buffalo offices, I in the northeast region of the state. He was always a helpful, insightful, supportive colleague, and he consistently encouraged my efforts in environmental philosophy. He continued his scholarship in environmental history and he was one of the original faculty members who created the Environmental/Adirondack Studies Residency. Sadly, he was never able to offer a course at the residency due to his own health issues. His death was a great loss to his family, to the college, and to all who knew him. I owe him a tremendous debt of gratitude, which I hope he would consider at least partially repaid by the work I have done since his wonderful lecture and example those many years ago.

Wayne Ouderkirk coordinates the college's Environmental Studies Residency and is a mentor at the Saratoga Springs Unit of the Northeast Center. He teaches various philosophy studies, especially environmental philosophy and ethics, which are the focus of his writing and research. He holds a master's degree and Ph.D. in Philosophy from The University at Albany. Ouderkirk was the recipient of the Susan H. Turben Award for Excellence in Scholarship in 2000.

From Adjunct to A.C.: Some Thoughts on One's Scholarly Mission

By Himanee Gupta-Carlson

My search for meaningful work began when I left Honolulu, Hawai'i, in July 2006, after nine years in graduate school, with a defended but not yet completed dissertation in hand. I had one part-time, temporary teaching contract lined up – a semester-long course on political geography at an arts college in Seattle – and a house with a mortgage and many needed repairs.

I was not a "traditional" graduate student, in the sense of never having worked outside academia. Before I entered graduate school, I was a newspaper journalist: I chased breaking news, investigated public officials and wrote profiles of individuals and organizations. Although I did teach while pursuing my doctoral degree, I supported myself largely with a 4:30 p.m.-midnight, Friday-Saturday-Sunday job with The Honolulu Advertiser's news copy desk.

But I did not consider that work meaningful. I wanted to get away from journalism, whose mission of objective reporting never jibed with my dreams of changing how the world worked. I wanted to help make life safer, more prosperous, and much more enjoyable for everyone in it – not merely report on it.

My graduate studies – at a university that sat on lands seized illegally in 1893 by the United States government – had not convinced me that scholarship alone would make that difference. So, when I left the safety of the isolated, tropical enclave where I had lived for so many blissful years, I did so with a purpose: I would give myself three years to do whatever job or jobs I could find while figuring out what I wanted to do with my life.

The part-time teaching contract in Seattle paid approximately $800 a month. The first check, I learned in July, would not be cut until Sept. 30. My husband had a part-time job as a studio photographer. Not enough to pay a mortgage and cover costs.

Over the following months, I did what thousands of Ph.D. candidates do: I scrounged for work and finished my dissertation on the side. By May 2007, when I flew back to Hawaiʻi for graduation, I had taught at three different campuses, knocked on doors as a political canvasser, called Seattle Children's Theatre patrons as a tele-fundraiser, promoted myself as a creative writing instructor and served as a Curves fitness coach. I often worked three jobs at once.

While there was plenty of work for adjuncts willing to drive up and down and around the Puget Sound region, the prospect of long-term permanent employment looked bleak. My dissertation advisors began encouraging me "to publish," present papers at conferences and stay in the academic loop. I found myself pondering what was meant by meaningful work, and how a Ph.D. holder would do such work without full-time affiliation with a university and access to its associated perks.

I also realized that, even though I liked doing research, I was coming to dislike the research university environment. I disliked the difficulty of navigating an unfamiliar campus, trying to find out where a Political Science Department was located on a map that identified buildings by name but not discipline. I disliked the fences and security gates that surrounded R-1 campuses, and the accompanying disconnect that seemed to permeate the minds of professors and students working within those islandized settings. And increasingly, I disliked the idea that universities were "selective." The "best minds" inside those gates were not at all like the students I was encountering in my classrooms in the arts and community colleges where I was teaching as an adjunct. These students were not pre-programmed successes. These students had records – of crime, teen pregnancy, failure in high school, drug use. They had problems with attention deficit disorder, obsessive compulsiveness, manic depression and other ailments. They did not have parents like mine who had been highly educated themselves.

Going to college was not seen as a given for them. I loved these students passionately.

They were like me even if I did not have their records or problems. They were fighting everything and everyone around them – including themselves, at times – to change their lives. They were students I thought I could help.

"The work of the professor becomes consequential only as it is understood by others," writes Ernest Boyer. Furthermore, Boyer tells us, teaching becomes scholarship when it "both educates and entices future scholars." I was not aware of Ernest Boyer's ground-breaking essay Scholarship Reconsidered: Priorities of the Professoriate at the time. But I was coming to realize that "meaningful work" had to involve more than one hat. Meaningful work had to be political; it had to be radically democratic. It could not merely involve a paycheck. It had to shape the entire locus of life.

In my first few terms as an adjunct, I taught "by the book." I took the text that the community college curriculum committee had assigned, sample syllabi that the department chair provided and rubrics that previous instructors had used. I lectured, made Powerpoints, and graded students on the basis of their performance on several short writings, a midterm and test.

On the side, I was writing job applications and poetry.

About that same time, I met a woman who was eighteen years younger than I and pursuing her personal passion as a competitive break-dancer. I began going to her battles and shows, and reading about break-dancing as one of the foundational arts of hip-hop. I decided I wanted to write about break-dancing and, after the woman's younger sister asked me "… if I was doing a book," I found my first post-Ph.D. project: a study of Seattle women in hip-hop.

In the classroom, I was bored, and the students likely were, too, though they would tell me that my classes were "interesting."

"What is the most exciting thing you can say about political science?" That question came up in the midst of a ten-week Adjunct Faculty Institute as I and the other participants were writing statements of teaching philosophy.

It was 2008.

"Barack Obama," I said, "and hip-hop."

"How do you bring Barack Obama and hip-hop into your class?"

It clicked: You don't, if you're teaching by the book.

I threw out my lectures and most of my Powerpoints. I rearranged desks so that my classrooms looked like cafes, and turned solo tests into group quizzes completed on large sheets of paper with bright Sharpie pens. We watched movies and discussed them, Socratic seminar style, for their political content and relevance to our class. We listened to hip-hop music, and made murals of ideal communities. Students stopped writing term papers and began learning about political theory, public policy, political economy and grassroots organizing by creating their own visions for the world. They left the classroom to analyze the meaning of the social contract in graffiti, to consider articulations of equality and justice in a feminist art exhibit, and to grasp the meaning of America by text-messaging and e-mailing me while I uploaded video, audio casts and Facebook updates from the frozen grounds of the Washington Monument as Obama was inaugurated as president.

I was no longer bored, and neither were the students.

But I was nervous, especially when one of the other adjuncts would ask me what chapter of the textbook we were on.

Boyer might call what I was doing the scholarship of teaching, the applying and integrating of what I knew to the disseminating of knowledge in a manner that allows students to keep learning. Others might call it active learning – the idea that learning sticks with the

student if the student co-creates the knowledge being learned. But it was difficult to evaluate the effectiveness of my practices. I knew I was having fun. But was I teaching them anything meaningful? Was I helping them grow?

"Great teachers create a common ground of intellectual commitment," Boyer writes. "They stimulate active, not passive, learning and encourage students to be critical, creative thinkers, with the capacity to go on learning after their college days are over."

A student in one of my first classrooms of Hawaiian descent had worked hard for his "A" in my American politics class, struggling to learn the difference between opinion and argument as well as the value of limiting one's use of the exclamation mark. A year or so after he took my class, I saw his picture in the Honolulu Advertiser accompanying a story about young adults who had served prison terms returning to college and working on campus to mentor students at risk of similar plights. I ran into him a few days later, and mentioned the story.

He explained that he'd gotten in trouble with a drug deal and termed it a "big wake-up call."

"But people like us need more," he said. "They need to learn about the world and what they can do. They should go right from jail into your class."

Himanee Gupta-Carlson, Ph.D., is an area coordinator at the Center for Distance Learning. She joined the Empire State College faculty in April 2010, and loves the intellectual stimulation she gets from mentoring, teaching, working with adjuncts, creating and revising curricula and writing. She is working on two books: one, based on her dissertation, about the experience of being South Asian in middle America and the other on women and hip-hop.

Scholarship

"The Scholarship of Discovery…

… contributes not only to the stock of human knowledge but also to the intellectual climate of a college or university."

Ernest Boyer, 1990

Volcanism, Climate Change and Famines of the 13th Century

By Chaochao Gao

I n collaboration with a medievalist at the University of Trier (Christian Jörg, Germany), I am conducting a study on the climate of the 13th century combining ice-core data, tree-ring records and historical record of famine and abnormal weather conditions. I believe my work typifies what Ernest Boyer meant when he wrote about the scholarship of discovery but also, because of my use of multiple historical and natural resources my work also embraces his notion of integration. I might even suggest that my research may could fall into the category of the scholarship of application in that my findings are helping to explain the transition from Medieval Warm Period (9th – 13th century) to the Little Ice Age (13th – 19th century). But first and foremost, I have engaged in the scholarship of discovery.

The Climatic Impact of Volcanic Eruptions

Understanding the natural causes of climate change is vital to evaluating the relative impact of human pollution and land surface modification on climate. Explosive volcanic eruptions have long been recognized as a possible natural cause of past climate variations. Large explosive volcanic eruptions emit sulfur, in the form of H_2S and/or SO_2, into the stratosphere. This sulfur is turned into the sulfate aerosols that cool the surface by reflecting solar radiation and warming the stratosphere by absorbing both the shortwave and longwave radiations. For example, the 1815 Tambora eruption produced such a significant cooling effect that the following year has been often referred to as "the year without a summer." In addition to the general cooling impact on temperature, volcanic aerosols also affect precipitation distribution; they reduced the precipitation in tropical regions and weakening the summer monsoon in Asia and Africa.

Due to their impact on global and regional temperature and precipitation pattern, volcanic activities can cause famines and other social phenomena: besides producing summer cooling, most volcanic eruptions also dynamically induce warming over northern hemisphere continents for the next couple winters following the eruptions as Stenchikov and other showed in research published in 2002. The cold summers reduce the food production, and warmer winters enable insects to survive the cold seasons, remaining alive to further damage crops.

Volcanism, Climate and Famines

Because of these climate and social issues, it is important to develop volcanic forcing indices with reliable chronology and magnitude estimations. Ice-core-records provide an excellent tool to reconstruct such indices, as a portion of emitted sulfate aerosols are embedded and preserved in certain glaciers and ice sheets through precipitation or dry deposition. Thus, measurement of the total acidity or the actual sulfate content in the ice cores from those areas allows relatively precise computation of a volcanic time series. Using 33 ice-core-records, I studied the timing and magnitude of the Great Kuwae Eruption and concluded that it took place in late 1452 or early 1453 and was the second largest stratospheric volcanic sulfate

aerosol loading event during the past 1,500 years. This result was featured in Nature (Vol 442, July 6, 2006) and was used to identify and explain the cold and humid summer of 1453-54 and severe food shortages throughout the Central and Western Europe.

Knowing about the climate in the 13th century is vital to understanding and differentiating the anthropogenic vs. natural causes of climate change because of coincidence with the transition period from the so called Medieval Warm Period (MWP, 9th – 13th century) to the Little Ice Age (LIA, 13th – 19th century), during which the global average temperature dropped more than 1 ºC. Using 54 ice core records, I have identified five large to moderate volcanic signals during the 13th century (1228, 1259, 1268, 1275 and 1285 AD) and calculated the cumulated radiative forcing to be two to 10 times the forcing of any other century in the past 2000 years. Among the five volcanic eruptions, the 1259 Unknown event is of particular interest because it is the biggest eruption in the late Holocene (2.5 ka – present) based on ice core records. In my ice-core-data collection, there are 17 cores with records going back to the 13th century. The 1259 Unknown signal showed up in every single ice core record and was the biggest signal in most cases. I also estimated the global stratospheric sulfate aerosols loading of this event to be 258 Tg (1
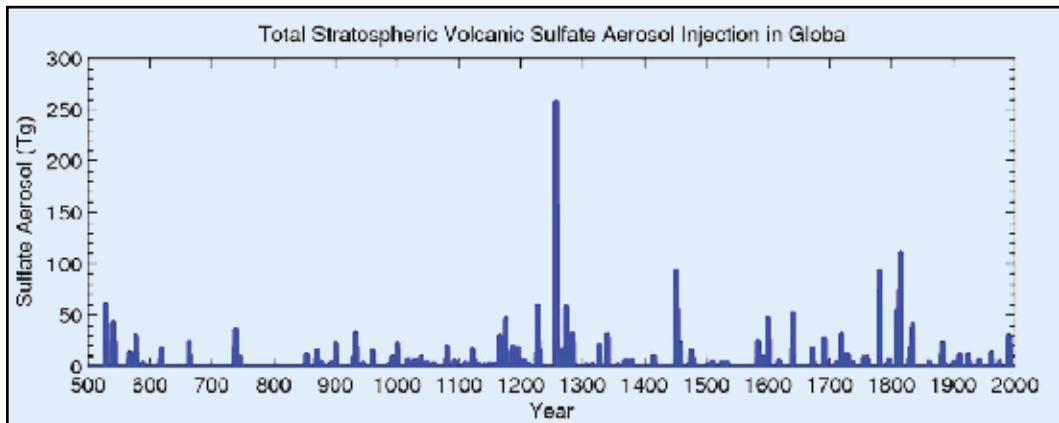
Total global stratospheric volcanic sulfate aerosol injection for the past 1,500 years

Tg = $1{\times}10^{12}$ g), more than twice that of the 1815 Tambora Eruption. Because none of these eruptions has been well documented, there were questions about whether they were explosive low-latitude eruptions or local events.

In addition to ice-core-records, tree-ring chronologies serve as another useful tool for reconstructing natural temperature fluctuations and past volcanism because of the high correlation between the annual tree ring width and the regional temperature during the growing season. The tree ring records of the 13th century showed similar but less pronounced volcanic history. For instance, tree ring records from Fennoscandia, Quebec, and the Western United States have shown frost damage and extremely narrow rings in 1227, 1257 and 1299 AD, but there was no evidence of frost rings immediately after 1258 AD. In Mongolia, three latewood frost rings recorded for 1258 AD and two earlywood rings in 1259AD. The Taymir record from Northern Siberia also showed decreased growth in 1258-59 and again in 1263-64. The Scandinavian record indicated rapid summer temperature drops in the late 1220s and again during the late 1250s and early 1260s.

Historical documentation of the 13th century volcanism and its large-scale climate impact, on the other hand, provided a mixed signal. For example, W.S. Atwell found that a severe food shortage was reported in Russia in 1228-30; in northern Europe, there were written records of dry fog and a severe cold summer and autumn in 1258 followed by normal and even hot summers for the next couple of years. Although local crop damage and pestilence events were reported in parts of England, western German, France, and northern Italy during the four-year period of 1258-61, continental-wide agriculture failure occurred only in 1258. In East Asia, there was evidence of severe famine in Japan and Korean in 1230 and unusually cold weather in China during 1226-30. Nationwide famine was recorded again in Japan during 1259-60 caused by an unusually cold summer in 1258; and there were documentations of famine and cannibalism in the capital of Korea in early

1259, severe drought in 1258 and flooding in early 1259, followed by food shortages in other parts of the country. Northern China and part of Middle East also experienced widespread famine and plague according to Quansheng Ge of the Chinese Academy of Science, but the invasion of Mongolia during the previous decade and establishment of the Yuan Dynasty in 1260 make it difficult to differentiate the natural and human contribution to the famine events. The agriculture damage in Central and Western Europe was much less significant after the 1259 Unknown event Christian Jörg has reported. There were only local signs for famines in Austria and Bavaria in the year 1259, and the following two years actually saw very good crop and even wine production.

Conclusion

Volcanic activities cool the earth's surface by emitting sulfate aerosols that reflect solar radiation, adversely effecting crop production and tree growth. Therefore, the chronology of past volcanism can be used to pinpoint and explain certain historical events such as abnormal weather and famines. However, every single paleo-proxy (i.e., the historical recorders of climate variability such as tree rings, ice cores, fossil pollen, ocean sediments, corals, and written documents) has its deficiencies. While ice-core-data provide a direct and objective record of past volcanism, the ice-core-based volcanic indices may not have the spatial and temporal detail required for climate model simulations. That's because it is difficult to distinguish the high-latitude eruptions from the tropical ones, and there are other sources of acid or sulfate that may obscure the volcanic signals. Tree rings record a detailed annual sequence of climatic information, but they are inadequate in geographic and temporal coverage. Historical records are a nice complement to these natural proxies, but much of this information is rather subjective and limited at various time periods. A common limitation among these proxy records is the chronological accuracy, especially as we go back in time. These deficiencies can be largely

overcome by integrating these multiple proxy records, which provide an exceptional tool for developing and improving the chronologies of past volcanism and other historical events, as well as quantifying the cyclic behavior of climate on various time scales. By combining the ice-core-based volcanic index, tree-ring records, and historical documentation we can conclude with certain confidence that a series of significant volcanic activities occurred during the 13th century, and the 1259 signal seen in the ice-core-record is the result of a large tropical eruption that occurred during early 1258. These eruptions led to widespread climatic and social consequences including famine in many parts of Eurasia during 1258-60. Future research will include model simulations of the annual and decadal-scale climate response of these closely spaced volcanic eruptions, and the use of volcanic tephra (a mixture of volcanic ash and other fragments such as lavas, gases, and aerosols) analysis to locate the possible locations of these eruptions.

Chaochao Gao is an assistant professor of Science, Math and Technology at SUNY Empire State College. She holds a Ph.D. in Environmental Sciences from Rutgers University. Her teaching and research interests include but are not limited to environmental sciences, climate change and its impact on resource management and public welfare, sustainable development and paleoclimatology. She has collected more than 50 ice-core-records and reconstructed a volcanic radiative forcing index for the past 1,500 years for climate models.

Creative Ethnography: Boyer's Philosophy in Action

By Gayle S. Stever

I have spent the last 22 years researching the psychology of fandom, also referred to as parasocial interaction. One of the things that defined my work from the beginning was a sense that most psychology research had been done on samples of convenience, i.e. students. Certainly in the area of fan studies, the preponderance of work has been done this way. Actual studies of real media fans in real world situations are somewhat rare, and in psychology were nonexistent when I began my work in 1988. Also there was a lack of valid theoretical interpretation when applied to fan behavior. The tendency was to pathologize the fan as a "fanatic" without anything more than a cursory observation.

As an example, in 1989, when I was a master's student, forensic psychiatrist Park Dietz was considered an "expert" on fans. I telephoned his office, and he very graciously spoke with me for over half an hour. Dietz was an expert witness in the John Hinckley trial. Hinckley suffered from a form of schizophrenia known as erotomania, the delusional belief that a person of very high status is in love with you. He believed that he and Jodi Foster were destined to be together and he shot President Ronald Reagan to get her attention. Clearly an erotomanic is not an example of a "typical" fan. Dietz described to me what was to become his famous paper of 1991, an analysis of fan mail to select celebrities, where he had been given privileged access. Dietz was convinced that anyone who would write a fan letter to a celebrity was mentally unbalanced. I asked him how many fans he had met and interviewed. His answer: None!

In important ways, this conversation defined my study to come. I was appalled that this national expert on fans had never tried to meet one person who called him or herself a fan! I designed my inquiry in a participant/observer ethnographic style in order to combat both the psychology student study syndrome, and also what I

viewed as the lack of authenticity in the work Dietz was doing, at least as it qualified him to be an "expert" on fans.

I began to access the fan populations that had been deemed by a few of my professors to be difficult if not impossible to interface with. I didn't want to sit at home and read about, or listen to people's experiences. I wanted to go where these things were happening and see for myself. As a result, since 1988, I have attended 14 concerts on the Michael Jackson tours, five concerts on the Madonna "Blonde Ambition" tour (1990), four concerts on the Janet Jackson "Rhythm Nation" tour (1989), a large stadium show with Paul McCartney (1990) plus three Beatlefests, and more than 100 science fiction conventions (1991 to present), 36 Josh Groban concerts (2007 to present), and "fan events" all over the United States, and in England, Holland, Germany, Ireland, Scotland and Canada. I attended the MTV Awards, the Grammy's, The American Music Awards, the Lord of the Rings Oscar after-party, numerous celebrity-connected charity events, and have met and conversed with at least two dozen celebrities themselves. I had access to celebrity fan mail for a period from 1996 to 2000 sent to two "Star Trek" actors, which gave me a chance to read everything that they were sent.

Scholarship needs to be about describing and understanding real life as enlightened by theories that have to make sense in explaining what really happens to people, and not just what we suppose happens. This is particularly important for scholarship in the area of the social sciences.

One big issue I had to deal with early in my career was the reluctance disciplinary experts to accept qualitative work within the science of psychology. In 1992, proposing a dissertation comprised of qualitative analysis was not mainstream. Because of the domination of psychology by the positivist tradition, a view of research that focuses on methods being objective and replicable, psychology has been the very last of the social sciences to employ participant-observer ethnography. Only anthropology and

sociology had been engaged in this kind of research from the early 20th century, and even today, a search for articles in social science on participant-observation yields primarily articles from anthropology, sociology, and education..

Ernest Boyer's model of scholarly pursuit encouraged a moving away from strict interpretations of what qualifies as research. While Boyer was looking to broaden the definition of what qualifies as scholarship in a scholarly setting, he also embraced wider models of research from the empiricist/positivist tradition to less restrictive and hypothesis-driven models such as case study that were primarily qualitative. Above all, Boyer valued creativity in scholarship which is an essential tool for the ethnographer in a previously untouched social setting!

Overall, my most remarkable and unexpected discovery was the nature of fan/celebrity relationships that, in past literature, had been described as completely parasocial, meaning the fan knew the star but the star did not know the fan. But relationships between stars and fans are reciprocal and social in many cases. The star is very aware of who his/her fans are, knows many of them by name, by Internet handle, or by face. Each fan base studied had a subset of fans that had a real social relationship with the celebrity, numbers varying depending on the fan-friendliness of the celebrity. Describing the crossing over from parasocial to social relationships with celebrities has been a significant area of discovery. Some fans go the entire distance from "fan" to "real-life friend" with a given celebrity. Some scholarly articles have treated this as an aberration, something that almost never happens. In fact, often scholars see the fans' desire to meet a celebrity in person as an unrealistic, even delusional aspiration.

And yet from the beginning of my study with Michael Jackson fans in 1988 to the present, I have met numerous fans who could legitimately describe their relationships with celebrities as "friendships." My own initial relationship

with several Star Trek actors was that of a fan, having watched the original show as a child and having watched Deep Space Nine for some weeks before meeting any of those particular actors in person. The Star Trek actor I met first was Siddig (Dr. Bashir on DS9) and by the late 1990s, due to circumstances that included a series of interviews for print, his interest in my doctoral dissertation, and his request that I help him with his charity work, we eventually became close friends. I could describe an equivalent evolution in my relationships with Rene Auberjonois, Armin Shimerman, Nana Visitor, Chase Masterson, Andy Robinson, Max Grodenchik, J.G. Hertzler and Aron Eisenberg, all actors on Star Trek DS9. Around me in science fiction fandom were similar friendships evolving between fans and actors. With musicians, similar friendships evolve among the fans and the artists, both stars but also those who tour with stars.

Those who are not fans don't understand the attraction of attending multiple events to see the same celebrity or celebrities over and over again. If you met them once, or talked to them once, why do it again? The answer to this question is in the attachment literature, where I have found parallels between the classical attachment theory that describes parent/infant attachment, the application of that theory to adult romantic attachments, and the parasocial attachment formed between a celebrity and fan that has many things in common with the other two forms of attachment. I have written extensively about elements like the attractiveness of the familiar human face and our evolutionary predisposition to seek out those familiar faces where possible. Many would characterize the attraction between fan and celebrity as a sexual one, but cases of deep affection are just as common in most fandoms. In fact humans have the capacity to recreate in a fantasy realm any relationship they might have in real life. As such the celebrity can take on the role of a fantasy lover, but is also likely to be a fantasy co-worker, friend, father figure, sibling or any one of a number of other possibilities. And on

some occasions, the fantasy becomes a reality, often enough that the possibility needs to be recognized and discussed.

As adults go through life stage transitions, they might look outside their own everyday contacts to look for a relationship that is beyond the ordinary, something that inspires or takes the person away from the mundane in life. For the fan who, initially attracted to a talented celebrity, makes a connection with that celebrity and becomes part of that celebrity's special fan base, there is nothing like this experience to take the person outside of the day-to-day grind and into a world that is larger than life and connects one to something larger than him or herself. The largest percentage of cases I have observed are normal healthy adults who usually have jobs and families and an everyday life. But when they take a break and venture into their fan world, they find a place populated with not only celebrities, but other fans who share their love for the talent of the celebrity. These groups of fans turn into communities and become a source of support and inspiration to those who may otherwise only have a limited group of family and friends in their day-to-day lives. Most people transition from real world to fan world and back quite easily with tremendous enjoyment.

While I could discuss more technical findings from 22 years of fan research, ultimately the most significant and perhaps unexpected finding for me is this: Contrary to what Dietz suggested to me in 1989, fans are not unbalanced at all. They are ordinary people who become fans as a way to connect to a larger world of creativity and experience.

Gayle S. Stever is an assistant professor and mentor in the Genesee Valley Center and also mentors graduate students for the Masters of Arts in Liberal Studies program. Her doctorate is in lifespan development psychology with an emphasis in media studies and research methods.

Nut: An Ancient Egyptian Sky and Mortuary Goddess

By Susan Tower Hollis

It gives me great pleasure to offer a short discussion on the ancient Egyptian sky and mortuary goddess Nut to this volume in honor of Empire State College's 40th anniversary and the very significant connection of Ernest Boyer to this institution. This paper fits particularly appropriately with Boyer's scholarship of discovery which encourages the scholar to explore his or her areas of expertise seeking answers to new questions, unanswered questions and new ways to look at previously discussed issues.

My work with Nut began with asking if her role as sky goddess led to the stronger rights of women in ancient Egypt in comparison to those in contemporary civilizations, something noted by Herodotus in the fifth century BCE as role reversal. And in fact, several women served as queen regnants for minor sons, and a few truly ruled, notably Hatshepsut of the mid-eighteenth dynasty who took on all the trappings of the pharaoh and ruled very successfully for about 17 years. Although research subsequently showed that sky goddesses in Egypt really did not affect the roles of women, the research I did at that time led me to ask many further questions about Nut and, in time, a number of other goddesses, doing research not previously done.

As a sky goddess, Nut represents an anomaly in the world of mythology because most sky deities are male, for example the Greek Zeus, the Canaanite Baal or the Mesopotamian Marduk, seemingly a reflection of those patriarchal societies. In actuality, however, her role derives, at least in part, from the ancient Egyptian physical environment. This land was dominated by the Nile and its annual flooding, waters which brought a fertilizing rich top soil from inner Africa to Egypt's flood plain. Thus, the flood itself was perceived as fertile, much as rain was perceived in other geographic areas. Since the water appeared to come from the earth, while the sun, which assisted in growth of plants, appeared to die each evening and be born each morning, the latter an obvious female function. The presence of a female sky deity, notably the night

sky, followed naturally. As the night sky, Nut oversaw the sun's movement from death in the west to rebirth in the east.

Similarly, she affected the rebirth of the deceased Egyptian king, taking him in and assisting him to rebirth as one may see in the Pyramid Texts, the hieroglyphic writings which appear on the walls of the burial chambers, antechambers and corridors of the late third millennium BCE royal pyramids. While some of these texts, the oldest continuous written religious texts known to humanity, provide protective spells for the deceased, most of them involved rituals enabling the king to move from death to rebirth, and Nut played a major role in this move, appearing more often than any other goddess. Her specific function in the rituals was to facilitate the deceased king's rebirth such that he could live forever among the imperishable stars and "go around the sky like the sun."

To accomplish this goal, the deceased king's critical parts, his body, his ka or life force, and his ba or personality/soul, needed to be rejoined as an akh or effective one, a being which could live forever, not subject to any physical limitation, thus being reborn, and it was Nut who accomplished this action. She akhified the deceased, a task for which she, as a female, was suitably fit to do so. Thus the greatest number of references to Nut in the Pyramid Texts relate precisely to her function of bearing and caring for the king. For example, in one text the king is reassured:

She (Nut) will protect you,
she will prevent you from lacking,
she will give you your head,
she will reassemble your bones for you,
she will join together your members for you,
she will bring your heart into your body for you.

Clearly Nut's role here involves making sure all the king's body parts are gathered into one place, something that occurs within the sarcophagus and coffin, or at least in the burial chamber, as the following text illustrates:

You have been given to your mother Nut in her name of sarcophagus,
She has embraced you in her name of coffin,
And you have ascended to her in her name of tomb.

In fact, the actual sarcophagus of King Teti, the first king of the sixth dynasty and the immediate successor of Wenis of the late fifth dynasty, is inscribed with a whole series of speeches addressed to the king by Nut, one of which states explicitly, "This is (my) beloved son, Teti, whom I bore and who has opened my door," presumably her womb.

A different text, moving to another opening, this time in the sky, reads:

This Wenis has come to you, Nut;
This Wenis has come to you, Nut;
Having left his father on earth,
Having left Horus on earth.
…
You shall open your place in the sky among the stars of the sky
For you are the lone star, …

Here the emphasis on the deceased as a star among stars actually refers to the king's ultimate goal of becoming an indestructible or circumpolar star, a permanent star that never disappears, not unlike the sun. And to attain this position, the doors of the sky must open, doors which provide access to the cool waters, a concept found in many other Pyramid Texts. Since one must ascend to the sky, this text provides a clear sense of place, or locale for Nut: the sky. But the sky is both the nether or under sky, the lower sky, the abyss or area of the dead from which rebirth occurs, and the upper sky, the place of refreshment, of the cool waters, the place to which the king wishes to come.

Thus this example presents the deceased king as having come to Nut after leaving behind his father, the earth god Geb. Here Geb represents the throne on which sits the deceased king's son Horus, the deceased king having become Osiris, Horus's father in the Egyptian mythological

schema. But the text also introduces the concept of becoming a singular star among the stars in the sky. With this concept, one moves from Nut as the coffin to Nut as the cosmic deity, in fact eventually, as one learns, a cosmogonic deity.

Reference to the stars appears very vividly on noting that the ceiling of Wenis's burial chamber is totally covered with stars. Centuries later in the royal tombs of the late second millennium BCE and a number of subsequent papyri, Nut herself appears graphically arched over the earth covered with stars, her spouse Geb lying languidly on the earth beneath her, the two separated by their father Shu. Not surprisingly then, with the concept of the Osiris king ascending to Nut in the sky, one finds him moving through or by means of Shu. The following text illustrates this idea nicely as the king is commanded to:

Go forth and open a way through the bones of Shu that the embrace of your mother Nut envelop you.

The king thus ascends to Nut in the sky, and one finds he is actually identified as the sun who Nut bears daily:

His mother the sky bears him living every day like Re,
And he will appear with her in the east and he will be at peace with her in the west.

This text posits Nut as the mother of the sun, representing both the rebirth of life and the peace of death, and in the daily cycle of the sun circling the sky. As the mother of the sun, she sees to the daily appearance, birth, of the sun so life can proceed, having overseen the sun's "death" before, in later iconography shown by her swallowing the sun.

Thus one sees the goddess Nut, the facilitator of all this activity, as the progenitor of the king in his new life, a star, identified with the sun and thus also cosmogonic in her form of darkness bringing forth life to the earth on a daily basis. She represents, in fact, two sides of the same coin, functioning the same as cosmogonic deity and mortuary goddess.

Susan Tower Hollis is a professor and mentor for the Genesee Valley Center and a core faculty member in the Master of Arts in Liberal Studies program of the School for Graduate Studies. Her doctoral degree is in ancient Near Eastern languages and civilizations, and her field of expertise lies in ancient Egyptian literature and religion. She is currently under contract to write a book on five major early Egyptian goddesses.

Unconventional Computing: Information Processing with Biochemical Reactions

By Marina Privman

My academic background is in analytical electrochemistry. As a faculty member at Empire State College, I have had opportunities to blend various dimensions of scholarship. Specifically, my recent engagement in scholarship of discovery has included laboratory research studying applications of electrochemical techniques in the emerging field of biocomputing – information processing with biomolecules. Biocomputing is a highly interdisciplinary research area, at the interface of biochemistry and computer science. My research has been carried out in collaboration with members of the research group headed by Prof. E. Katz, in the Department of Chemistry and Biomolecular Science at Clarkson University.

It is worth noting that many of the students enrolling in the chemistry studies which I offer at my home unit at Fort Drum are active duty military and their adult family members who prepare for careers in the medical field. My research experience and its potential medical applications have provided talking points of close personal and professional interest to these students. This brings additional meaning to the subject matter and allows for better engagement with students in their studies.

Information processing by means other than silicon-chip devices is referred to as "unconventional computing." It has been the focus of an extensive recent research, aimed at developing new applications and extending functionalities of modern electronics. For example, in chemical computing, logic operations (such as "**0/1,**" "**AND/OR**") are performed by using chemical reactions. A significant number of such operations have been realized with solutions of various chemicals.

The emerging field of biocomputing utilizes the chemical reactions of biomolecules, which are native to living organisms, such as DNA or proteins. Proteins which

accelerate (catalyze) biochemical reactions are known as enzymes and are commonly used in biocomputing. Enzymes are very specific with respect to the chemical reactions they catalyze: each interacts with only one particular reactant or class of reactants. The enzyme can identify its specific reactant in a complex soup of chemicals present in a living cell.

In electronic devices, "logic gates" are the building blocks of digital circuits. Each type of logic gate is able to make a certain decision, and combinations of "logic gates" form circuits or networks designed with specific tasks in mind.

The natural specificity and compatibility of biomolecules allows for linking individual enzyme-based logic gates into networks, thus creating more complex networks, and so can, for instance, imitate natural biochemical pathways by simultaneously processing multiple biochemical signals.

Compared to electronic circuitry, biocomputing systems have low levels of complexity and slow rates of information processing. Nonetheless, biocomputing networks show a great promise for applications as interfaces between natural physiological systems and artificial implantable biomedical devices, functioning as sensors and physiologically controlled actuators. A network of enzyme logic gates can simultaneously process several input biomarkers, elevated levels of which indicate specific injuries. The output signals can be **YES** or **NO** responses to each kind of injury. Another application involves elimination of wires and batteries from implantable devices which could instead be powered by miniaturized bio-fuel cells utilizing natural energy sources, such as glucose and oxygen in the blood.

The focus of my research has been on the development and study of biochemical multi-enzyme/multi-signal processing logic networks of scaled up complexity. Upon application of the appropriate combinations of molecular input signals, the biochemical reaction cascade generates acid and switches on an electrode which responds to the changes in acidity. Our

team's work, reported the first example of an artificial bioelectronic system where the electronic component was controlled by a biocomputing system of high complexity.

As part of my ongoing 2010-2011 sabbatical leave at Clarkson University, another such system is being investigated for sensing two biomarkers for mechanical liver injury. This project is funded by the Office of Naval Research.

Results of Published Research

Our logic network is shown in the Figure (page 25), in Scheme A of Panel 1. The network was assembled by dissolving its components in an aqueous solution. The working solution incorporated 3 enzymes, designated as ADH, GDH, and GOx.

Four different chemical input signals, NADH, CH_3COH, glucose, and oxygen (designated in the figure by its chemical formula, O_2), were applied in different combinations. Each combination activated a different sequence of enzymatic reactions. The input signals were assigned the logic value **0** in the absence of the respective chemicals. When the chemicals were added to the solution in predetermined concentrations, their respective input signals were designated as **1.** The operating concentrations for each of the chemicals in the network were selected after the initial optimization. Our aim has been to generate sufficient changes in the acidity for quality detection of the output, within a reasonable period of time.

The change in the acidity is a chemical signal that can be readily measured in the presence of high concentrations of proteins and other substances dissolved in the same solution. Acidity is measured in units of pH. The pH value of 7 corresponds to neutral solutions. Acidic solutions have pH below 7. In our logic network, only the production of gluconic acid resulted in changes of acidity and the corresponding decrease in pH values of the
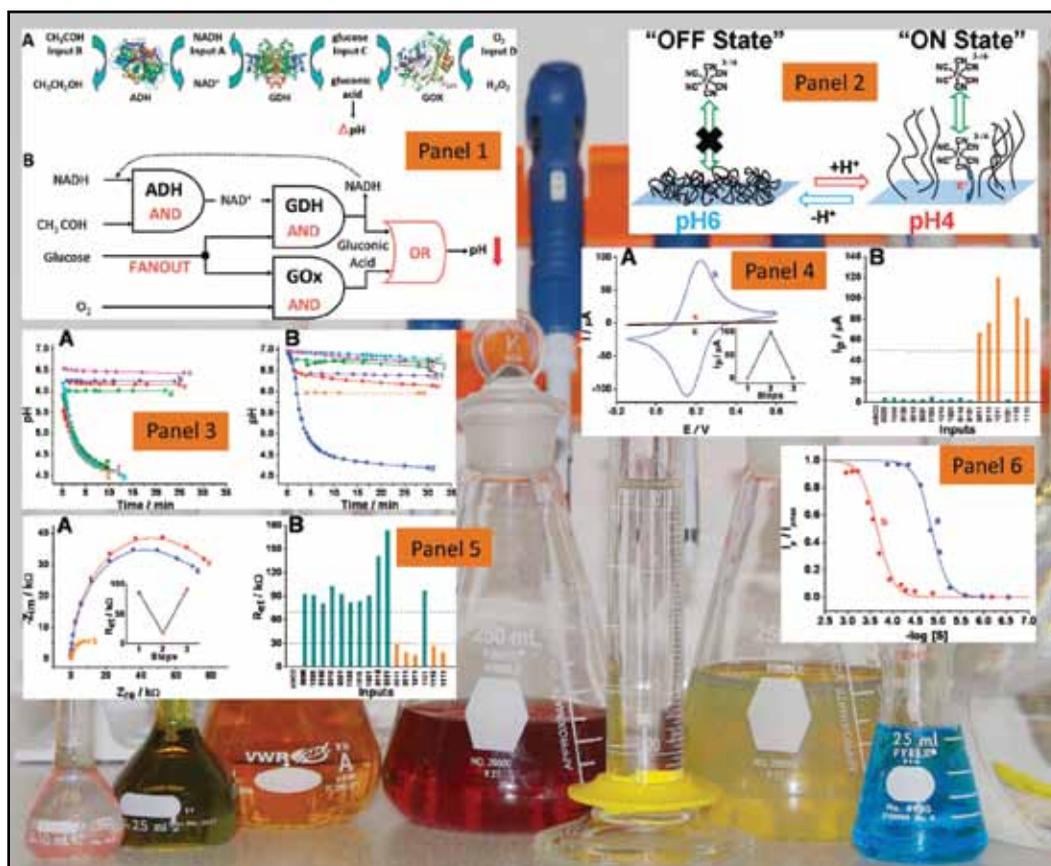
Figure. Biochemical information processing: The schematics and experimental characterization of a logic network of enzymatic reactions processing four chemical inputs, with the output coupled to a pH-responsive electrode.

working solution. Other reaction steps did not affect the pH. Acidic pH, which served as the

Scheme B in Panel 1 represents our biocatalytic system in terms of an equivalent logic circuitry. The first reaction is catalyzed by enzyme ADH. One of its products, NAD+, is subsequently utilized by the reaction catalyzed by GDH. Since NAD+ can be produced only in the presence of both input signals required by ADH (**1,1** input signal combination for NADH and CH_3COH), the first reaction corresponds to the logic **AND** gate.

The second logic gate, based on GDH, converts glucose into gluconic acid. Since the production of gluconic acid requires the presence of both

glucose and NAD+, the GDH gate also realizes the **AND** logic operation. NADH produced as a by-product of the GDH-catalyzed reaction, recycles to the input of the first **AND** gate. This generates a feedback loop.

The third logic **AND** gate, based on GOx, also utilizes two inputs, glucose and oxygen (O_2). Working in parallel with the first two gates, it also produces gluconic acid. The splitting of glucose between two parallel biochemical reactions models the FANOUT function. Although FANOUT is very common in electronics, it is not as readily achieved in biochemical systems. The FANOUT gate was tuned by adjusting the activities of the GOx and GDH enzymes and, thus, the rates at which

they consumed glucose. As the result, the two catalytic branches generated gluconic acid at about equal rates. Production of gluconic acid via two parallel reactions resulted in the logic operation **OR**. Using different input combinations to activate only the GDH or the GOx gate, or both of them simultaneously, generated gluconic acid and the resulting drop in pH values. Not shown in the Figure is that the acidic pH values produced by our biocatalytic network could be reset to neutral values by adding another enzyme, urease, and urea.

The scheme shown in Panel 2 represents the ON and OFF states of a pH-sensitive electrode which was immersed into the biochemical solution.

The 4 chemical inputs, NADH, CH_3COH, glucose, and oxygen, can be added in 16 different combinations. Only some of these combinations result in the production of gluconic acid. Variation of the pH with time was monitored following the application of each of the 16 input signal combinations. The results are shown in Panel 3. Here, graph A groups the results for the oxygenated solutions and graph B for the deoxygenated ones. All experiments were started at pH values between 6 and 7. For the input combinations resulting in near horizontal lines, the original pH values were not significantly changed. This was considered as the output signal **0.** Input combinations that led to production of gluconic acid caused the pH values to drop below 4.5, in 5 to 8 minutes. The pH below 4.5 was considered as the output signal **1.**

Changes in acidity, discussed above, were transduced into electronic signals by a pH-sensitive electrode.. Two electrochemical techniques were used to analyze these electronic signals, cyclic voltammetry and impedance spectroscopy. Panel 4(A) shows a typical set of cyclic voltammograms. What appears in this figure to be a flat red line *a*, is the cyclic voltammogram recorded at the initial neutral pH, when the interface is blocked and the

electrochemical process is inhibited. Similar flat curves were obtained for all combinations of the input signals which did not generate gluconic acid (output signal **0**). The blue curve *b* was recorded at pH 4.3. This resulted in the reversible electrochemical process with two well pronounced peaks and high values of the peak currents, I_p. Cyclic voltammograms of similar shape were obtained for all other input combinations which generated gluconic acid (output signal **1**). The biocatalytic resetting of pH to the initial neutral value returned the interface to the OFF state. This resulted in the black, flat curve *c*. The current responses derived from cyclic voltammograms for all the 16 combinations of the chemical input signals are summarized in Panel 4(B). High peak currents (I_p above 50 µA) were considered as the electronic output signals **1.** The low currents obtained from flat curves (I_p below 10 µA), were considered as the electronic output signals **0.**

Cyclic voltammograms recorded in the OFF state of the electrode do not provide the necessary information for the quantitative characterization of the electrode/solution interface. Therefore, for each of the 16 input combinations, we also obtained the corresponding impedance spectra. Curve *a* in Panel 5(A) shows a typical impedance spectrum plot for a solution where the electrode is in its initial OFF state. This curve has a semicircular shape with a large diameter, which reflects a large electron transfer resistance. Curve *b* in Panel 5(A) was recorded at pH 4, when the electrode was switched ON. This curve has a considerably smaller diameter, corresponding to a decrease in the electron transfer resistance. The subsequent application of the reset function returned the interface to the OFF state. The electronic output signals derived from the impedance spectra were determined as **0** when the electron transfer resistance, R_{et}, exceeded 70 k Ω, and as **1** for R_{et} below 30 kΩ.

Panel 6 shows variation of the electrode peak currents with acidity, represented in the figure as –log[S]. To obtain data for curve *a*, successive small volumes of sulfuric acid were added to the

solution with an input combination that could not generate gluconic acid internally. In this case, the [S] values reflected the concentration of the added acid. For curve *b*, [S] represented the concentration of glucose. Here, the concentration of glucose was changed, while all the other chemical input signals in the solution were kept at their logic value **1**.

Different concentrations of glucose generated different values of pH *in situ*, through a cascade of biocatalytic reactions. Acquisition of both sets of data points started at neutral pH, when the electrode is in the OFF state, and moved to a sufficiently acidic pH range to switch the interface ON. Both data sets were well fitted with a sigmoid curve, with the same slope at the respective points of inflection. The steep slope of these curves reflects a sharp transition between the OFF and ON states of the electrode. The sigmoid shape of the curves is significant because it describes behavior of electronic filters which suppress noise levels of the binary input signals. Our data shows that the sigmoid response is a characteristic of the polymer-brush attached to the electrode surface, rather than of the chemical kinetics of the enzymatic reactions in the biocatalytic cascade. Thus, a similar sigmoid shape (noise-suppression property) might be expected for other biocatalytic networks interfaced with polymer-brush fictionalized electrodes.

Conclusion

The research work outlined here studied a four-input biochemical logic network with stable information processing characteristics.

This system processed a complex pattern of biochemical signals using enzymatic reactions. Its output signal was read out electronically by coupling biocatalyzed reactions to a pH-sensitive electrode. The observed sigmoid-response processing of the biocatalytic output signal by the electrode demonstrated a significant capability to suppress noise. Such signal transducing interfaces can be applied in various implantable "smart" bioelectronic devices, such as biosensors, biofuel cells, or security devices, controlled by physiological conditions in living organisms. Further development of enzyme logic networks responding rapidly and reliably to complex patterns of biomarkers and coupled with electronic transducers and actuators shows promise for revolutionizing medical treatment, particularly in emergency care.

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Scholarship

"The Scholarship of Integration …

… is serious, disciplined work that seeks to interpret, draw together, and bring new insight to bear on original research."

Ernest Boyer, 1990

Scholarship Reconsidered, Discovered and Integrated

By Nadine T. Fernandez

Boyer's call to reconsider scholarship challenges us to actively pursue our research agendas, broadly defined, for research is the life-blood of the university. We, like our students, are, first and foremost, learners. We set an example for them as we struggle to formulate new ideas, try to figure out how to use the latest databases in the library, plough through literature searches, write and rewrite drafts of articles and conference papers, read and read some more, and turn to our peers for help again and again. Reflecting on Boyer's reconsideration of scholarship in the context of our distributed, nontraditional environment raises questions of how we can implement and integrate scholarship into our roles as mentors. Following are my personal experiences as a mentor who has also conducted research, and some reflections on the logistics and challenges of integrating research into our daily work.

While engaging with the complex and compelling mentor model at Empire State College, I have been able to keep my research going at a slow but steady pace. For the most part, I have been engaged in what Boyer calls, "the research of discovery," contributing a few grains of sand to the vast beach that is human knowledge. For the last 20 years, my work has focused on the island nation of Cuba, more specifically on race and gender relations and on the social impact of the growing tourism industry in post-Soviet Cuba. My interest in Cuba began in graduate school and has only strengthened over the years. To study the intersection of race and gender on the island, I explored the experiences of interracial (black/white) couples. Given Cuba's centuries long history of mestizaje (race mixing), interracial couples are often overlooked as too commonplace to be of much interest. Yet, as I found in my research, race was still a salient issue for them; in fact, over the course of the Cuban revolution, the social meanings of these interracial couplings have changed.

In post-Soviet Cuba, interracial couples moved through a social world fraught with shifting connections of class, race and culture. I also examined the social impact of a burgeoning tourism industry in Cuba with an eye to how the growing presence of white European and Canadian tourists in Havana was remaking race and gender relations at the local level. Currently, my research is following an outgrowth of tourism, namely marriage migration. Since the 1990s, increasingly Cubans have emigrated via marriage with a foreigner. Cuban communities comprised of these marriage migrants are springing up all over Europe.

My most recent research focuses on the Cubans who have immigrated to Denmark through marriage. As in my earlier research, I am concerned with conceptions of gender and race and how these relations are constructed in the context of the global north/south divide that gives rise to these foreign tourist-Cuban encounters. For me, all of this is very heady and exciting, but in many ways seems much removed from my role as mentor. As I see it, the challenge lies in implementing Boyer's "scholarship of integration."

The topics of Cuba, Latin America or the Caribbean are not in the forefront of most of my students' minds, except perhaps as sunny destinations to escape to in January. Syracuse, New York, is a long way from Cuba, and compared to New York City it does not have a very visible or large Latino population. So, in my seven years as a mentor I can count on one hand the number of students who have come to me with a specific interest in learning about Cuba. This may seem like a sad situation for me as a scholar and teacher, but I was saved, in part, by the General Education requirements!

What many saw as a burden and an imposition, I welcomed with open arms. My particular favorite was the Other World Civilization requirement. It gave me the opportunity to offer studies on Latin America, the Caribbean and even on Cuba. The General Education requirements brought students (willingly or

reluctantly) into my studies on Latin America and the Caribbean. The goal then for me was to turn this "obligation" into a worthwhile "option" for them.

While my own research interests in Cuba are quite specific (and somewhat narrow), I try to engage in what Boyer calls the "scholarship of integration" by making my knowledge relevant and interesting for my students. My studies rarely focus solely on Cuba (unless that is the student's interest), but rather on the Caribbean or Latin American regions where we can explore a range of cultures including Cuba. I strive to develop learning activities that build on students' own contact with the region. Did they ever vacation in the Caribbean? If so, then we can develop a project building on their experiences. Did they know or work with someone from Latin America? If yes, then perhaps an interview with that person can bring to life some of the topics we covered in the readings.

Given that our students are encouraged to take ownership of their learning, and steer the boat as it were, I cannot force them to make a stop in Cuba. But through the scholarship of integration, I readily can offer Cuban examples for comparison, share my own experiences with living and traveling in Cuba, and provide guidance for resources on the region that relate to their lives and interests. In the context of Empire State College's vision of student-centered learning and mentoring, it is a delicate balance to maintain. While the studies I offer perhaps are not as Cuba-centric as I would like, I learn much from my students as their own projects bring me to issues and areas I know less about. While General Education obliged my students to learn about Cuba, the Caribbean and Latin America, my students obliged me to sail from the island I love to explore less familiar shores. However, the challenge still remains: how to find time for research at all when the multifaceted work of mentoring pulls us in so many directions?

Leaves

My life as a mentor, mother and mate is a busy one. So, in my years at the college, I needed to "discover" how I could "integrate" research into my schedule. I have no magic bullet, but I hope my experiences can be useful to other mentors who seek to keep active in their disciplines while honing the art of mentoring. If we take Boyer's call to reconsider scholarship seriously, we owe it both to ourselves and to our students to remain engaged in research, broadly defined.

Empire State College offers several means of support for professional development. I was able to take advantage of many of these options (faculty development awards, UUP/IDA funds, a three-month reassignment, a UUP Dr. Nuala McGann Drescher Leave Award, and now a year-long sabbatical). While many faculty members may be aware of these possibilities, some find daunting the logistics of actually taking advantage of the reassignments and leaves. Many may feel that it would be too difficult to be on a reassignment leave for several months, and questions and insecurities abound: What will my students do? How will they get their degree plans finished? What about the upcoming committee meetings? Who will monitor the new instructor I just hired? What if the section doesn't fill? How will the students evaluate me if I leave now? What will this mean for my tenure or promotion review?

The intensely individualized nature of our relationships with students and the many varied responsibilities we manage daily can make the thought of leaving for a few months overwhelming. However, I honestly feel we need to face these obstacles head on, rather than take the safe, and perhaps easier, path.

While I feel my work with my students and mentees is unique and individualized, I don't think I am irreplaceable, nor do I think that my students can only navigate the process of educational planning with my guiding hand. Taking up research or writing actively, like during a reassignment, also requires letting go.

For me, it is only possible to be deeply present in a project if I know the day-to-day mentoring and area-coordinating work is running smoothly without me. It was most helpful for me to take my reassignment as a block of time, rather than spread out over the year.

For this to happen successfully requires first and foremost a supportive administration (dean and associate dean). With advance planning, it should be possible for faculty to disengage from the work of mentoring to focus on other projects that are essential to their professional development.

For the faculty member's home center to continue to function while we are gone, and for students to continue to be well served, I think we also need to trust and respect our colleagues as mentors. Realigning student numbers among full- and part-time mentors can give us all a chance to try a reassignment and I believe the students will be enriched by the perspectives and interactions with our colleagues.

In Syracuse, for example, we offer group workshops in Educational Planning which help all of us as mentors learn the approaches of our colleagues and meet each others' students. I think these workshops also build an atmosphere in which we all feel we are on the same page. Such practices can ease the process of transferring students to other mentors if someone has a reassignment. At the Center for Distance Learning, assistant area coordinators and colleagues also step in to support someone on leave. It gives the 'backfill' area coordinators the opportunity to see other peoples' courses and interact with other instructors, which can also be a rewarding experience for them.

The logistics of exiting should be as seamless as those of returning after the reassignment or leave is completed. Centers and units can be proactive in setting up practices which build a supportive rapport among mentors so reassignments and leaves are not seen as placing a burden on others.

The Fifth Day

In reality, reassignments and research leaves may only happen every few years at best. So what can we do in the meantime? Most centers expect faculty to be engaged in professional obligations with students four days a week and one day a week can be dedicated to our own professional development or research. I hate to admit it, but most often mentoring activities encroach on that fifth day for me; students need my feedback on assignments or discussions in CDL courses need my response. The fifth day often hovers on the horizon like an oasis that I never am able to reach. Even if I don't come into the office that day, it is difficult to switch gears from mentoring to my projects once every seven days. I can't sustain momentum in writing, or even reading, if I pick it up only once a week and I find myself using half the day just to figure out where I left off.

To make the fifth day really work, I think we need to approach it creatively and individualize it to fit our schedules, work habits and projects. For example, I know that my best writing hours are in the morning, so to the extent possible I try to make my "fifth day" happen from about 8 a.m. to 10 a.m. every day. This way I can keep a project current in my head and make consistent progress even if I only have a few hours to dedicate to it. Other mentors might find it more conducive to their work habits or the nature of their projects to take a month's worth of "fifth days" all together and have a whole week out of the office. With the support of colleagues and administrators, I think flexible and creative solutions can be found within all centers and units to make space for ongoing faculty development and research. The "fifth day" can become a reality, not just a dream, but we have to make the effort to reclaim it.

Communities Here and There

Ultimately the most sustaining and invigorating research and professional development activities come from my connections with colleagues across the college and in my disciplinary and professional organizations beyond Empire State College. It is key to build community within the college and also maintain and cultivate relationships in disciplinary and professional associations. Through these connections I am able to keep active in conferences and keep abreast of current research in anthropology in general and on Cuba more specifically.

I have been particularly lucky to find a cross-disciplinary set of Cuba colleagues here at Empire State College. Though we are located at different centers, we manage to meet at college meetings. Ruth Goldberg, a film scholar, and Jill Hamberg, an urban planner, have been invaluable resources for me. They have provided feedback on drafts of chapters and conference papers I have written, and we have organized events together both at international conferences and at Empire State College. It is wonderful to be able to share my passion about Cuba and things Cuban with these mentors. Last year the three of us were able to give a joint presentation on Cuba at the Central New York Center, accompanied by a photo exhibit of mentor Mel Rosenthal's pictures from Cuba. Now Ruth, Jill and I along with Mark Abendroth will be the first collective Scholars Across the College project for the academic year 2011-12. We will be taking our Cuba presentation on the road, and Mel's photo exhibition has also travelled to other regional centers. I am sure as I continue to develop as a scholar, there are more connections within the college waiting to happen.

While Areas of Study may provide a natural home for some at Empire State College, we should also remember that many of our closest connections may lie beyond or across Areas of Study. The college should continue to seek new ways to foster these cross-disciplinary, cross-area connections. Areas of Study are categories given to us by New York state mandate to organize individualized student degrees, but we need not reify them or assume they are necessarily a useful way of organizing faculty. Likewise, we should encourage ways in which faculty can teach and collaborate more easily across centers.

Residencies are a great example of one way to do this, but can we think of others?

Though being the "department of one" at my center has its positive aspects, being a cultural anthropologist at Empire State College can also be a lonely experience. I can count the number of anthropologists across the college on one hand. So, it has been very important for me to maintain close connections to my disciplinary organizations. I have used faculty development money annually to attend the national anthropology conference, as well as some other conferences on Cuba and Latin America. Whenever possible I try to give a paper or organize a panel for these events. Being part of a panel provides opportunities to meet new colleagues and interact with old friends. Building these networks outside of the college has been vital to me to stay current with new resources to use with my students, but also to keep connected to the world of research related to anthropology and Cuba. New opportunities for collaborations, new ideas for papers or articles, new materials and approaches to teaching all have flowered from my connections outside of Empire State College. Both communities within and beyond the college have feed my scholarship of discovery and of integration.

I feel privileged to work at an institution that welcomes innovation and new ideas. My hope is that every faculty member at Empire State College experiences the institution as flexible and supportive (just as we hope our students do). I work at a teaching college that has let me carve out small spaces for research and writing. Solid colleagues and professionals, supportive administrators, and unfailing support staff have helped make this possible and to all of them I am grateful. When at its best, I think Boyer would approve of our open perspective on scholarship and our steps toward helping faculty pursue their research to keep their mentoring fresh and inspiring. The biggest challenge is to make sure that this is true in every corner of our distributed institution.

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Boyer's Reconsideration: Connections, Transformations and the Scholarship of Integration

By David Starr-Glass
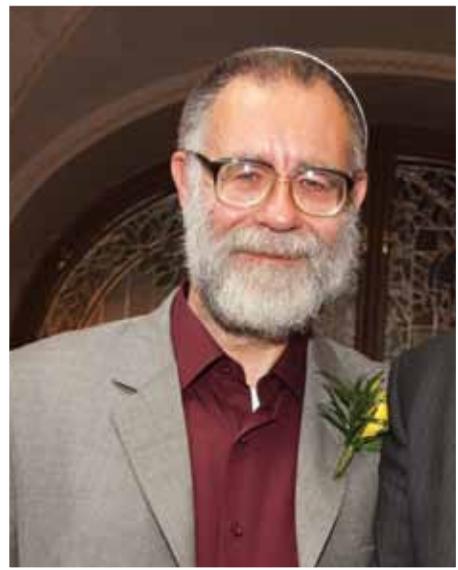
Ernest Boyer's (1990) reconsideration of research focused on its purpose, function, and relationships. Instead of looking at the internal aspects of research, its structure and paradigmatic core, he looked at the external expression and purpose of that interiority. His basis challenge was that "a more comprehensive, more dynamic understanding of scholarship can be considered, one in which the rigid categories of teaching, research, and service are broadened and more flexibly defined."

Boyer emphasized that that scholarship should have a "broader, more capricious meaning, one that brings legitimacy to the full scope of academic work." He viewed traditional research, pushing further into a given territory in order to more completely map it, as exploration. He suggested and legitimized "stepping back from one's investigations, looking for connections, building bridges between theory and practice, and communicating one's knowledge effectively to students." Collaborative, interdisciplinary and – in Boyer's terms, integrative research – considers the possibility and value of making connections between disciplines, allowing for those within the discipline to share understanding and work collaboratively with those of other disciplines. Rigid walls of disciplinary paradigm and researcher exclusivity are moved, if not removed, allowing for a different light to be shed on areas of interest and concern: a synthesis of experience and understanding, and "educating nonspecialists."

In this brief essay, I consider the scholarship of integration in terms of several metaphors of difference and spatial exploration that I often use in my work. I use my own research and practice as a business mentor in International Programs as an example of the strength of an integrative approach that takes strangeness, shifting and luminal spaces and the exploration of otherness as starting points.

Interdisciplinary approaches provide opportunities for scholars to come to a better understanding of the work of those not in their field. Connections thus made can lead to sharing ideas, or the "borrowing" disciplinary theories (Floyd). In considering the rewards of working at disciplinary intersections of organizational studies, for example, Zahra and Newey "propose that theory building at the intersection can have different impacts on five domains: theories, fields, disciplines, research communities, and key external stakeholders."

Such interdisciplinary connections may create new perspectives, redefine boundaries, or strengthen the disciplines involved. Often, but not inevitably, looking for connections with other disciplines, with different perspectives and ways of understanding, results in synergism. Rather than the both disciplines complimenting one another, their juxtaposition leads to a new and unexpected energy. Sometimes, the juxtaposition can be direct: two bodies of knowledge placed side by side with connections between them suggested or explored. Sometimes, the connections can be considered metaphoric.

Metaphors of Exploration and Integration

Before exploring specific metaphors, it is worth pointing out that metaphor itself is a linguistic and cognitive integration of unlike things. Metaphor is (Lakoff) "a cross-domain mapping in the conceptual system." Metaphor is not simply a figure of speech or literary turn; rather, it is (Fauconnier) "a salient and pervasive cognitive process that links conceptualization and language." The metaphor insists that A is B, when that seems obviously not to be the case. That insistence, at a cogitative level, forces a deeper consideration of the two domains juxtaposed and (Cornelissen & Kafouros) "as such, a metaphor may advance new insights and inferences that were non-existent before… [and can] lead to cognitive shifts in our theoretical framing and subsequent understanding."

Eva Feder Kittay reminds us that metaphor is a way of rearranging the furniture of the mind and such a rearrangement can lead to novel possibilities. Cornelissen reminds us that many organizational theorists "concur in ascribing it [metaphor] a heuristic role, for its capacity to open up new ways of understanding and to lay out the groundwork for extended theorizing and research." Metaphoric realignment can be used within disciplines; it can also be used to suggest or provoke connections between what seem to be unlikely bodies of knowledge.

In my own work with international students, for instance, students of different nationalities with different cultures come to Prague to engage in management studies. Past assurances and old certainties do not necessarily apply in their altered culture: new possibilities suddenly become possible, similar to metaphor. The point is not to sensitive these students to change, but rather to sensitize them to the dynamics of altered possibility – the process of actively establishing new meaning based on a constant reinterpretation of the past and present.

The forced connection between different bodies of knowledge has proved helpful; indeed, metaphor is used fairly widely in organizational studies. Metaphor, and the classical logic of metamorphose (using Ovid's Metamorphoses), has also provided me and my students with ways of viewing organizational contexts from different and insightful perspectives. Allowing students to approach complex organizational contexts through the portal of classical mythology – with archetypal imagery, logic of metamorphoses and novel metaphor – allows students to recast and reevaluate their organizational experiences and perceptions.

I have used metaphoric insistence and different systems of logic, specifically totemic systems, not only to bridge knowledge boundaries and paradigmatic frontiers but to advance self understanding. For example, those undergoing evaluation of prior experiential learning are empowered by reconsidering boundaries

and "academic" classifications; student empowerment and reflection in the assessment process can also be initiated by a consideration of the possibility and ambiguity of metaphoric representations.

Strangerhood as Metaphor and Methodology

The 19th century composer Gustav Mahler, a German speaker born in the Lands of the Czech Crown, which in his day was part of the Austro-Hungarian Empire, is said to have remarked that in Prague people considered him German, in Vienna Czech, and everywhere as a Jew. Sometimes we are perpetually strangers: by circumstance, context or by inclination. The stranger sees things differently; there is a constant novelty and an understanding that customs and behavior, while specific, are not universal. The stranger appreciates, but is not constrained by, existing patterns of power, privilege, and obligation. This has often been recognized as a valuable quality. Strangers, brought in from outside, were charged with governing the Italian city-states, with the notable exception of Venice, during the Renaissance. Georg Simmel, writing in 1908 and himself no stranger to strangerhood, captures an essential aspect of the stranger: "the potential wanderer; although he [sic] has not moved on, he has not quite overcome the freedom of coming and going."

Bauman recognizes a changed attitude towards strangers in modern times:

If the left and right, the progressivist and the reactionary of the modern period agreed that strangehood is abnormal and regrettable, and that the superior (because homogenous) order of the future would have no room for the strangers, postmodern times are marked by an almost universal agreement that difference is not merely unavoidable, but good, precious and in need of protection and cultivation.

Thus reinstated, the good and precious stranger can comment on what is strange to her and in

sharing that strangeness, be different. We might also come in time to hear, albeit indistinctly at first, the voice of the Other and enter into a dialogue that recognizes Otherness and redraws our own lines of difference and demarcation. In looking at the ethics of dialogue with otherness, Kostogriz and Doecke pick up this change: "When we become responsible for the Other, we are fighting our unconscious and accept the Other in ourselves."

From a research perspective, assumption of strangerhood can significantly alter what we experience. The Simmelian stranger presents a "unity of nearness and remoteness" and is "near and far at the same time, as is characteristic of relationships founded only on general human commonness." In approaching the difference and otherness associated with the students that I deal with in Prague, the role of stranger and recognition of my own strangerhood not only mirrors that of students, many of whom are not Czech, but provides a perspective for new understandings and dialogues. Learning their language, culture, customs and history accentuates my "nearness and remoteness." Otherness in these students is paralleled by an incursion into the Otherness of self. Assumption of strangerhood, personally and as a teaching strategy, leads to a deeper understanding of cultural assumptions. Teaching marketing, for instance in Jerusalem using an American curriculum and textbook and predominantly Belgian students, presented the opportunity for us to explore our own cultural biases and assumptions of the encountered text.

Dialogues that transpire when strangers meet can result in deep and meaningful personal engagements: whether sitting in a seashore garden in southwestern Turkey; on verandas of partially constructed villas on the Dalmatian coast of Croatia; or in the shadow of a bronze statue in Central Bohemia. In Turkey, the key element was the ambiguity of language and imparted knowledge. In Dalmatian, the focus was on the richness provided by international education and potential for intercultural experience. In Central Bohemia, the dominant

themes were presentation of nationality, dynamics of national identity formation and the possibilities of coming to a more appreciative understanding of personal difference and similarity through the recognition and acceptance of strangerhood.

The Map is Not the Territory

Paradigms are the lenses through which we view our academic disciplines. A paradigm is the epistemological and ontological constellation that has historically shaped ideas, assumptions, models, methodologies, and research agendas in a field of discovery. The success of the paradigm rests on its ability to provide a cohesive integrity for what is known about a subject area and to stimulate new exploration. A given paradigm came into being, or subsequently changed, when (Kuhn) "their achievement was sufficiently unprecedented to attract an enduring group of adherents away from a competing mode of scientific activity… [and] was sufficiently open-ended to leave all sorts of problems for the redefining group of practitioners to resolve."

Paradigms, thus constituted, eventually collapse under the weight of unresolved, and irresolvable, problems encountered. Then, between the tensions of revolutionary pressure and conservative resistance, they are replaced by new formulations more robust and more inclusive. Thomas Kuhn suggests that paradigms are the consequences, not always intended, of all attempts to explore and come to terms with knowledge. They are constructed collectively to make sense of what we do, what we anticipate discovering, and what we eventually find. Research within a well-developed paradigm, centered on strong and robust theories, naturally leads to a focus on what Boyer terms discovery. Discovery research has proved very productive in many disciplines. Why, then, did Boyer urge for a consideration of other modes of research?

Thinking in paradigms is a natural and accepted activity for most of us. Our disciplines are socially constructed territories in a broader landscape of knowledge. Paradigmatic maps specify boundaries, map out fields of study and suggest significant features for research. In constructing those maps, disciplinary cartographers translate their experiences of the underling landscape, representing features considered salient. With these selective topologies, paradigmatic maps reveal a great deal about the community and conventions of map makers.

Paradigms map the territory, impose boundaries and borders, and suggest journeys and destinations. They delineate disciplinary territory. Yet Alfred Korzybski powerfully reminds us that "a map is not the territory it represents, but if correct, it has a similar structure to the territory, which accounts for its usefulness." Paradigms, considered and reproduced as maps, provide the structure to organize and evaluate explorations; however, they limit what is done and what might be done. Research – re-search – consists of going over once more, from a different perspective, what we think we have understood. It involves looking for different pieces, and new patterns, in what was thought familiar. Research motivated by connection leads to interdisciplinary collaboration and consideration; it reaches out to peers distanced by discipline and arbitrary lines drawn on our intellectual maps.

Liminal Zones and Boundary Work

Boundary work, between disciplines and between communities of academics and practitioners, raises another concept: liminality. Liminal zones are the threshold phases between two different ordered states. Characteristically in liminal zones, there is an experience of being free from the constraints and assumptions of both social systems, or as Victor Turner puts it:

… [a going] in and out of secular social structure, which reveals, however fleetingly some recognition (in symbol if not always in language) of a generalized social bond that has ceased to be and has simultaneously yet to be fragmented into a multiplicity of structural ties.

Bringing together different systems of logic and sense-making stimulates the search for connections, not simply across different cogitative systems but across disciplinary borders. The most direct way of making interdisciplinary connections is simply to bring together bodies of knowledge and demonstrate the possibilities of linkage. Connections can be made with other disciplinary areas in order to promote the flow and creation of new perspectives. Bridges can be constructed between disciplinary areas and also with other knowledge communities. These bridges to and across luminal spaces allow for the movement of ideas and of people.

Liminality, as the nondefined space between theory and practice, has provided me with the opportunity to reflect on difference and opportunity. For instance, it was used by myself and my late friend and colleague, Avraham Schwartzbaum, in exploring the differences in culture and epistemology of secular academic and religious (Orthodox Jewish) communities of learning, and in comparing and contrasting the structures of learning within these communities in terms of the challenges and opportunities presented for the assessment of prior learning.

I try to reflect on the ways in which I am different from, and the same as, my students. Much of what I have done clusters around a consideration of the mentoring process in international contexts, often at a distance. Thinking in terms of liminality raises many issues about creating and sustaining a meaningful and constructive learning relationship, cultural and national differences among students, distanced learners and the creation of networks for social learning, and issues of trust, confidence and authenticity. A scholarship of integration is not a forced journey between different camps; rather, it is the recognition that knowledge is only potent when shared and transformative when it is appreciated from different perspectives and from different paradigmatic traditions. It is also a reconsideration of what Kincheloe has termed a "unilateral perspective" on the world that fails "to account for the complexity relationship between material reality and human perception." Those who approach the interstices between disciplines are, by nature and choice, bricoleurs, operating in the border lands; strangers reflecting on strangeness in zones of liminality.

In his posthumously published essay Boyer (1996), referring to a scholarship of integration, notes that "we need a new formulation, a new paradigm of knowledge, since the new questions don't fit the old categories." That need has become more pressing; the challenge has become even more urgent.

David Starr-Glass has worked with Empire State College's International Programs for more than 25 years, first in Jerusalem and currently in Prague. He holds master's degrees in Business Administration, Occupational Psychology and Education. He has teaching, research and scholarly interests in organization behavior, international education, and the process of mentoring and learning. In 2010, he received the Empire State College Excellence in Part-time Mentoring Award and is serving as a Scholar Across the College during 2010-11. He lives in Jerusalem.

Globalizing Online: International Collaborations, Social Justice and Foreign Language Education

By Nataly Tcherepashenets

Teaching and mentoring played a crucial role in my development as a scholar. Inspired by Ernest Boyer's insight that "teaching, at its best, shapes both research and practice" and drawing on the case of language learning, I contend that online instruction has a unique contribution to the democratic education, solidarity and social justice in the globalized world. Evoking the etymological meaning of education, which is "leading out" (Keagan), celebrating fluidity and being intrinsically eclectic, online learning at its best offers creative ways to achieve a shift from isolation to communication between people of different economic, cultural and ethnic backgrounds. One of these ways is the international collaboration in learning and teaching, which becomes especially important at the time of global cross-mingling of people. This dynamics permits one to re-conceptualize the relations among identity, community and place, and determines the need for complex and nuanced understanding of cultures.

Foreign language education, with its increasing emphasis on intercultural exploration, the deepening of the understanding of one's own culture and the development of cultural sensitivity can be instrumental in addressing this need. It is not by chance that the Russian philosopher Mikhail Bakhtin related the notions of language "response" and "responsibility," the insight which intriguingly coincides with the view of language as a part of inter-subjective reality, shared by Czech Jan Patoka and French Jacques Derrida. All of these thinkers viewed language as intrinsic to the "architectonics of being," around which all values of life and culture are organized, and the main three elements of which are "I, the other, and I-for- the-other" (Bakhtin). Indeed, both mapping the inside of cultures and lying, "on the borderline between oneself and the other" (Bakhtin), language is a powerful tool for the creation of relational capital.

This capital is of high value in the 21st century, when local and world cultures become increasingly intertwined. Indeed, linguistic and cultural competence opens numerous opportunities to experience and to contribute to globalization, and enhances learners' professional and personal growth. For example, as Chinese Foreign minister, and former ambassador to the United States Yang Jiechi claims: "The bridge of understanding and friendship cannot be built without language." According to The Wall Street Journal, "demand for multilingual workers is rising fast," and there is a "supply and demand mismatch at middle and upper management for employees who can speak a second language." In a recent survey of businesses, more than 80 percent said they would place a greater emphasis on "international competence" in hiring and training over the next decade.

In response to globalization, language education has become increasingly macrocontextualized, with its focus on the understanding of the role that language plays in the society and the enhancing of students' ability to communicate effectively in more or less familiar contexts. In the Common European Framework of Reference for Languages: Learning, Teaching, Assessment, for example, this aim of language education is prioritized in the following way: "[I]t is a central objective of language learning to promote the favorable development of the learner's whole personality and sense of identity in response to the enriching experience of otherness in language and culture." Similarly, the development of intercultural communicative competence occupies a central place in the new national standards for foreign language education, proposed by The American Council in the Teaching of Foreign languages. In its statement of philosophy, this aim is summarized as follows: "Language and communication are at the heart of the human experience. The United States must educate students who are linguistically and culturally equipped to communicate successfully in a pluralistic American society and abroad."

This emphasis on the intercultural approach makes it a primary responsibility of the educators in world languages to foster cross-national and cross-cultural understanding and acceptance, along with facilitating the development of four basic skills associated with language acquisition: speaking, writing, reading and listening.

In addition to formal instruction, travel and study abroad programs are often viewed as highly desirable for advancing intercultural communication skills of language learners. However, adult students from Empire State College, typically with families and work obligations, can rarely afford these enriching experiences. Similarly, advanced learners of English at la Universidad de las Palmas, Gran Canaria, located in Canary Islands, a territory distanced from both continental Europe and North America, have very limited resources for educational trips. Their situation is by no means unique. As Zygmunt Bauman perceptively observes, "multicultural age" is the concept of elite, "the majority stays fixed to their place of birth."

I view it as a task of democratic foreign language education to support this majority in their acquisition of intercultural competency, arguably indispensable for their success as democratic citizens and employees in the era of globalization, with its demands for tolerance, cooperation, and continuing self-renewal. In a spirit of solidarity and in an attempt to promote social justice, one can see an urge for creation of alternative educational opportunities for these learners. As Jay Lemke and Caspar van Helden point out, "we need to learn how to support the effective integration of learning across radically different activities, sites, institutions, media, networks and communities."

One of the major benefits of studying abroad for language learners is the development of the competence of an intercultural speaker. According to John Corbett, this learner successfully uses language for the exploration of different cultures and mediation between

different cultural perspectives in communicative situations, especially in those where cultural misconceptions occur. This becomes possible because study abroad and travel often allow for the "constructive engagement with otherness" (Daloz). This engagement implies an emerging of "empathetic connection" with people different from themselves, and recognition of similarities and connections across differences, as well as an integration of the sense of the other with one's own sense of personal and cultural identity. These processes can lead to the questioning of students' earlier formed views and opinions and to the recognition of the concerns, fears and hopes of "the other."

Compatible results can be arguably achieved through the international collaboration online. Lev Vygotsky suggested that students can perform at higher intellectual levels in collaborative situations then when working individually. Furthering this insight one may suggest that the diversity in the group of learners can contribute positively to learning. Working under this hypothesis and inspired by Michael Apple's perceptive observation that "[c]ommunity is best developed out of shared experiences, we plan to develop a new course "Advanced Spanish: Language and Culture" in collaboration with la Universidad de Las Palmas, Gran Canaria. Students from Canary Islands, Spain, will be advanced learners of English. This course will have four major goals: to expand students' knowledge about culture(s) of the Spanish-speaking world and of the United States through the 'live' interaction with native speakers of the target language online; to foster cross-cultural understanding and acceptance thought engaging students in implicit debates on most controversial topics, including "natives"-"foreigners" dichotomy and immigration in its relationship to both American and European politics and globalization; to develop respect for diverse members of the world population, indispensable for the democratic citizenship in the era of globalization; and to prepare students for teamwork with international partners, which

is a highly desirable skill for professional success in a globalized world in almost every discipline.

Our work will be informed by the assumption that international network- based learning can be beneficial in terms of both knowledge and experience. We believe that while participating in building online intercultural community on equal terms, learners in virtual, user-friendly environments will open themselves to a variety of interpretations and explorations, which will enrich their awareness of different cultures and may lead them to the questioning of their previous points of view. Also, as Melinda Dooley perceptively observes, education should reflect current and future needs of the learner. In this era of globalization, one of these needs is an intercultural communicative competence, which enhances learners' productive work in a distanced international team, where each member is empowered to take responsibility for her or his own learning and learns to respect the opinions and work of online partners. The development of such transferrable skills as open-mindedness, flexibility and positive regard for others, which intercultural competence entails, will be one of the main foci of joint activities.

Collaborative activities will be infused through the creation of tasks in three categories. First, the exchange of information, to allow students to establish personal relationships with partners and will increase awareness of cultural differences. Sample tasks will include students' presentations of themselves and their cultures to their future partners through cultural autobiographies, students' interviews of each other on certain cultural topics and a production of a virtual presentation (e.g., via Voice Thread) or a written report based on the interview process. A peer-student will assess the written version of the report, based on the rubric, provided by the instructor.

Second, in order to enhance practice of the intercultural skills of observation and to defy stereotypes, students will engage in tasks that involve comparison and analysis. Activities in this group will be a comparison of two films,

one from each culture, on a common theme and an analysis of perspectives on different intercultural issues, including controversial ones related to politics, religion, alcohol, sex and narcotics through online discussion of various texts and artifacts. These activities will open multiple opportunities for the sort of dialogue Carlos Alberto Torres views as "a democratic tool for dealing with complex cultural conflicts" in education.

Third, the development of intercultural communicative competence will be fostered through collaboration in product creation. Sample activities include a creation of a blog or power point presentation by students in both classes on a topic of mutual interest (e.g., virtual excursions to the places students want to visit together; or an adaptation of the existent advertisement to the audience of a target culture; or a creation of advertisement for the audience in a target culture.)

What would be the role of the professors, who will team teach this collaborative course? My perception of this role is informed by my belief in educators as life-long learners and agents of globalization, who are determined to foster cross-national and cross-cultural understanding and acceptance, as well as to bring equal opportunities to learners across the globe to the extent that it is reasonably possible. Professors engaged in intercultural collaborations would need to open themselves to interpersonal, experiential and process-oriented learning and teaching, where support for responsible students' authorship will go hand in hand with the more traditional language instructor's role as a provider of language resources and a mentor, who would monitor the use of language. Most importantly these professors will enhance the creation of virtual intercultural community, where they will also be participants.

In this way, online learning opens innovative ways for collaboration and communication by bridging the geographical, economic and cultural distances between learners across the globe. At this time of pressure by the neoliberal discourses for market-oriented pedagogy and education, the tasks of both bringing the equality of opportunities and promoting intercultural dialogue continue to be priorities for education, whose major objective and obligation is an expansion of the freedoms of human beings. In the era of globalization, its fulfillment more than ever depends on making it possible for people of different backgrounds to participate in intercultural dialogue on equal terms. Intercultural collaborations in online virtual classroom offer unique opportunities for the realization of this goal.

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The Crabgrass Frontier: Suburbia as Interdisciplinary Study

By Barbara Kantz

I n the decades following World War II, the population of the United States underwent a massive migration to the suburbs. Long Island was at the very heart of that demographic shift when William Levitt designed and built Levittown. Now at the 60-year mark, suburbia is an emerging scholarly and professional area of inquiry that examines this unique cultural landscape and is especially well suited for interdisciplinary study.

In the late 1940's, most of Long Island was farmland or vacant land. The postwar years brought a boom that changed this landscape forever. "Bedroom communities" sprang up, separated by local zoning laws that delineated housing from commercial and industrial space. Development grew first along the routes of the Long Island Railroad, but soon highways brought remote places into easy reach by car. New villages were incorporated, new school districts and water districts formed, and always, more houses were built.

Most of the newcomers were transplants from the five urban boroughs that make up New York City, seeking to build a better life for their families. Their vision was clear: to fulfill the American dream of a house, a car and a family of one's own. These post-war pioneers wanted safe and neighborly communities with good schools, comfort, space and convenience. Consequently, they worked for top-notch school districts, developed industries, established colleges and hospitals, set aside land for parks and beaches and opened shopping centers. In achieving all this, they created a new way of life: suburbia.

Demographically many of us in the Empire State College community, students and faculty alike, are baby boomers, born and bred in suburbia. In 1954, my family moved from Baltimore, Maryland, to "Mayfair Estates" in Commack, New York, the first housing development in Suffolk County. By 2010, census data indicates that more

than half of all Americans live and work in suburbia, a physical and cultural terrain that continues to embody many of America's most cherished ideals. Yet the critique of suburbia has been consistent. Pete Seeger warned that "ticky-tacky" houses would breed conformity. Betty Friedan showed that domestic prisons for women created "the problem that has no name." Blatant materialism redefined the family as a unit of consumption and created a competitive "keeping up with the Joneses" mentality. Suburban values seemed to be rooted in rigid gender roles and material consumption.

While the dynamic growth of the suburbs in the past half-century has had many successes, it has also wrought serious problems. Long Island is now a mature suburb facing many challenges including an aging population, a scarcity of unused land, traffic congestion, lack of affordable housing, increasing ethnic and racial diversity and income inequalities. Long Island taxes are among the highest in the country. Nassau and Suffolk counties are among the most segregated suburban communities in America. Conflicts about undocumented immigrants who tend the lawns of suburbanites have come to a head in communities like Farmingville. Suburbia has become a paradigm that simultaneously unites and divides us. In short, studying the suburbs is an exploration into the processes, people, environments and values associated with America itself.

Studying Suburbia

What do a road-crew member, a newlywed relocated from Texas and an official on a county planning commission have in common? They are all enrolled in a study of Suburbia, an interdisciplinary study at Empire State College.

At lunch break, the crewman reads aloud to his fellow workers excerpts from The Power Broker, Robert Caro's Pulitze-prize winning study of Robert Moses and the development of Long Island. The conversation moves to, "My father said Robert Moses ruined Long Island." Another offers up, "If it weren't for Moses,

we wouldn't have town roads and parkways." The reader is happy to learn the origins of the parkway he drives on daily. As a younger part of an aging crew, he has something to offer them, and they to him.

The newlywed from Texas has just read Crabgrass Frontier by Frederick Jackson, an historical overview of the suburbanization of America. She, who grew up on a cattle farm, thought that the suburbs were small prefab buildings plopped down on cleared farmland. She had no idea that suburbs were connected to the history of New York City or that transportation technology made it all happen.

The county planning commissioner has just read architect Duany's Suburban Nation. She has not ever read anything like it, and she states it significantly changed her way of thinking about town planning. She made some "out of the box" suggestions, including mixed use housing, to the planning board. Her ideas were well received.

The design of an interdisciplinary study on "Suburbia" invites students to venture into disciplines including history, sociology, memoir, public policy, psychology, geography, demography, urban planning, public health, women and family studies, technology, business and the arts.

For the "Suburbia" study I chose four texts, each with its own objective and angle on suburbia: one from history, one from architecture, one from sociology, one from journalism. Student papers and projects include the description of a "suburban artifact" (skills of anthropology), presentation of a cultural text (skills of cultural studies), and a final project that can be a history related to the student's own house, community, or family in the suburbs (skills of history).

Not one paper or project is the same since each student brings a unique set of life experiences and questions to the study. The town crewman presents an oral history of "Remembering Robert Moses and the Building of Jones Beach."

The relocated Texan writes a memoir of her husband's family as suburban pioneers who moved out to Long Island from Brooklyn. The town planner explores the art of wall coverings, having been inspired by the floral wallpaper in her suburban home built in the 1920s. Such is the wonder of interdisciplinary or integrated study.

Integration as Interdisciplinarity

Interdisciplinarity is a curricular design that cuts across subject-matter lines to focus on a comprehensive issue that brings together various segments of the curriculum into a meaningful association. Interdisciplinary study addresses a topic that may be too broad or complex to be dealt with adequately by a single discipline or profession. Interdisciplinary studies encourage the construction of a more comprehensive perspective, with an eye toward recognizing a holistic complex of interrelationships (Newell). Interdisciplinarity is not new, of course. Disciplines like geography or ecology have long been considered interdisciplinary, and most disciplines have imported aspects of other fields to clarify their own disciplinary perspectives. What is still new and exciting is the intentionality with which curriculum can promote "integrated" learning beyond a discipline as a primary goal – pursuing knowledge that integrates and synthesizes the perspectives of several disciplines into a construction that is greater than the sum of its distinctly disciplinary parts. Instructional approaches to promote interdisciplinary learning are rooted in active learning strategies and promote higher-order critical-thinking skills defined as analysis, synthesis, application and evaluation. These methods include collaborative and cooperative learning, discovery and problem-based learning, and methods of assessment that are multidimensional, including self-assessment.

Students' attitudes and behaviors toward their scholarly activity are very positive, since they choose topics that grow from their own interests and inquiries into the subject. They typically present their successful case studies with pride, enthusiasm and workplace application. As Klein observed:

"Interdisciplinary study provides a conscious effort on the part of students and faculty to integrate material into an intellectually coherent entity based on an understanding of disciplinary frameworks, tools, and methods and the contributions of each to this new whole."

In sum, interdisciplinary study prepares our students to take on complex situations they will face in their jobs and as citizens in their communities. Interdisciplinary study produce new knowledge as students synthesize "old knowledge" and are challenged to ask new questions. Interdisciplinarity fosters critique and understanding of society by viewing society, politics and knowledge as dynamic outcomes of complex, interacting, systemic forces (Newell). Such inquiry seems especially well-tailored for 21st century adult learners.

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Scholarship

"The Scholarship of Application …

… in which the scholar asks, 'How can knowledge be responsibly applied to consequential problems? How can it be helpful to individuals as well as institutions? Can social problems themselves define an agenda for scholarly investigation?'"

Ernest Boyer, 1990

The Van Arsdale Center: A Staging Ground for Action

By Rebecca Fraser,
Michael Merrill,
Dianne Ramdeholl,
Sharon Szymanski,
Richard Wells

Left to right: **Michael Merrill, Sharon Szymanski, Dianne Ramdeholl and Richard Wells (Rebecca Fraser not pictured)**

Martin Luther King often said that the arc of the moral universe was long but that it bends toward justice. Sadly, it seems these days that the arc of this nation's history is bending the other way, towards injustice. Since 1973, the social and material circumstances of American wage earners, who are the overwhelming majority of the country's population, have steadily deteriorated. Even before the present "Great Recession," evidence abounded of working individuals, families and communities hanging on for dear life, one bad break away from destitution, if not already there.

Tellingly, only 6.9 percent of the U.S. private sector is covered by collective bargaining agreements, down from 33 percent in 1950. Even if we include the more heavily unionized public sector, the proportion of the workforce covered by such arrangements is only 11.9 percent. One result of this erosion is the growing gap between the growth of real wages and productivity in the U.S. – or to put the matter more starkly, the rising incidence of economic exploitation. It's no coincidence that a less unionized society is a less equal one.

During most of the last half century, the wealth and incomes of the richest Americans have swelled to unprecedented heights while the real incomes of U.S. wage earners have been at best stagnant. It is harder for us than it was for our parents to meet

our own needs, much less contribute to the general welfare. For those of us that have jobs, the working day, the working week and the working year are longer, more strenuous, more pressure packed. As a nation we are working more and more but living less healthy, less secure, less satisfying lives.

At The Harry Van Arsdale, Jr., Center for Labor Studies of SUNY Empire State College, we aim to understand this unfortunate turn. With our students, most of who come to us from trade unions, and across our curriculum, we explore why it has happened, what its effects have been, and how it can be reversed. In doing so, the Van Arsdale Center makes manifest Boyer's admonition that campuses not be "isolated islands," but should instead become "staging grounds for action" for the broader public good.

The study of labor presents itself in two registers at the Van Arsdale Center: the transactional and the transformational. Transactional labor studies give our students the knowledge and skills they need to function effectively within the established system of unionized employment and labor-management relations in the United States. While shrinking relative to the non-union workforce, the unionized workforce remains a visible and vital part of the U.S. economy, especially in densely populated metropolitan areas and in public service. In order to provide its students with an introduction to the origins, functions and prospects of unionized employment system, the Van Arsdale Center offers courses in labor law, labor relations, collective bargaining and the development of the labor movement, among others.

But the political-economic circumstances described above have put the labor movement at a crossroads; therefore, as an academic program, labor studies can and must do more. Transformational labor studies, then, is primarily concerned with helping students evaluate the status and condition of the U.S. working class and its various fractions. The goal is to understand, on one hand, how

far the working class falls short of the ideal of full equality to which the U.S. national political community has been committed since its founding. On the other hand, faculty and students together explore how that equality can be best achieved and sustained. Students are encouraged, in other words, to actively imagine an economy, a politics and a culture that gives ordinary men and women like themselves the recognition and reward they deserve, and not least, to devise ways that they, as trade unionists and potential leaders of organized labor, can show the way in creating such an arrangement.

The Van Arsdale Center thus brings Boyer's notion of scholarship to life. Pedagogically, we ground our practices in a participatory framework that is consistent with the transformational mission of the center. One of the philosophical underpinnings of this framework is the explicit recognition that education isn't neutral or value free but embedded within a larger social context. Paulo Freire and other grassroots political educators have argued that a first step toward nurturing social change outside the classroom is to transform education inside the classroom. In such a landscape, students become authors of their own education instead of consumers of others' concepts. By challenging dominant narratives of knowledge production they can then rehearse counter narratives that have more equitable, humane and democratic endings – which is one of the primary goals of the center.

Of course, the challenge is taken up from different angles at the center. While extensive writing is required of students in all classes, it is the particular focus of "College Writing" and "Writing Labor's Story." In these courses, students are required to write reflectively on their daily experience as apprentices in the trade unions or as paraprofessionals in the United Federation of Teachers. Since the social value of the work students do as electricians, plumbers or paraprofessionals often goes unrecognized in the broader culture, many students feel that their working lives are unimportant or inconsequential. The writing assignments

require them to rethink that assumption and thereby rethink their identities as workers. During the past five years, we have taken the best of these assignments and produced four anthologies of student writing and art. This sort of "naming" of the ordinary is an extraordinary task that produces extraordinary texts. There is a very concrete transformational nature to these anthologies. Provided an opportunity to tell their stories on their own terms – stories of the work-a-day world they live in as electricians, carpenters, plumbers, and teachers – the students created anthologies that exist, in Boyer's words, as artifacts in "the universe of human discourse [which] enrich the quality of life for all of us."

Moreover, many of the courses in the Van Arsdale curriculum are designed with the specifically transformational mission of the center in mind. This means that course material, including the films, plays, field trips and forum-based explorations of current events that take students beyond traditional curricula, encourages our students to absorb critically the world around them, in historical, economic, political and cultural terms. "Women, the Economy and the Trades," for example, provides an important educational experience for our primarily male student-body. It contextualizes women's real but relative gains in the economy by examining occupational segregation and the gender-based wage gap, and provides the opportunity to investigate how women's increasing role in the economy, and in the trades, does not mean losses for men but is critical to families' well-being, and further, has the potential to strengthen the labor movement as a whole. One of our required associate level courses, "Class, Race and Gender," tries to convey a similar point regarding the possibilities of a broader and deeper form of class solidarity by critically examining historical and contemporary patterns of race (as well as gender) relations. In the "Political Economy of New York," students study the decline of the unique, urban-based form of social democracy that was post-World War II New York City, and

debate the policies and issues – from subsidized real-estate development, the commuter and stock-transfer tax, to solidarity between public and private sector unions – pertinent to its rejuvenation.

Additionally, we create opportunities for more direct public engagement by taking the process out of the classroom and into civil society. For example, students have attended solidarity demonstrations featuring national, state and local labor leaders, which were intended to win support for particular struggles. They have participated in a forum examining organized labor's stake in health-care reform, and in another that discussed work-place flexibility policies that might better support working families. Students in the upper level OSHA course have done safety and health surveys and work-site risk assessments that have uncovered hazards and injury patterns among apprentices and journeypersons in the electrical trade. In the last two election cycles, students in our "Labor and Politics" course have volunteered for political campaigns and learned the ins and outs of the electoral process.

In a similar vein, the center's office of outreach and special events has during the last three years run workshops for more than 3,000 union leaders and rank and filers on such topics as how the food-industry profits shape unhealthy consumption habits and about the strategies unions need to adopt if they are to again grow and regain their collective power. Most recently, the workshops examined how the structural weakness of the U.S. economy – namely, its "top-heavy," extremely unequal distribution of wealth – contributed to the financial crisis of 2008 and the ensuing economic collapse; and also how, with a strong push from the labor movement, a more cooperative economic model, one that rewards work and workers more than accumulated wealth, might be created.

Nor is that all. In the fall of 2010, the center also organized student-faculty forums on the "Politics of Ground Zero" in order to give our students the opportunity to discuss the political,

economic and cultural challenges of the post-9/11 world in a space free of media distortion. Taking its cue from the controversy over the so-called Ground Zero Mosque, the first of these sought a clearer picture of the initiative behind the Islamic Center and a more complex understanding of Islam as whole and Islam in America in particular. One month later, a second forum probed the contrast between the immediate social response to the attacks of 9/11, which generally brought people together, and the political response to the economic crisis of 2008, which has generally driven them apart.

As engaged academics serving a collective social moment, we bring our own scholarship to the task. One of us, for example, has explored the mechanisms by which alternatives to capitalism have been and can be constructed. The interest in this case is not only to explore the relatively free spaces within which alternatives to capitalist modes of social existence have been and can be nurtured, but also to map the staging areas from which efforts to resist or replace these modes have been and can be launched. In particular, it can be argued that trade unions represent just such a free alternative space and that the institutions of collective bargaining provide a practice of cooperation that far outstrips the reach of the alternatives proposed by the self-described cooperative movement.

The challenge for the future is both to adapt existing forms of indigenous working-class organization such as unions to the changing realities of sectors in which they have long been reasonably well established, like construction, manufacturing, transportation and government, and also to extend them to sectors where they have not been so well established, like the service industry. Furthermore, it also seems that the required adaptations and extensions can and will only occur on a social democratic basis, one which recognizes the limits and potentialities of an open and competitive political-economic system. Indeed, a good deal of work remains to be done to provide social democracy with better intellectual and political support.

Still another area of research focuses on economic policy. More specifically, one of the faculty at the center has compared the cost and effectiveness of the provision of governmental services when they are provided by government employees and when they are provided by private contractors and discovered that latter practice is in fact more expensive and less effective. Furthermore, this faculty member has conducted an empirical and theoretical investigation that has debunked neo-classical assumptions about which factors determine the level of wages and employment. The resulting book, Economics for the Rest of Us (The New Press, 2010), won a gold medal Independent Publisher Award, was a Booklist Top Ten Business Book of the year, and is currently being published in translation in Korea.

Another focus is on the historic relationship between adult education and democratic social change. For example, one of us has situated adult education in its broadest sense – learning to name the world – at the center of that struggle for human rights. This research has produced a book titled The Struggle for Democracy in Adult Education, (Jossey-Bass 2010), in which democratic decision-making, participatory practices, and shared governance are all unpacked using critical theory and critical race theory.

Still another of the center faculty has explored the intellectual history of disability and the care of the disabled, together with the institutional history of social service provisions, through a book-length biographical study of Louise Fraser, a pioneer advocate for, and provider of services to, the disabled in Minnesota. An article based on this research has been accepted for publication in the Journal of Music Therapy.

Moving forward, we need to be attentive to the dynamic nature of the mission itself. We must be aware that swings in the wider economy and political sentiment affect the spirit of our students and shape their own outlook on their education. These shifts force us to ask ourselves, over and over: What is at the heart

of our collective struggle, and indeed our work at the Center? How do we define and redefine, through conversations with adjuncts, students and our partners in the labor movement, the vision of society that we hope will ultimately prevail? How do we balance a realistic portrayal of the entrenched power working people face with narratives of hope that are anchored in very real pasts, and quite possible futures? How can we build and maintain stronger, wider bridges between the classroom and the everyday lives of our working-class students? How do we stay focused on the ends of that process, while also keeping the means by which we get there purposeful, flexible and transparent?

Through it all, the clear purpose at the center is to encourage our students to understand the world, imagine a better one for themselves and others, and set out to create it. With our eyes on the prize, as it were, we forge a path towards the humane and caring society we all dream about. If there is to be a social order, call it what we will, in which the claims of labor count equally with the claims of capital in the division of the social product, then we must first contribute a believable vision of it to the popular social imaginary, and second defend a politically viable version of this vision both at work and in the wider community. If only the few are prosperous, there is no prosperity; and if only the few have power, there is no democracy.

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The Scholarship of Ernest Boyer: A "Community" Perspective for Health Care Education

by Barry Eisenberg

I n March, 2010, President Obama signed the Affordable Care Act into law. This health care reform law is intended to bring health coverage to 31 million of the approximately 47 million citizens who do not have health insurance. It was also designed to help the nation gain control over health-care spending which, at $2.5 trillion in 2010, accounted for 17 percent of our Gross Domestic Product. Effectively absorbing millions of new citizens into the health-care system will pose a daunting challenge for those who work in and manage health-care organizations. Higher education has an enormous responsibility for preparing people to work in health care; over the coming years, these institutions will be tested as millions of new positions will be created in health care and large numbers of current workers seek professional development and continuing education.

Empire State College is broadening its role as a provider of education in health care. New and expanded undergraduate and graduate programs and certificates are in various stages of development. As such, the college is becoming better positioned to contribute to the discussion about the direction of health care. Its core traditions and values – which emphasize the importance of social responsibility, community involvement, and disciplinary integration – constitute an important message about shared responsibility in the delivery of a vital service, whether education or health care. Indeed, Ernest Boyer, the late chancellor of the State University of New York, viewed such services as fundamentally linked as he called upon the academic community, in Scholarship Reconsidered, to expand its definition of scholarship as a means of reflecting "more realistically the full range of academic and civic mandates." We may look to one of Boyer's functions of scholarship, "integration," as a guiding principle for the college's approach to health-care education. No single academic program or discipline on its own can address the expansive dimensionality of health care. By embracing a student-centered approach, rather

than an exclusively program-centered approach, the college has an opportunity to provide adult learners with a more comprehensive educational experience. Barriers between professions are broken down when, for example, nurses learn about business, managers learn about ethics, policy-makers learn about economics, clinicians learn about organizational governance, and all learn about the centrality of the patient's needs and interests. By learning about the challenges each group faces and the contributions each group makes, the college can help to construct a sense of community in the health-care system.

Boyer's "scholarship of application" would encourage us to believe that the college has the potential to serve as an example for the health-care industry by approaching health-care education from the perspective of "community." Although there are challenges in achieving and sustaining interdisciplinarity, striving for community in health care has very practical benefits. For example, on the level of the individual hospital, a community orientation creates a context for achieving organizational efficiencies that can yield reductions in lengths of patients' stay, enhancing the potential for more favorable clinical outcomes, and realizing economies of scale of resources.

Health care can be discussed from the standpoint of the broad, macro-landscape of policy to the intimate space of bedside care. Ultimately, these are all about the same thing – providing medical attention to those in need – and each point along the continuum is related to all the others. The more informed we are about the interconnectedness of those points, the more capable we become in carrying out our responsibilities. This, then, is the thrust of a "community" approach to health-care education: exposing students to multiple facets of the industry in recognition that the work performed by each ripples throughout the organization. The more they work in concert, the greater the benefit to patients. It can become dangerously easy to forget that the health-care system is not just a collection of numbers and policies and political stands, but is, first and

foremost, a place where human beings come when they are sick. I discovered this lesson as I progressed in my career in health care.

I began working in health care at Memorial Sloan-Kettering Cancer Center in New York City with responsibility for human resources planning. I was awed by the commitment of the clinical staff, most of whom, it seemed, felt a deep connection to the patients who came to the hospital for care. I vividly remember my first experience on the sixth floor of the hospital – Pediatrics. I confess to feeling apprehensive on my way to visit that floor, expecting to encounter a sea of gloom. But from the moment I stepped off the elevator, it was astonishingly clear how wrong I was. The children – toddlers to adolescents – seemed filled with hope and determination. Many of the children had no hair, a side effect of chemotherapy, but here, in this place, they wore their baldness as a badge of honor; it linked them to one another and enabled them to feel part of a community from which each could draw strength. These kids faced life battles that most of us, thankfully, don't know. But being in that environment, with an enormously dedicated staff, inspired a sense of personal determination that was about as uplifting as anything I have ever experienced.

Years later I moved to Union Hospital in New Jersey as vice president of human resources. Senior management rotated "administrative call," which meant that every fifth week I would be responsible for managing any emergency that arose, whether an unannounced visit by a regulatory agency, a legal issue, an emergency response to a state crisis, or an unresolved patient problem. One night, at about midnight, I received a call from the nursing supervisor who asked if I could speak to the wife of a patient in the Intensive Care Unit (ICU). The wife was distraught and insisted on speaking to an administrator. I elected to go to the hospital to speak with her in person. I checked on the husband's health status prior to greeting the nursing supervisor and the patient's wife. his patient was 91, had cardiac failure, a series of mini-strokes, and was connected to breathing

and feeding tubes as well as multiple IV lines. Despite the frailty of his condition, he did not satisfy the clinical criteria for the withdrawal of care, and he did not have an "advance directive," which would have specified his preferences regarding prolonged medical treatment. The wife was elderly, in her 80s, but looked even more feeble than her age suggested. Her eyes, though puffy and red, revealed a firm resolve. I extended my hand, which she clenched in her gnarled arthritic fingers. Maintaining her grasp of my hand, she looked up at me and pleaded, "Please tell them to let my husband die without all those tubes in him." Their final precious days together were marred by what she felt was an intrusion of machines and monitors, all with their sterile sheen, radiating beeps and statistics. She knew what we all knew, and what all that technology dispassionately confirmed, that her husband would not survive more than a few days. The removal or suspension of treatment is not an administrative decision; it is a medical and legal decision with profound ethical implications. In this case, removing treatment would have been an illegal act. Our nursing staff arranged to bring in one of our best social workers to provide the woman with professional counseling and support. For about an hour, until the social worker arrived, I sat with her as she told me all about her husband.

As I was leaving, I walked through the emergency department to say hello to the night staff. A young woman was seated in waiting area, accompanied by two small children. She had a raspy cough which pierced the stillness of the night. A nurse informed me that the patient had pneumonia, adding that the only reason the woman was in the emergency department was that she didn't have insurance. She couldn't afford to go to a physician at an earlier stage of her illness when it was far less severe, more easily treatable, held a smaller potential for complications, and was exceedingly less costly to address. Further, if she had gone to a physician a few weeks earlier, her children would not have been subjected to the disruption to their lives nor the exposure to serious illness,

and her employer would not have had to endure her extended absence from work. The young woman's emergency room visit cost the hospital approximately $700, an expense that would be passed along to other patients or to a taxpayer-financed state charity care fund. The cost of servicing this movement of charges would add another $300 to the total.

The elderly man in the ICU died three days later. I learned from our social worker that he did, after all, have an advance directive, but somehow his wife had forgotten about it. If she had remembered, she might have been spared some of the anguish she experienced during those last few days of his life. She might have been able to feel that he died in a dignified manner and that the health-care system, and all the people in the field with whom she had contact, were allies who helped her husband transition from life to death with compassion and grace.

Illness, injury, disease … few individuals are spared these and certainly no family is. Children get cancer, the uninsured get sick, and the elderly contend with end-of-life issues for which little in their lives prepare them. The population is aging, and, as people age they experience more illness, more fragility, and, like the wife of the ICU patient, more forgetfulness. This is the single greatest challenge the health-care system faces, and medical professionals are working alongside educators, policymakers, ethicists, scientists, administrators, epidemiologists, actuaries, researchers, economists and others to identify the scope and nature of this challenge and how to address it in the years ahead.

After a few years, I was promoted to vice president of hospital administration. This occurred during a period of mounting challenge in health care as the flow of revenue from cost-based reimbursement was becoming restricted. Managed care and insurance companies, along with government programs like Medicare, were imposing payment limits by diagnosis, forcing hospitals to find ways to become more operationally efficient. Our hospital undertook

assessments of organizational efficiency gaps and of the mix of service offerings, focusing on how these could be strengthened; we also evaluated whether opportunities to merge should be entertained to achieve economies of scale.

We came to recognize that our hospital, like the vast majority of hospitals in the United States, functioned too much like a collection of small businesses rather than a coherent, highly integrated and coordinated organization. Such an organizational dynamic is not surprising in light of the tendency for boundaries to proliferate among functions, professions, programs and services in an organization when it lacks a compelling, overriding reason for those divisions and distinctions to be blurred. It's not that patients didn't get what they needed; it's that they might not have gotten it in as coordinated a manner as possible. Strong mechanisms were not in place to ensure that radiology, nursing, dietary, respiratory, rehabilitation and other clinical services were consistently delivered to patients in a synchronized fashion. For example, a transporter goes to a patient room to escort the patient for a CT scan only to discover the patient would be returning in 10 minutes from an appointment with the physical therapy department. The transporter waits, and when the patient returns she says she has to use the restroom. The total wait for the transporter is now 20 minutes. Then there's the effect on others, like the nurse who is called away from another patient to assist in readying this patient to leave the floor. What is the price of this seemingly small coordination mishap … in money, in patient comfort, in staff frustration? What is the cumulative impact when this is multiplied across the thousands of similar activities that occur each year?

One major program was undertaken which involved the development of "clinical paths" for particular diagnoses; these specified all the tests, treatments, and other actions associated with each diagnosis as well as the order in which they were to occur and the time each was to

be initiated. Some reorganization was required, particularly in nursing, so that centralized scheduling of certain clinical functions could take place and management accountability was possible. As centralized scheduling was implemented, it freed each department from having to perform this relatively tedious process and, instead, commit more resources to clinical and quality improvement functions. This expanded the table of organization in nursing which allowed for more career tracks. But the most vital benefit was to patients. They received care in a more orderly, predictable way. The average length of stay by patients was reduced by 12 percent, yielding a financial benefit of over $1 million, while patients' satisfaction with care and service increased. Staffing adjustments in several departments were necessary in order to adhere to this more integrated model of service delivery. This project could not have been accomplished successfully without the collaborative efforts of physicians, nurses and other clinicians, and administrators and support staff from throughout the hospital.

There was a principle at play here, one I understood conceptually from my studies of systems theory, but in some deeper, more fundamental way, I began to see and appreciate that organizational change does not come easy. The barriers to change are formidable, built on habit and reinforced by any combination of very human drives: apprehension, inertia, anxiety, discomfort. If we were to make genuine progress, the staff would need to be motivated by some unifying principle that would be more powerful than those forces of resistance. Boyer described the school as a "community," as a gathering of activity. So, too, when the people who work in a health-care organization shift their perspective to "community," shared responsibility becomes feasible and shared sacrifice tolerable. The impetus for the shift lies in the essence of the role of that person who is served by the organization, whether it's the student in a school or the patient in a hospital. But, as I learned, this can occur only in a climate of respect, when each person comes

to genuinely value the work of others, to see that the puzzle remains incomplete without the contribution of all, whereas one may have previously been satisfied in believing his or her piece was the most vital.

Business as usual for our hospital, like the thousands across the country, was forced to change because of profoundly altered environmental conditions. The self-examination brought about by these changes was an opportunity for rededication to purpose. Placing the patient's experience at the center of decisions regarding organizational structures and processes provided an excellent point of departure. Patients cycle through many departments and interact with many employees in a hospital. Such interactions do not occur in a vacuum; each conditions the patient's expectations and responses for the next. Colleagues in a health-care organization, no matter how different their functions or specialties, are bound to one another in this way, linked by the larger purpose of serving those who come through our doors in the hope of bettering their lives. Boyer spoke to this notion about researchers reaching out because they "feel the need to move beyond traditional boundaries, communicate with colleagues in other fields, and discover patterns that connect." The greater good demands no less.

Empire State College is building a wide-ranging spectrum of courses and programs in health care that span undergraduate and graduate curricula and address the multi-faceted nature of health-care education by including programs in clinical and administrative areas. Our students would benefit to the extent we help them appreciate the value and the vital contribution of the various disciplines and how they fit together. Their education in health care at Empire State College may be viewed as a starting point, a foundational and formative experience as they enter or seek to develop their careers. Had I, as an administrator, not looked into the eyes of patients and their loved ones, I don't know that I could have genuinely appreciated the work of clinicians, especially nurses. Had clinicians

not worked side-by-side with managers, they may not have become sensitive to the challenges associated with organizing a budget or determining how to allocate resources. A college has an opportunity to establish and cultivate the perspective that a health-care institution is a community, and that the community is defined principally by, and organized around, the interests of those it serves. That is why the community came into existence in the first place.

Boyer's principle of integration fits well with Empire State College's tradition of liberal arts – that immersing students in a broad-based educational experience prepares them well for citizenship in a community. When the various disciplines coalesce into a community, there is a greater chance of neutralizing the power of special interests that were able to exert much influence on the establishment of parameters for the debate leading to the reform legislation. As the next generation of the health care debate takes shape, perhaps our students will add their voices to help us to intelligently imagine a broader range and more benevolent set of possibilities for serving others. Indeed, this would be a fitting tribute to Boyer's vision that all citizens, including and especially the underserved, should be entitled to access, free of restrictions and indignities, to opportunities that would enrich their lives.

Barry Eisenberg, who earned his Ph.D. at Temple University, is an assistant professor and mentor in the School for Graduate Studies, MBA program. His background includes extensive experience in health-care management and consulting. His research and teaching interests focus on the impact of reform on health-care organizations and the delivery of health-care services, strategic planning and human resources management in health care, and ethical and social issues associated with serving consumers.

Authentic Scholarship

By Margaret Clark-Plaskie and Mary Klinger

Margaret Clark-Plaskie, left, and Mary Klinger

As mentors at Empire State College, over the years we have engaged in collaborations with colleagues and students that illustrate Boyer's conceptualization of four different, yet potentially overlapping types of scholarship. Our scholarship is multifaceted, embodying various aspects and combinations of the scholarship of discovery, integration, application and teaching. It is interdependent, as we learn in partnership with our students and each other. We draw upon expertise in our particular disciplines and learning from real world experiences, integrate knowledge, apply theories and research findings, make and foster academic and personal discoveries, effectively communicate what is learned, and so on (not necessarily in that order). In describing the different types and functions of scholarship and the dynamic interplay thereof, Boyer explained that, "it is through 'connectedness' that research ultimately is made authentic." We have been fortunate at our college to have a variety of opportunities to connect with others, to connect information from multiple disciplines, to connect theory with practice, and to connect academics with real life experiences. In this holistic process, our scholarship becomes more understandable, meaningful and authentic.

A prime example of this type of authentic scholarship began when we volunteered to co-facilitate a workshop at the Women's Studies Residency at the college in 2001. This might be viewed as a form of "service" to the college, both in the traditional sense of the professoriate, as well as in Boyer's conception of the scholarship of application; yet it was also much more than that. As it does annually, this communal event brought together individuals from around the college (undergraduate students, graduate students, faculty, staff and administrators) with shared interests in women's studies. Many students and mentors were working together in studies that were linked to the residency program and there were various sessions and workshops open to all attendees over a two-day period. Twenty five females, mainly students, but also

a few mentors, and the young adult daughter of one of the students, participated in our workshop, "Women and Identity: Redefining Ourselves." We began by asking this diverse group of females to think about their teen years and the dreams they had at that time for their future. These dreams were written down and temporarily put aside while we turned our attention to some facts and theories about family, work and changing expectations for women in our society.

We told participants that the proportion of married couple families in which both spouses work in the labor force had almost doubled between 1960 and 1990 (28 percent to 54 percent). Working hours have increased, in general, as leisure time has decreased. Few workplaces offer flextime or family support, while the careers desired by educated men and women require people who are totally committed (Kanter).

So what happens? Who is on top and continues to be on top in the workplace? "Managers that rise to gain influence over people's lives are those who place the least priority on family and therefore are least likely to understand the realities of working parents' lives." (Kanter).

We explained that if we look at women reaching adulthood in the 1960s and 1970s, we were told (often by our fathers) that not only could we do it all, we should do it all. We could have a career and family – "if we just worked hard enough – if we were just good enough" (McKenna). By the time we reached adulthood, the relatively narrow world of our mothers was opened up. We could have what males had – education, career and so on. Having a family was becoming an unspoken expectation for women, rather than a goal, as women became more assimilated into the traditionally masculine work world. Further, we as women came to value ourselves by our contributions and promotions – the way other people see us – in other words, our roles.

To facilitate self-reflection, workshop participants were asked to think about the

various "hats they wear" or roles they play in their everyday lives. They rank ordered them according to importance and the amount of time spent in each role during an average week. It quickly became apparent that there were discrepancies between perceived importance of roles and the amount of time spent in them. The possible connection between such discontinuity and individuals' feelings of stress and dissatisfaction with their lives was discussed; self-perception theories and research we presented seemed to resonate with many of the women's own experiences. In this way, connections were made back and forth between theory and practice and between academic research and real world experiences.

Academic and personal conclusions concurred: Reality has fallen short of societal ideals for many women. In trying to do it all (i.e. be "superwoman"), women feel like we are not doing enough in any one role; they feel guilty and begin to doubt ourselves. In trying to be everything for everyone else, women may even lose themselves. They may not know why, but they feel unhappy, empty inside; something is missing. Yet, how dare they feel this way when there are so many opportunities and choices? Could this be another generation's version of what Betty Friedan called "the problem with no name" nearly 50 years ago in The Feminine Mystique?

Turning to psychology for a potential framework, we shared the developmental theories of Carl Jung and Daniel Levinson. Briefly, in Jung's theory, if an individual has been neglecting part of her "Self," she might suffer mentally, physically or emotionally. By midlife those aspects of her "Self" demand attention. The individual may appear to be experiencing a sudden "crisis," but in Jung's view, it could be a temporary shift in energy from one extreme to another during the process of individuation, moving towards balance. In this way, a crisis could be an opportunity for development and growth. A similar view was held by Levinson, who proposed that adults alternate between periods of stability and periods of transition.

During transitions, we question the choices we have made and may recommit to roles and goals or take different paths. For instance, during young adulthood, we form "Dreams" about our future roles and then re-evaluate them in middle adulthood. In Levinson's research, men had one Dream (work), while women reported having two separate Dreams (family and work). Traditionally, men take care of their families by working, but women's paid work is in competition with her family role. Women feel compelled to focus on one of these roles more than the other, and sometimes to the exclusion of the other. Some women shift their relative attention during midlife, from family to work or from work to family, but there may be significant negative consequences from making such tradeoffs. While women feel pressure to choose one role over another, female self-esteem still depends on fulfilling all of her roles, all of the time. Fragmentation is not healthy or realistic, but then again, neither is being "superwoman." In her book, When Work Doesn't Work Anymore, McKenna explained that, "The transformation we seek for lives of meaning and balance is, as Gloria Steinem pointed out, a transformation of 'and' not 'either/or." That is, family and work, for women and men – connected within a supportive structure that facilitates integration of roles and identities individually and collectively.

Women's personal experiences with role expectations, conflicts, choices and tradeoffs were discussed during the remainder of the workshop. In modeling the connections between theory and practice, we shared their different paths as women, having grown up a decade or so apart, in specific locations, with different ethnic and cultural backgrounds. Possible effects of generation, time in history, race, ethnicity, culture, socioeconomic status and religion were discussed by the group. The participants began to appreciate the diversity among women, as well as the common themes shared by many.

In concluding the workshop, participants reviewed their own youthful dreams, which they had written on cards earlier in the workshop.

They were asked to consider if they had fulfilled their dreams, neglected them, or changed them along the way, and to write down their reflections. Each woman took her card away with her, perhaps to serve as a reminder of accomplished goals, forgotten dreams, and the need to question her current direction.

The workshop participants and mentors may have each continued with their own personal discoveries beyond the workshop; some also engaged in formal academic studies connected to the residency. We continued our conversations together and wrote an article about this workshop in the college's publication, All About Mentoring, Issue 24 (Fall, 2002). In our scholarship of teaching, we have used this article as a resource for learners in psychology, human development, organizational behavior, and management studies related to women, helping them to enhance self-awareness and to understand the diverse perspectives and realities of others.

Thus, in our roles as mentors, we have engaged in various and overlapping types of scholarship as epitomized by our work at the women's studies residency workshop. But perhaps most importantly, we have collaborated in the scholarship of application, serving to share knowledge we discovered within our areas of expertise, integrating information from different disciplines, and bridging theory, research and practice. With ideas situated in time and place and personal experiences framed by theories, our scholarship has become more accessible, meaningful and authentic, as per Boyer. In parallel, each role or identity in women's lives is significant, but with a holistic model that recognizes and supports the connectedness and interdependence among women's roles, and men's roles, family-work balance and self-fulfillment for women will become more attainable, meaningful and authentic.

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Mary Klinger is a mentor and unit coordinator at the Corning/Elmira Unit of the college, working in areas of management, education and diversity. She has a B.A. in History and an M.S.Ed. from Elmira College, as well as a Ph.D. from the Union Institute and University in Organizational Behavior with specializations in adult learning, diversity and disability. She has been associated with the college since 1990.

Scholarship

"The Scholarship of Teaching …

… teaching, at its best, means not only transmitting knowledge, but transforming and extending it … inspired teaching keeps the flame of scholarship alive."

Ernest Boyer, 1990

Drawing from Theory to Practice

By Raúl Manzano

Theory and practice are two notions that at times contradict each other but should not be separated from each other; they parallel each other, they depend upon each other, they are the questions and answers that help clarify the processes that lead to results. When I wrote my book baby Steps to Drawing, I did it with the intention that anyone can learn how to draw. By introducing students to the fundamental concepts and techniques of drawing, in a simple language, the beginning student can feel confident and motivated to create a visual representation.

I think of drawing like working out at the gym, it is the repetition of the exercises that develop strength and technique, build muscles and form. But to stay in shape, one must follow a program regularly and practice it thoroughly until one acquires the desired results. Drawing is the same. One builds from foundation and practice to discipline and perfection. Learning to draw is about seeing and interpreting what is in front of you; it is about proportions and their relationships to other forms as well as how to use values, tones, and lines to create interesting compositions (fig. 1-see following pages for artwork). The process requires your input – your hand to make marks; your eyes to determine what you want to draw; and your thinking to make decisions. This coordinated process of theory and practice or trial and error builds up confidence and knowledge.

Drawing is not strange to people. In fact, drawing is the most basic artistic practice people have experienced in their life in one way or another – from learning how to hold a pencil when we were children to the first calligraphic characters when we learned how to write. Indeed, drawing was one of the first methods of communication humans utilized to interpret the world around them. Today, we continue to do so with many different mediums and technologies.

To the beginner, the art of drawing can carry a stigma inherited by the legacy of the great masters of the Renaissance to contemporary practitioners, all of whom have contributed to the theoretical development and practical application of this visual art discipline, whether the form is a one-point perspective or a three-dimensional rendering (figs. 2 and 3). As an artist and mentor, my research in finding logical steps to develop the technical skills and, eventually, mastery of the subject leads me to focus on the basic geometric forms as a starting point to build upon more complex detail, or conceptual representations, augmented with the notion of connection (synchronization) between the hand and the brain as an integral role in the process of creation.

I focus the study group I teach in stages, beginning with basic forms and still life and ending with the live model. This method builds foundation skills, which are essential to the development and exploration of more complex structures. Basic shading techniques and line application are stressed (figs. 4 and 5) so the student can gain confidence until these becomes second nature. This progressive and quantitative approach helps build the student's skills, visual literacy, and perception of the relationship between objects in a given space to depict a three-dimensional object onto a two-dimensional surface (fig. 6). However, the mastery of drawing does not happen immediately; it is a process that requires many hours of study and the practice of self-discipline. Within the term, I lecture, demonstrate, and work with each student individually and assign weekly assignments, which they document in their sketch journal. I review them individually, providing critique and feedback, a critical component of the learning process.

In addition to the in-class practice, I assign the students a museum exhibition related to drawing that I select from the vast resources of venues in New York City. The students write an essay highlighting aspects of what they have learned in the classroom and what they have seen in the exhibition. This project serves two purposes: first, to bridge the student's own acquired knowledge and, second, to discover how artists employ the very same techniques they have been developing during the study. This connection helps the students enrich their visual literacy and associate what they have learned. As a final project, the students present a creative drawing that they have developed and created independently, demonstrating how they apply the principles and theory they've learned. The drawings are displayed in class so that everyone has the opportunity to make a self-evaluation of their own progress.

My mentoring work, professional development and research scholarship are equally enriched by each student's way of learning. I carefully observe each student's studio practice so I can develop techniques and methods of teaching that impart my knowledge and my ongoing transformation as a scholar. These reflections on the application and theory in teaching art and art history reflect my serious commitment to scholarship and the professorial values of the fine arts and the humanities, but, more importantly, my service to our students in their creative and intellectual formation.

(see following pages for artwork)

Raúl Manzano is a practicing artist, author and mentor in the visual arts at the Metropolitan Center. His artistic journey began at home when his mother, an artist, gave him his first art lessons followed by his admission to art school and private instruction in his native city of Cali, Colombia. He has exhibited his works nationally and abroad and served as president of the West Side Arts Coalition in New York City. He earned a B.F.A. from School of Visual Arts, an M.A. from Empire State College and is currently pursuing his Ph.D. at Union Institute and University.

Pencil on paper drawings
by Raúl Manzano

Fig. 1: Spectators in the Rain, Barcelona, Spain

Fig. 2: Study for figure

Fig. 3: Torso

Fig. 4: Cafe (hatching and crosshaching)

Fig. 5: Baseball (Chiaroscuro)

When drawing, think like an Olympian athlete.
To be a champion, you have to practice
and aim to do it as best as you can.
Draw every day.

Raúl Manzano

Fig. 6: Tea

Fig. 7: Yes!

Boyer and Beyond: Expanding Nursing Scholarship

By Mara Kaufmann and Mary Guadrón

Mara Kaufmann, left, and Mary Guadrón

I n summer of 2007, nurses joined the company of scholars at Empire State College and the development of a baccalaureate program began. This college, with its vision, core values and ability to provide asynchronous learning opportunities, is the perfect choice for nurses who are seeking further education and scholarship in their chosen profession.

We are both nurse educators working as members of the faculty in the nursing program, where we are evolving our philosophical approaches to nursing and nursing scholarship and sharing our student's as well.

Holistic Nursing and Teaching

Dr. Kaufmann finds Dr. Boyer's expansion of scholarship enlivening, creating a more dynamic approach to scholarly pursuits that opens the door to new forms of scholarship, especially in this age of technology. During the past three years, course development and the challenge of creating engaging personal learning environments that will facilitate and join with the students' existing knowledge and goals has been her primary scholarship focus, which also incorporates the scholarship of discovering, integrating, applying and teaching. Holistic nursing care is person-relationship centered and healing oriented vs. disease and cure oriented. As broadly defined by the American Holistic Nurses Association and the American Nurses Association, holistic nursing emphasizes practices of self care, intentionality, presence, mindfulness and the therapeutic use of self; the holistic nurse is an instrument of healing and a facilitator in the healing process, and becomes therapeutic partners with individuals, families, communities and populations.

Until discovering holistic nursing, Dr. Kaufmann had no thoughts of ever becoming a nurse, as her philosophy of working with and in partnership with people, was not in keeping with the curative-disease model. She also knew, as an educator in facilitating learning, the mentor/teacher - student relationship has to be one of partnering, working with each other. Phenomenologic pedagogy describes the relationship of teacher and student as "partners and co-participants." Themes found in phenomenologic pedagogy that apply to working with the whole person are "storied dialogue, common experiences, meaning/significance, community practices, understanding, and community reflexive scholarship" (Ironside).

Nursing students entering our program already have a more than full life. The mentoring approach of listening and providing presence to them and their goals, affirming their strengths and coaching them to overcome their challenges in learning, is a welcome relief to the anxiety of returning to school, and the stress and fears some associate with learning online. Most students find that when they are confident with the technology and succeeding in their course work, they are learning and engaged in a way never before experienced. For the student with other degrees and a firm grasp of self-directed learning and scholarship, their expectations and experience can be one of not only fulfilling but exceeding their learning goals.

In an attempt to meet the expectations of our students and our accrediting bodies, and to move up Bloom's Revised Taxonomy (Churches), the readings and written activities in Dr. Kaufmann's courses are designed to incorporate the student's existing knowledge and experience with new concepts and theory, integrating, synthesizing and creatively applying them to current or past work environments. In keeping with theories on "experiential and authentic learning," having students create personal learning environments and use e-journals, blogs, wikis and an e-portfolio increases and integrates their knowledge and

learning. The use of thoughtful journaling provides a space for reflection on their learning and its integration into new knowledge. Found in the student journaling is evidence of critical thinking and reasoning and, at times, the occurrence of deep and transformational learning. Journaling aids in closing the gap between theory and practice and in developing a foundation for "reflective practice and lifelong learning" to be carried throughout one's professional life.

The nursing student engages with the faculty and with peers in collaborative and shared learning. The following passage, written by a student who was in our first nursing cohort, describes her earlier expectations and culminating experience in the collaborative learning process.

I knew that the program would give me the opportunity to learn from others in ways I never imagined, capturing and sharing their multifaceted experiences and reliving critical moments in their practice. It is something I cannot learn from books or through self-study. "The qualitative distinctions that expert clinicians make on the basis of their experience with many similar and dissimilar clinical situations cannot be transmitted by precise written descriptions" (Benner). Expert nurses always know more than what they can tell. It is in the discussion, dialogues, and shared experiences that "expert knowledge" is unraveled (Nolasco).

In co-developing independent studies and learning contracts with students in the online environment, the question of where to house shared work beyond e-mailing can be challenging. A couple of answers were to create a blog on the college's Academic Commons for nursing student's Independent Studies, and use Google Docs for evaluation and feedback. Facilitating the student's learning goals and seeing them realized is the mentor's greatest reward. One need only read the "testimonial" below from the previously quoted student.

This (independent study) course, Advanced Nursing Management, became a realization of what is possible. While I used to dream about what it would be like to design my own course and learning module, I never thought it could actually come true. The course challenged my creativity, leadership and determination to accomplish what I set out to do. It gave me the courage to evaluate and challenge my own company's processes and decisions, catapulting myself inside the executive boardroom in the process. I found new ways of empowerment that I would not have otherwise known without this course (Nolasco).

Inspired Knowing

Dr. Guadrón asserts that the scholarships of discovery, integration, application and teaching, broadly defined by Boyer, then extended further, are dynamically interwoven in nursing education at Empire State College. Boyer emphasized that knowledge is not necessarily developed in a linear manner, and while "theory surely leads to practice … practice also leads to theory." This is particularly true in nursing. Exclusively top-down, linear approaches to knowledge development are not congruent with the discipline of nursing where practitioners also generate nursing conceptualizations and theories in practice (Reed & Lawrence). Inspired knowing, described by Reed, emerges from a new philosophical stance called neomodernism, where science and practice are more deliberately brought together. Inspired knowing is a mutual process of caring and knowing where caregiving, a nursing process, is a path to knowing the patient and learning about other nursing processes of well-being and healing. Inspired knowing extends the scholarship of discovery. Nursing depends on all ways of knowing used in an integrated manner for holistic nursing practice, including those patterns of knowing that are yet to be revealed.

"When defined as scholarship, … teaching both educates and entices future scholars … teaching, at its best, means not only transmitting knowledge, but transforming and extending it

as well," wrote Boyer. His reconceptualization of the scholarship of teaching may be extended even further since the practice of teaching can also be knowledge producing, similar to the practice of nursing. Teachers are knowledge producers who learn much about teaching and who help learners participate more fully in their learning. Through the scholarship of teaching, Dr. Guadrón partners with students in scholarship, mentoring them to be critical, reflective, inspired nurse scholars. She facilitates the development of a strong professional nursing identity and lifelong learning skills.

Roy's concept of cosmic unity stresses that people and the earth have common patterns and integral relationships. This concept encompasses true engagement and exchange of knowledge between nursing and other professions in order to transform society (Perry and Gregory). In two courses she developed, Community Health Nursing and Nursing Informatics, Dr. Guadrón includes opportunities for learners to communicate with colleagues in other fields in the real world and discover patterns that connect, as Boyer urged, thus promoting and extending the scholarship of integration. Both courses include collaborative learning experiences that enhance progressive learning and enable learners to integrate their learning into their nursing practice, promoting and extending the scholarship of application.

Community Health Nursing includes a community assessment and a service-learning project that focuses on well-being, health promotion and disease prevention in communities. Service learning assists with socialization into advanced nursing roles and also enhances the learner's role in the community as a citizen with social-justice responsibilities. The community benefits when civic engagement outcomes are included in our programs. Reflection is a critical part of service learning, which, as a learning tool, maximizes learners' highly individualized scholarly learning experiences, integrating and connecting them to course objectives, concepts and theories. Reflection focusing on ways of knowing

provides an engaging learning experience that emerges from practice and from student inquiry. Nursing students are clinical nurse scholars who exchange theoretical ideas in a collaborative learning environment and have access to many academic resources.

My nursing knowledge has grown significantly in terms of emancipatory knowing – the human capacity to invoke change. In particular, I learned to become a catalyst for changing my profession into having a more aesthetic and sociopolitical base (Nolasco).

Nursing Informatics [NI] is described by the American Nurses Association as "a specialty that integrates nursing science, computer science, and information science to manage and communicate data, information, knowledge and wisdom in nursing practice." NI considers how nurses create knowledge and use that knowledge in their practice. The Nursing Informatics course provides foundational knowledge in computer literacy, information literacy, clinical information management and knowledge-based nursing practice using all ways of knowing that support nursing processes. The Nursing Informatics course provides an opportunity for students to join and participate in a professional nursing informatics organization and network with nursing informatics pioneers and professionals in the field through an e-list. Learners analyze clinical nursing scenarios from their own experiences using course concepts and theories and integrate their new knowledge into their nursing practice. According to one clinical scholar student from the Nursing Informatics course,

Evidence-based nursing practice is about much more than just utilizing empirical knowledge, but also utilizes all the ways of knowing… To the teenage mother it meant the world to her that she could finally open up about the way she was feeling and realize that she wasn't alone, that her feelings were actual symptoms of an illness that could effectively be treated (Ferrari).

As seen in the student statements in appearing throughout this essay, nursing scholarship is an

integral part of our curriculum and required throughout, beginning with Educational Planning: Transition to Baccalaureate Nursing, taken in the student's first term. In the nursing student's scholarly writing, evidence of an impact of their learning, application and scholarship on their lives and work settings is expressed.

I feel as though I have gone from novice to proficient in three years of my career. I believe that I owe a great deal of my success to the Empire State College's program, which made this expedited transformation possible. The program served as an enabling tool in making my dreams a reality (Nolasco).

Mara Kaufmann, associate professor, holds a Ph.D. in Nursing and a Master of Science in Nursing from the University of Colorado. Her clinical focus and specialties throughout her nursing career are in holistic nursing practice, case management, psychiatric mental health nursing, palliative care working with individuals, families and communities. Dr. Kaufmann's scholarship focuses on holistic nursing, healing, deep and transformational learning, nursing education and transformational leadership.

Mary Guadrón, assistant professor, holds a Ph.D. in Nursing from Binghamton University, a Master of Science in Nursing from Sage Graduate School, a Master of Science in Information Science from the University at Albany, and a Certificate in Health Care Informatics from Excelsior College. Her clinical focus and specialties throughout her career have been in the areas of family health, long-term care across the lifespan, community health nursing, nursing informatics, and nursing education. Dr. Guadrón's scholarship focuses on nursing knowledge development, promoting and enhancing well-being, rural nursing, nursing education and nursing informatics.

Asking Four Questions: Mentoring as Uneasy Scholarliness

By Lee Herman and Alan Mandell

Lee Herman, left, and Alan Mandell

PHOTO: MEL ROSENTHAL

"But every memory is turned over and over again, every word … written in the heart of the hope that memory will fulfill itself … "

Marilynne Robinson, *Housekeeping* (1980)

Over the last 30 years, we've been trying to understand mentoring and why it matters. We've been talking and writing and presenting our ideas and experiences – and, by and large, we've done this together. And the fact this is an ongoing collaboration has not been incidental to what we've tried to understand. Just as we're writing this piece now, word by word together, mentoring is collaboration. It is the kind of collaborative conversation that is, in itself, learning. This is called "dialogue." In hundreds of late night and early morning Locke - NYC phone calls, in walks around East Side galleries and along unpaved roads near Damascus Pennsylvania, and in unhealthy but comfortable postures on the furniture of our respective homes and offices, we've again and again discovered that learning is dialogical, whether we are learning about mentoring or practicing it.

Dialogue is always about asking questions. That is, one is inquiring after what one does not yet know. We've discovered the same four questions animate everything we do:

What do you intend to learn? Why? What have you learned already? How do you know? In one way or another, we ask them of our students when we are doing our everyday mentoring work. These questions are also, we believe, sufficient to generate a curriculum, a profession, an entire college. And, we ask these questions of ourselves when we are doing scholarship.

An Individual Study

At its heart, these questions are present in every good discussion we have with our students. If they are beginning a study, we want to learn from them what it is they want to learn and how it fits with their interests and purposes. We want to know what background they might already bring to this new study, and the questions they have on their minds. In asking for these responses from each student, we also are probing the extent and solidity of their understanding. This is a process that occurs again and again as the study continues. For example, in conversing about a book a student has read or an essay s/he has written, we want to know what the student has learned, we want to assess it, and we want to know what questions the student has formed and what they mean to him or her.

These interactions can become so everyday for mentors that we might not appreciate how intellectually rich they can be. In themselves, these conversations not only further the student's learning but also our own. The student is engaged in reflective practice, while at the same time we are often learning more about the subject itself. And always, we are learning who our students really are. These conversations are learning, for both the student and the mentor. They occur anytime, anywhere, and by any means: sometimes in person, sometimes on the phone, and ever more commonly on-line.

It's notable that the active presence of the questions – what's been and to be learned, why and how we do know – makes a fundamental similarity between professorial scholarship and everyday mentoring practice. In both activities, the questions define the search for and acquisition of knowledge, and they evaluate its significance. In professorial scholarship, one hopes the knowledge learned will be new to the world. The special contribution of mentoring-as-scholarship is that an intrinsically significant connection is created between the learning, new or not, and the learner. Whether engaged with the rudiments of accounting, competence in

managerial statistics, or trying to make sense of the death of a loved one, mentoring is applied humanism.

A Curriculum

When we are helping a student design an entire degree program, we are taking seriously the life history and aspirations of that individual person. What do you want to learn? Why do you want to learn these things? What have you already learned? To be sure, we don't very often baldly ask in educational planning the how-do-you-know question. But, we are attending to that very question when we require official transcripts to verify the validity of previous classroom study, and when we help students learn to describe and discuss with an evaluator their prior experiential learning.

Unlike professorial scholarship, the "new knowledge" expressed in the degree programs students and mentors design, need not be new to the world. Rather, the discoveries made are those of individual students finding and making their way. Of course, there is the joy and achievement of someone coming to understand their own education. Sometimes we can fail to appreciate how extraordinarily different this is from the customary experience of "schooling." The joy and significance of this kind of self-discovery far exceed whether or not the curriculum the student designs is unique or truly idiosyncratic. Thus, even when the result of responding to these questions is that the student designs a by-and-large generic curriculum, this is still a discovery process, for both mentor and student.

For example, students who want a degree in emergency management or in English literature because they want to make a career in the one profession or the other, need to learn what is typically expected of people who enter those professions. This is a research project. Through this research, students will discover what learning needs to be done and what appropriate learning they may have already have. They will also likely evaluate their interests in a

new light. In other words, as students become more informed about the careers and curricula they are contemplating and setting upon, they naturally assess if these are the lives, professional and academic, they really want to lead. Thus, in this research the "How do you know?" question takes the form of "Do I really want to do this?" Given the fact that our students are usually adults, what could be a more intellectually and personally serious form of critical reflection than asking this question of one's future? What could be a more profound learning for us, the mentors, than to bear witness to the countless and unexpected ways in which people we've not previously known try to make meaning of all they have learned, want to learn, and hope to become? The real generic answer to the question, "What do you want to learn?" is "Know thyself," for every student and repeatedly for mentors as well.

A Profession

So far, we've shown that our four questions are sufficient to generate any learning project or any curriculum for any student, no matter how unusual or common. But can we also imagine that they define a profession? The name of this profession is certain enough. It's called mentoring. Less certain is its content. The word "mentoring" appears often enough in and out of academia. It seems to refer to a sort of kindly advising that a person somewhat senior offers to a person somewhat junior. Obviously, that's not what we mean. Ordinarily in academia, professorial expertise is defined by one's "discipline," which refers to an established body of knowledge and its scholarly growth. Instead we have four questions to offer: "What do you want to learn? Why? What do you believe you've already learned? How do you know?" To be a virtuoso at asking these questions of academic learners doesn't seem very much of a content-based expertise. But it is a discipline in a quite ordinary sense of the word: Mentoring is a commitment to rigorously engaging in a coherent set of purposeful, specific and demanding activities. The purpose of our

questions is always to nurture learning, both in others and in ourselves.

It's not so simple to stick to these questions. Students want to receive knowledge, and for that matter, so do we. On top of that, we mentors are, after all, professors, and we like to profess. In the face of these temptations, being a questioner – someone who does not presume to know – takes discipline. In our college, learning this discipline takes time, effort and help. And, like mastery of a musical instrument, mindful practice is necessary even for the most experienced among us.

To be sure, this profession can be as annoying as it is difficult. If one is used to and trusting of "school," being asked a bunch of questions about what one wants to learn and why, is disconcerting and seemingly frivolous. Why not just say what we probably know? That's what teachers do. But by asking and listening instead of telling and directing, we are inviting students to join us in experiencing the world as not entirely set and settled. We are inviting them to discover with us what is most important for themselves, and to take part in the wonder of creating knowledge and of being respected in their own intellectual autonomy. Creating these educational collaborations is the scholarship of mentoring.

A College

Academic mentoring as a profession requires an institutional environment. The business of asking the four questions as academic procedure and policy could generate an entire college. However, Empire State College was not created to foster and sustain mentoring.

Rather, it was invented, notionally and far from in detail, to provide access to a SUNY bachelor's degree to people who, for whatever reasons, couldn't or wouldn't go to a traditional four-year campus. How this was to be accomplished was quite open ended. There were no disciplines, there was no curriculum, and there was no prescribed "seat time." The faculty role was not defined. We were

supposed to be geographically distributed and to be experimental. The students, whoever they might be, were supposed to define their own educations. Caring attention to the minds of individual persons was to take the place of systems. It was from this improvisatory spirit that we, willy-nilly, cobbled together a collection of practices that was called "mentoring." And each of the faculty was called "mentor," definitely not "professor" or "teacher."

Our four questions, therefore, do not describe the history of Empire State College. Rather, they are a philosophical reconstruction of the qualities which brought the college into being and of the day-to-day educational practices that distinguish it. Individual degree programs, learning contracts, narrative contract evaluations, working with students individually (in person, at a distance or both), evaluations of prior experiential learning – these are the forms and apparatus, however concocted in the moment and in their details that have been crafted over time to help people do college-level learning, whoever they are, wherever they are, and however, whenever and whatever they want to learn. This is what makes Empire State College unique. Yes, unique.

We also understand that we're not describing the whole college as it is now, or, for that matter, as it ever was. From the beginning, the college was established and worked out by people who came from traditional academia; and its students, even early on, were by and large not counter-cultural people, but were, as now, busy and pragmatic adults who needed to find workable ways to complete a degree. So, one could argue that mentoring was itself a valorization of pragmatic amateurism. Dignified with a mythic name, a "mentor" was in fact the accretion of responses from a small, dispersed group of educators to the needs and demands of their students. In other words, mentoring could be understood as a compensation for what the college really lacked – a full complement of accessible faculty across the disciplines, doing the teaching and scholarly work faculty are supposed to do. Whenever we've been able to

get hold of those customary things, we've done so. And, whenever they've been demanded by external agencies or by what is said to be the call of the market, we've obeyed. Empire State College has always been heterogeneous.

Even so, very early on, the people who fashioned Empire State College realized they were doing something very different and special, in part because, along with their pragmatism and interest in students, they wanted to do something better than what traditional academic usually had to offer. What's called mentoring was thus never just a placeholder for what the college lacked. Interestingly, though, mentoring was never codified. It existed in policy as a set of vaguely stated parameters of practice, and as the intensely held assumptions of an oral culture that newer faculty were supposed to "get." We learned on the job. If we listened to our students and if we joined our colleagues in perpetual and day-to-day conversations about students, then we realized, eventually, that we had learned to become mentors. Even in our far flung work lives, long before email and websites, we were creating and sustaining a community.

Could be, we were paying so much attention to our students and their learning, that we didn't sufficiently attend to our own – to the learning called "mentoring." From the beginning, Empire State College sought to acknowledge and evaluate the experiential learning of the students. We understood very well that such learning existed plentifully outside the academy. And we understood that when one names and articulates tacit knowledge, such learning, although a reconstruction, in a certain way is discovered or known for the first time. The prior experiential learning assessments (PLAs) we did every day with our students were intellectually demanding and creative for them and for us.

No less so, would be the assessment or reconstruction of our own experiential learning as mentors. We are asking ourselves, "What have you learned? How do you know? What

more do you need to learn? Why?" Doing "PLA" on ourselves is scholarship.

Scholars and their products, scholarship, are often thought of synonymously with experts and expertise. But it's worth pointing out, that scholars ask questions. When we seek to discover new knowledge, we have to take stock of what is already apparently known ("What have you learned?"), assess its truth ("How do you know?"), and then ask what is still to be discovered and why it's important ("What do you intend to learn?" "Why?"). Scholarship always begins with dialogue.

Keeping these dialogues alive – the ones we have with our students, with colleagues, and within ourselves – is not easy work, but it is important. It's not easy for people trained to be professors and who hold positions of authority to give their time to questioning rather than telling, and especially not to questioning themselves. And for the same reason, it's not easy for accredited educational institutions to legitimate themselves on the grounds that the knowledge most worth having is incomplete and provisional, and that learning is improvisational and achieved in an indefinite number of ways. But over the last 30 years, the two of us believe we have learned that this uneasy scholariness is among the very best ways to care for the mind. So, we keep talking.

Lee Herman, who holds a Ph.D. in Social Thought from the University of Chicago, has been a mentor in the Auburn Unit since 1979. A cofounder of the college's Mentoring Institute in 1993, Lee has received college and university awards for teaching and mentoring.

Alan Mandell is celebrating his 36th year in the college, having worked as mentor, administrator (at both the Hudson Valley and Metropolitan Centers) and director of the Mentoring Institute. He now serves as the College Professor of Adult Learning and Mentoring. Mandell earned his Ph.D. in Sociology from The Graduate School and University (CUNY). Lee and Alan have written many articles and made numerous presentations on mentoring. For example, their book, From Teaching to Mentoring: Principle and Practice, Dialogue and Life in Adult Education, was published by Routledge in 2004. Their essay, "Mentoring: When Learners Make the Learning," is contained in Mezirow and Taylor's Transformative Learning in Practice (Jossey-Bass, 2009).

Notes on a Mathematical Model of the Decision-making Process

By Gohar Marikyan
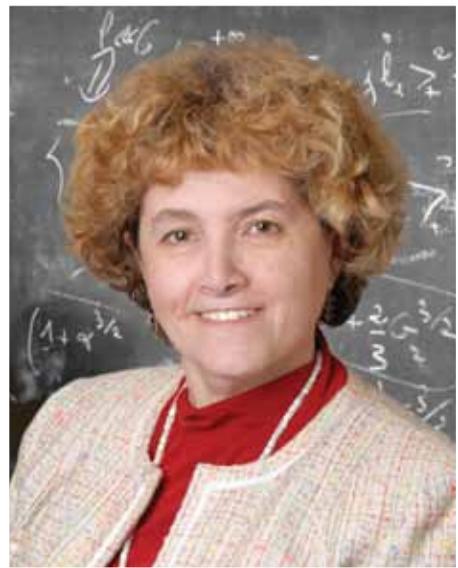
I n my younger years, I could not identify with those friends of mine who were fascinated by the teaching profession. I never dreamed of becoming a teacher, although I had good teachers as role models. Growing up in a family of Ph.D.'s, my role model was my physicist father and my goal was to become a scholar. The family tradition, coupled with my fascination for scholars, led me to earn my master's degree in computer science and my Ph.D. in mathematical logic. My inner desire to share knowledge, however, led me to integrate scholarship with teaching.

Ernest Boyer's words about the scholarship of discovery, the scholarship of integration, the scholarship of application and the scholarship of teaching, have given new meaning to my day-to-day work, and also have clarified why I enjoy teaching.

In this essay I review how my teaching and scholarship are interconnected, and how these two contribute to, and interrelate with, each other. I describe my teaching methodology, which is driven by my research and from my personal observations as a teacher and a mentor. I sketch the direction in which I plan to continue my research – a direction that is an integration of research, discovery and application, where students also participate in research and discovery with the teacher. This is important for me because it allows me to integrate the two parts of mentoring: research and teaching.

My research is in automation of problem solving. This is one of the important topics in artificial intelligence, a branch of computer science that uses computers to simulate human thinking. I have researched Martin-Löf's Type Theory as a system for automation of problem solving. On the basis of the Type Theory a few systems were constructed in Cornell University. These applications of

Martin-Löf's Type Theory are valuable, but more can be done. It is a powerful tool that can be used to solve more complex artificial intelligence problems.[1]

With each student, my arsenal of teaching tools and methods grows considerably. I always observe my students' process of learning very carefully. My observations contain vast amounts of information – not only about thinking processes, but also about personalities and levels of knowledge. Can this exercise guide us to the consideration of the possibility of mathematical modeling of the process of human thinking and decision-making? Can these be translated into the language of Martin-Löf's Type Theory? What is the relationship between the inclusiveness of cause-and-effect in the model and the level of fuzziness? How is this problem connected to my research topic: automated problem solving in Martin-Löf's Type Theory? And finally, what are the possible applications of this research?

These questions are interesting and at the same time very broad, and can be too theoretical. On the other hand, research should not be too narrow either. The measure of success depends on the possibility and the value of its application.

Martin-Löf's Type Theory is a logical system based on the principles of mathematical constructivism. It is based on a certain correspondence between propositions and types: a proposition is identified with the type of its proofs. There are also types that contain values. Functions definable in Martin-Löf's Type Theory are always computable. Any problem defined in the language of the Type Theory is a type in the Type Theory. To solve the problem is the same as to infer (deduce) the type that represents the problem in the Type Theory, and it is the same as to construct an object of that type. Based on the construction of that object, a computer program can be created that produces a solution of the problem. The automation of the above-mentioned procedures would result in a system for automated computer program writing.

Artificial Intelligence and Teaching

At Empire State College, I teach a vast range of studies in mathematics, computer science and interdisciplinary courses to a diverse student population in both one-to-one and group settings. As a math-logician (someone who develops and represents logical principles by means of a formal system built using a set of symbols, formulas that are combinations of these symbols, axioms and rules of inference), I appreciate the process of analytical thinking and reasoning. That is why I develop methodologies for all of my studies that nurture logical thinking and problem-solving skills. I carefully observe the students' thinking processes. It is amazing to notice how many different ways students approach the same problem. What a vast spectrum exists in the process of reasoning. At times it becomes a challenge to explain a complex topic to the group so that everyone understands it and does not allow it to interfere with the processes of their logical thinking. I have developed a method that allows students to strengthen their analytical thinking and reasoning skills without spending long hours on repetitious practice. In other words, I prefer learning through understanding versus learning by rote.

As a teacher, I have observed various groups solving problems from textbooks using steps provided in the textbook, or following the steps for the solution of a similar example. Even though students were asked to solve the problem as a collaborative effort, each student invariably solves the problem by himself, by just following the steps. The only necessary skill would be to define which of the given values to use for each calculation. This process is very similar to yesteryear's computers that followed an algorithm, a sequence of instructions (written in a programming language) to solve a particular problem. These steps are exactly specified to arrive at the correct answer. The key word here is particular. It means these steps are applicable only for this particular problem, and that we need to put together a new algorithm for solving each problem. This is exactly what

authors of most textbooks unwittingly do; they specify a set of steps for solving each particular problem. The slightest variation in the problem confuses the student.

Armed with my initial observation of the group, I then devise a special problem for them. Invariably, the group becomes active and each student tries to find a set of steps to solve the problem, followed by a discussion about which set is a good match for solving the problem. After the discussion and trial and error, they come up with the correct solution. This is the moment of discovery. I name this process the heuristic method of problem solving because heuristic refers to solving a problem by intelligently chosen trials and learning from errors. In contrast, an algorithmic method uses a set of predetermined steps that lead to the correct answer to a specific problem. Here, the key word is intelligent. In this process students do not try out all available sets of steps, instead they select intelligently, and improve and refine their method of selection after each error. This is why I identify this process of trial and error as intelligent because it nurtures analytical thinking. Another benefit is deeper learning. In my observation, and from students' testimonials, they learn more from the heuristic method of problem solving where they put to use their own innate, natural capabilities to use logic and reasoning.

There are two processes that take place side-by-side during the selection. Students try to relate the various small pieces of information given in the problem in order to put together the whole picture. Simultaneously, they use the negative feedback mechanism to reject unwanted information. These are the two main ideas that play an important part in cybernetics, a formalization of feedback theory originated by Norbert Wiener. Wiener discovered that feedback mechanisms generate intelligent behavior, and that they can be simulated by machines. These two discoveries set the foundation for the development of artificial intelligence.

From this historical information we can conclude that intelligent trial and error results in the development of analytical reasoning. This corroborates student testimonials and my own observation about deeper learning. Another outcome is that the word mathematics goes from the level of "do your math" to a more scientific level and becomes a tool for the development of logical reasoning in the mind of the student.

The development of artificial intelligence has reached a level that computer science trailblazer Alan Turing's famous question "Can machines think?" seems to capture. Thinking machines are very close to becoming a reality. But we must not forget that machines are made by humans, and humans make them "think." In the era of developed artificial intelligence, analytical-thinking skills have become more important, and have opened more opportunities for use in everyday life and careers.

Classroom Observations

In observing the reasoning processes among students, at first glance one can notice similarities and differences, plus some patterns. These observations lead to the discovery and the prediction of the thinking processes of each student. Also, it lets one evaluate the level of knowledge in the student and identify weaknesses in reasoning. These observations are especially helpful in teaching in one-to-one settings.

The questions that I ask are: How precise are these predictions and what is the level of fuzziness? Can they be formalized and is it possible to create a model in order to simulate these predictions?

Another correlation between teaching and artificial intelligence may be found in the observation of research-based projects. Students collect information relevant to the topic then, through discussions, the group arrives at a conclusion. Invariably students discuss how nonrelevant information was eliminated, how collected information is interrelated, and how

they arrived at conclusions. These discussions are an important part of learning. Interestingly, by their own natural capabilities, students discover the process of reasoning.

After a couple of projects, students start to recognize some patterns in each other's reasoning processes, and ask questions about possible origins of these patterns. Often these questions initiate interesting discussions about modeling of thinking, data mining, intelligent agents and automation of problem solving.

Conclusion

These observations fall within the complexities of artificial intelligence and need further research. New discoveries will have a multitude of applications in business, politics, education and training, gaming and entertainment, planning, trends and the like. Student interest in this area points to the need for developing related research topics to be carried on by the student, and the need for integrating them in teaching.

This is where the four tenets of Boyer's vision come in. The task of the professor continues ad infinitum as new groups of students enter the stage in a never-ending play. The professor is constantly engaged in the scholarship of discovery, in the scholarship of integration, and in the scholarship of application, all leading to the scholarship of teaching.

Gohar Marikyan is a mathematics and technology mentor and the convener of Science, Mathematics and Technology at the Metropolitan Center. She holds a Ph.D. in Mathematics and master's degree in Computer Science. Her research focus is on mathematical logic as it applies to computer science and her other scholarly interests include the history of math education as it applies to the development of teaching methodology. The results and findings of my research have been presented in domestic and international conferences and published in a number of scientific journals.

The Scholarship of Art: Reflections on the Merger of Theory and Practice for Teaching

by Betty Wilde-Biasiny

I n response to Boyer's pivotal essay, Scholarship Reconsidered, my first thoughts lead to Dewey's philosophy of experiential learning. Students in newly emerging art programs within academic institutions of the late '60s and 1970s began to embrace Dewey, while the field of adult higher education was still "dewey" (like the morning grass). It was the next new thing after years of art "training" being predicated on the Bauhaus, which offered theories ranging from color (Itten) to three-dimensional design (the International Style). Today, this is often dismissed as "formalism" and, while still taught in some way in most art departments, its shape has softened, like the architecture of Frank Gehry, and embraced more individualized practices and cultural theories being applied to the visual arts and other art disciplines. Artists also most often become dewy (in the eyes) in academic settings that feature a more rational approach to scholarship. This is why Ernest Boyer's themes of discovery, integration and application resonate with the scholarship of art; in fact, they mirror the creative process.

Since the pursuit of the arts is also "do-ey," that is, its myriad forms are created, performed and presented, the arts within this journal have been organized within the Boyer discourse as "applied." While this is apt, one clarification is necessary: in the arts, the term "applied" often means without theory or conceptual language. This is an important distinction when describing the teaching and mentoring of the arts at the Metropolitan Center, where my colleagues in theatre, performing arts, film and photography, as well as within my own area of studio arts, are predicated on the integration of theory and practice.

Among our rich array of studio and art practitioners, complemented by cultural historians, performance art scholars, curators and museum practitioners, we offer students a panoply of studies that embrace theory and practice as a unified ethos. Studies in watercolor or digital printmaking include assignments on viewing and writing about art and theory; seminars in art history and contemporary theory often result in visual presentations.

Colleagues such as Lucy Winner, through her application of theatre to community health, truly expands Boyer's notion of application; in fact, Winner has been instrumental in the field in establishing the term "applied theater" and has provided input in the new MFA at CUNY. Dr. Ruth Goldberg's menu of film and communication studies ranges from Cell phone Cinematography to Writing for New Media. Dr. Lisa Parkins has collaborated with the Empire State College's New York City Environmental Residency to create a hybrid study embracing ecology and performance studies in Sea Level Rising: Performing the New City. Adjunct mentor Carol Warner's Professional Development for Artists helps studio practitioners carve out a business plan to identify strategies for furthering and gaining support for their visual art practices, forging an "applied fine arts."

Since this is an historical and celebratory journal, there are two other examples of artistic practice that have influenced all of our work. First, Dr. Mel Rosenthal, distinguished SUNY Professor Emeritus, through his development of the photojournalism program at the Metropolitan Center, in its myriad locations, for more than 30 years, provided a model of visual art and media for social change. Dr. Rosenthal mined the most provocative and active practitioners of his time and brought them as guest lecturers to his Saturday seminars. He emphasized writing, through journals, finding a good story, then capturing it into a unified portfolio that linked word to picture. In commemoration of his own work and ongoing commitment to the Empire State College mission, the Metropolitan Center will be presenting a retrospective exhibition of his work during this anniversary year, titled "Mel Rosenthal: Forty Years in Pictures." The expectation is that many of the cultural themes and issues presented in this body of work will mirror the social concerns and memories of the 40-year lifespan of Empire State College.

A former program very directly linking students to the art world was the Studio Semester Program, coordinated for more than 30 years by George McClancey, professor emeritus. Professor McClancey formed an innovative program linking the New York City art world and SUNY students from throughout the network of all of SUNY to provide studios and interaction with art world notables. McClancey believed that, in addition to a full liberal arts education, new artists were best served through interaction with practitioners, including art historians, gallerists and art critics. The Studio Semester Program provided lively seminars, guest speakers, individual critiques and the camaraderie of artists that formed a strong community of practice and launching pad for our students, many of whom have gone on to MFA programs and gallery careers.

My short six years leading the program, which ended in 2006, have inspired me to continue providing such opportunities to our students, though now in more digital formats, through our digital media lab. The lab is a creative space that encourages students to make art with digital tools, within the traditions of printmaking and painting. In addition, it has also become a fertile ground for the photography students to hone more technical aspects of their practice, then to learn how to print quality images in both color and black and white formats. Output from the digital workshop has been prolific, resulting in a collection of student work that now covers the entire Metropolitan Hudson Street facility. One of my students has named it "The Betty," with both a photography wing and a digital printmaking wing.

Among the rich array of arts practitioners and theorists, the team of arts mentors at the Metropolitan Center has also had the benefit of shared practice within a larger academic context. As an artist, I can attest to how this supportive learning environment has strengthened my own range of knowledge and application to my painting. Within the pages of this journal, my watercolors from the series "Nature as Real" are presented here as a metaphor for my own growth and transformation; perhaps, in response to the seeds of Boyer's philosophy that have so inspired our community of practice at Empire State College.

Betty Wilde-Biasiny is an artist and curator, and has been a mentor in visual art at SUNY Empire State College since 1998. An associate professor, she coordinates the Visual Art Program at the Metropolitan Center in New York City. Her work has been represented in several exhibitions in Soho in the past and her digital prints and watercolors are on exhibit at the SACI (Studio Art Centers International), in Florence, Italy, during the spring of 2011. Her academic degrees include a Bachelor of Fine Arts from Ohio University, and a Master of Fine Arts from Columbia University. She is the recipient of the Individual Artist Award from the Pollock-Krasner Foundation.

Watercolors by Betty Wilde-Biasiny

Dancing Marigolds

Nocturn

Cross-pollination

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