

# The Classroom

Center for the  
Enhancement of  
Teaching &  
Learning

The Newsletter For Teaching and Learning at Georgia Tech

Fall 2006

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## Good Teaching at Georgia Tech

by Donna C. Llewellyn, Ph.D.  
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In a storage box in a CETL closet is a collection of dusty vhs tapes entitled "Good Teaching at Georgia Tech." This, too, was the title given to the first newsletter produced by CETL back in the late 1980's (it had a neat logo of GT at GT)... Whenever I look back at that title, though, I ponder what is good teaching here at Georgia Tech - is there really just one definition that I have to choose?

In this issue of *The Classroom*, we approach this question from five different angles:

Dr. Joyce Weinsheimer solicited a few quotes from some of the participants in our faculty fellow programs to give a sense of what they do to implement good teaching. (See Joyce's article for instructions of how you can add to our collection of these viewpoints.)

The recipients of the 2006 Eichholz Teaching Fund Honoraria are interviewed about their perspectives on teaching core undergraduate classes. This fund was set up with a generous donation from Geoffrey Eichholz, Regents' Professor Emeritus of Nuclear Engineering. Dr. Eichholz wanted to ensure that Georgia Tech faculty members who had demonstrated excellence in teaching core subjects to first and second year students were recognized and celebrated. Drs. Bayor and Harrell definitely fit the criteria and, in addition, give some wonderful insights into the role of the administration in supporting excellent teaching

Dr. Jim Foley gives an update on the CMS Selection Committee that has been meeting since July. Georgia Tech has a responsibility to herald the "technology" portion of its moniker. In order to fulfill its mission to be an innovative leader in technical education, the institution must support innovative educational technology tools. There must be an opportunity for GT at GT to include a third GT (Great Technology).

*continued on page 16*

An Interview with the recipients of the  
Geoffrey G. Eichholz Faculty Teaching Award

**Dr. Ronald Baylor**

Chair, School of History, Technology and Society

**Dr. Evans Harrell**

Associate Dean, College of Sciences

■ Ronald H. Baylor (Ph.D. University of Pennsylvania) is Chair and Professor of History in the School of History, Technology, and Society at Georgia Tech. He was the founding editor of the *Journal of American Ethnic History* and served as editor from 1981-2004. He is the author of *Neighbors in Conflict: The Irish, Germans, Jews, and Italians of New York City, 1929-1941* (Choice outstanding academic book for 1978); *Fiorello LaGuardia: Ethnicity and Reform*; and *Race and the Shaping of Twentieth-Century Atlanta* (an outstanding book award from the Gustavus Myers Center for the Study of Human Rights in North America). He is also co-author of *Engineering the New South: Georgia Tech, 1885-1985*; editor of *Neighborhoods in Urban America*; co-editor of *The New York Irish* (James S. Donnelly, Sr. prize of the American Conference for Irish Studies for best book in history and social sciences), and editor of *Race and Ethnicity in America: A Concise History* and *The Columbia Documentary History of Race and Ethnicity in America*. He has been the recipient of the Immigration and Ethnic History Society's Distinguished Service Award and serves as president for the next three years. He has also received the Lifetime Service Award from the Association for Asian American Studies, the Georgia Tech Outstanding Teacher Award, the School of Social Sciences Excellence in Teaching Award, and the Geoffrey Eichholz Faculty Teaching Award.

■ Evans Harrell was born and raised in the Midwest. He left Cincinnati to study physics at Stanford and then to specialize in the mathematics of quantum mechanics at Princeton, where he got his Ph.D. The vagabond period of his early career took him to Haverford, Pennsylvania; the Navajo Reservation in Arizona; Vienna; Cambridge, Mass.; Rapid City, South Dakota; and Baltimore. In 1983 he came to Georgia Tech to settle down, if you don't count numerous research trips that have taken him to all the continents. At Georgia Tech Harrell was an Alfred P. Sloan Fellow and a founding member of the Center for Dynamical Systems and Nonlinear Studies. He was the recipient of Tech's Distinguished Service Award in 1996, and was Associate Chair of the School of Mathematics from 2002 until his appointment as Associate Dean of Sciences in late 2005. Earlier this year he was chosen for one of the Geoffrey G. Eichholz Faculty Teaching Awards, although as an administrator he could not accept the monetary part of the honor.

Harrell is married to Charity Scott, Director of GSU's Center for Law, Health, and Society. They have two children, one of whom is in law school, while the other teaches elementary school in Hapeville with Teach for America. Harrell is a bicycle commuter and enjoys other outdoor activities like water sports, wilderness trekking, and watching wildlife. In quieter moments when not engaged in science he is likely to be learning about current events, history, or other languages and cultures.

**Q:** *What are some challenges for faculty in teaching core classes?*

**Harrell:** The greatest challenge in a big calculus class is the diversity of students. They have every possible major, and some are new to the subject, while most have some degree of past experience with it. You can't reach them all with the same point of view.

**Bayor:** In such courses, there will be students who already have some interest in the subject and those who never have been interested. The faculty challenge is to reach out to all the students and hopefully make the material exciting enough to draw even the uninterested into a beginning appreciation for, in my case, history. Part of accomplishing this goal is to show the student how there is a continuity between past and present events. History is so much more than obscure dates; it is an understanding of where we are in the context of the past and the present.

*"In calculus it is a challenge to make concepts visual . . . Physical props can give . . . three-dimensional insight . . . Sometimes I have hammed it up with physical props such as an antique calculating machine, a machete, and a live snake -- not at the same time."*

**Dr. Evans Harrell**

**Q:** *What are some rewards of teaching core classes?*

**Bayor:** The reward is in awakening students to a field they had dismissed before and seeing their inquisitiveness, intellect, and understanding grow. When some of these students appear in upper level courses due to your influence on them in the freshmen course, that is very satisfying.

**Harrell:** The things students learn in core classes

are the really fundamental ideas of science, and it is gratifying to watch as students see the light for the first time. When students experience how powerful mathematics can be and understand that it is at the core of a technological civilization, they have learned something of permanent value.

Even though the large lectures in core classes are less personal than small, focused, courses, you get to meet so many students that you have a sense of knowing the campus as a whole.

**Q:** *Tell us about some of the useful and effective techniques you use in teaching core classes?*

**Harrell:** As I plan each lecture I try to pick out at least one simple, clear message that the students can remember, to summarize what we did on that day, even when the topic is something tough and subtle. Or rather, especially then.

Just because a class may be in a big lecture hall, students don't have to be passive. Tactics a teacher can use to keep students engaged include asking them a lot of questions to stimulate dialogue, and challenging them with puzzles and contests. In calculus it is a challenge to make concepts visual and to develop students' ability to see things in two and three dimensions. Physical props can give even better three-dimensional insight than diagrams and computer displays. Sometimes I have hammed it up with physical props such as an antique calculating machine, a machete, and a live snake. (Not at the same time.)

**Bayor:** My main question when beginning the history survey is to ask what is different about the United States today as compared to one hundred

years ago? What type of life would you be living in the nineteenth century? What has changed in regard to government, occupations, and gender roles. There was no social security one hundred years ago, no unemployment insurance, no income taxes, and few paying jobs for women. How has all this changed and why? I also look at some of the perennial issues in American life such as racism, legislating morality (e.g. the prohibition movement), immigration and how the country has dealt with those issues over many decades. Whenever possible I bring newspaper articles into the classroom to show students how these problems, changes, and issues still resonate today. There is no topic today that does not have a link to the past.

**Q:** *What is a teacher's most important responsibility in the learning process of students? What is the students' most important responsibility?*

**Bayor:** The teacher's responsibility is to present the material in a logical and interesting manner, to be available to answer all questions, and to treat the students with respect. Answering even the most basic question is important. I encourage students to ask questions any time during the class. I also make a point to say that nobody gets a better grade by agreeing with me on controversial subjects. I want a dialog with students, and I want them to think, disagree, and form their own opinions.

For the student, their job is to keep up with the material, read the assigned books, and come to class. Students who read the books only before the exam and/or cut class often will miss what they are here for—a college education.

**Harrell:** It is the student's responsibility to take initiative to study and learn – the teacher can't do it

for the student, but can only make it possible. For the teacher to do that, the essential responsibility is to understand the students, to be aware of what they know, what they don't know, and what they are ready to learn.

**Q:** *Can you describe some high points in your career as a teacher?*

**Harrell:** Several years ago I got a kick out of teaching honors calculus, which is one reason I look forward to the new Honors Program. I stayed close to those honors students for their whole time at Tech, and one of them did an REU project with me. I still hear from them from time to time.

One of my most interesting advisees was Matthew Conaway, a severely disabled student who liked engineering but was physically unable to fulfill the laboratory or field requirements for a regular engineering degree. I helped craft a unique course of

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***Dr. Ron Bayor***

study with which he collected a mathematics degree along with an undesignated engineering degree. His graduation was a moving event, at which he received a standing ovation when he was wheeled on stage. Matt courageously went on to get a masters in Public Health, and recently informed me that he has been accepted for candidacy for a Ph.D. on mathematical modeling of paralyzed human muscle.

The Eichholz award was unexpected. Since I had been running the graduate programs in Math for a couple of years, those responsibilities kept me focused on advanced courses. I was very pleased

# Q&A

that people hadn't forgotten my calculus classes in that time. It might have been due to the machete and the snake!

**Bayor:** My high points are watching the students start to understand the subject. You can see it in their eyes and hear it in their questions. I've also enjoyed meeting students years later who remember the course and say that it had an impact on them. When students start to bring in newspaper articles that relate to the issues under study or raise questions about current events, I feel that a connection has been made. I would also say this when they tell me about discussing historical events and assigned books with grandparents and parents, especially when this is the first time they have come to appreciate and evaluate their family's experiences; it is a clear sign that the student is placing his family into the continuity of history.

**Q:** *What are your thoughts on what constitutes success as a faculty member? How does one balance the different roles of teaching, research, and service?*

**Bayor:** A successful faculty member does all three. There is an especially close tie, even in core courses, between research and good teaching. You can bring your particular expertise into class. I've always brought my special interest in cities, ethnicity, and race into my courses. My students learn about my on-going research before anyone else. This is the benefit of a research university—cutting edge research and new interpretations become part of the course curriculum.

**Harrell:** I have been heavily involved in all three activities. Each of them has its own appeal and can be a path to success for a faculty member. A re-

search breakthrough is a real thrill, but it doesn't happen every day, whereas with teaching and service you can accomplish something all the time. I feel that research enhances my teaching by giving me unique perspectives about what makes a subject I teach interesting and important. And it would surely be impossible to be a good academic administrator without real experience in the classroom and in the creative side of science. The three activities can support one another well.

**Q:** *What advice would you offer a new junior faculty member who wants to succeed at being a good teacher?*

**Harrell:** Get to know the students and always be aware of what they know and what they don't know.

Be honest with your students about the mistakes you will inevitably make. This shows them that you care, and often makes for an excellent teaching opportunity.

Talk with your colleagues about your classes. You'll profit from their experience, and you will find out about resources you weren't aware of, without having to reinvent them.

**Bayor:** I would say know your subject matter thoroughly and be prepared to answer all questions. Learn your trade by sitting in on other professors' classes so you can see what works and what does not. If you pay attention to student reactions and comments at the end of your course, you can get a good sense of how effective your teaching is.

*continued on next page*



# Q&A

**Q:** *How has your experience teaching undergraduates informed your work as an administrator?*

**Harrell:** Undergraduate education is Tech's core activity, and we make decisions in the Dean's Office all the time about student recruitment, courses, and undergraduate policies. Experience in the classroom and with individual students is our constant guide.

**Q:** *How does your administrative role impact your teaching?*

**Harrell:** I am afraid it means that I am not in the classroom as often! On the other hand, being an associate dean may allow me to have a greater impact on others' teaching.

**Q:** *As an administrator, what impact do you hope to have on teaching at Georgia Tech?*

**Bayor:** The impact will come with new hires and peer review of my colleagues. Teaching evaluations, which I consider very important, play a role in tenure and promotion decisions and in salary considerations.

**Harrell:** It's the nature of Georgia Tech to innovate, and to train innovators. I'd like to help Tech be recognized for interdisciplinary studies and for having inventive curricula within the disciplines. Students at all levels should have opportunities to integrate research into their education.

The new Honors Program was in the works before I signed on as an associate dean, but I see it as an exciting opportunity for Tech, and would like to help it reach its potential in bringing the best students here and giving them a unique education.

One of my roles is to work with the graduate students in the College of Sciences. Many of them are GTAs, and starting right with orientation I'd like

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***Dr. Evans Harrell***

to prepare them to do their jobs well and develop into teachers Tech can be proud of. Last year the School of Mathematics GTA program won the Board of Regents Teaching Excellence Award, and I'd like to see this level of performance throughout the College. Similarly I'd like to encourage new faculty to be dedicated to teaching and to have every opportunity to excel at it throughout their careers.

**Q:** *What is the hardest part of your job?*

**Harrell:** I don't find individual parts of an academic job very difficult, but it does keep one busy. The hard part is organizing the work so that it all gets done on schedule, and done well, while leaving time to work on the big picture.

**Q:** *What is the most important part of your job?*

**Bayor:** As an administrator and a professor, the hardest and most important parts of the job are the same—to keep students and colleagues involved, interested in improvement, and in furthering their education. It is all about learning, which is the main job at Georgia Tech.

**Harrell:** Although I have become an associate dean and have an active research program, teaching students still has my highest priority.

**Q:** *Describe your fondest memory of a teacher who inspired you.*

**Bayor:** I would have to say two professors have had an impact on me. One is Bernard Bellush when I was an undergraduate at the City College of New York. He taught a course on the first half of the twentieth century. He had a great passion for history and was also involved as a citizen. He brought the newspaper into class often and related events in labor, urban, and social history to the events of the day. I learned about historical patterns and continuity. In graduate school, Wallace Davies, at the University of Pennsylvania, was a skilled lecturer in the core history course, and I was one of his teaching assistants. His lectures were filled with interesting anecdotes that kept the lecture lively and entertaining. I have tried to follow the styles of both.

**Harrell:** As a sophomore physics major I took a course on electricity and magnetism from an experimental particle physicist, Mel Schwartz, who later won the Nobel Prize. There was no textbook, because Schwartz was writing his own, and it was riveting to watch him think the subject through. This was the first course in which I could really see the role of theory and mathematics in science. You could tell that Schwartz loved the subject and always kept a sense of wonder about it. I was not at all surprised to learn that later in life he developed an interest in the physics of toys. I was thrilled when Schwartz followed up after the course by hiring me to solder equipment together and install it in a dark, dusty hole in the ground for a long-shot experiment to look for super-weakly interacting particles. It never paid off, but it was real science in action, and in those days there weren't organized REU programs allowing many undergraduates to experience that. It seems at first paradoxical that an experimentalist would do such a good job of inspiring a theorist (and he may have been disappointed in my choosing that path), but first-rate scientists like Schwartz have an appreciation for their entire subject, and know how to convey it. I was sad when I learned that Mel Schwartz passed away at the end of August this year. ■

# Teaching At Georgia Tech

by **Joyce Weinsheimer, Ed.D.**

Assistant Director for Faculty Development, CETL

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There are as many approaches to teaching at Georgia Tech as there are faculty members who provide instruction for our more than 2200 courses each year. As new semesters begin and classes get underway, each one of us works to figure out how best to help our students learn. We puzzle over what's most important for our students to know, to understand, and to be able to do. We design experiences (including class activities, assignments, and tests) that set the stage for this learning to happen. Yet we wonder: is this the best way to teach?

Over the years higher education has learned quite a bit about the characteristics of effective University teaching. While there may be no one best way to teach, our knowledge of good teaching is growing. Take a look at the properties of effective teaching highlighted in the box below, then see what your colleagues have to say about how they exhibit these properties in the courses they teach.

## Properties of Good Teaching

from

Ramsden, P. (2003). *Learning to Teach in Higher Education*.

New York: Routledge Falmer. (pp.86-87)

- A desire to share your love of the subject with students;
- An ability to make the material being taught stimulating and interesting;
- Facility for engaging with students at their level of understanding;
- A capacity to explain the material plainly;
- Commitment to making it absolutely clear what has to be understood, at what level, and why;
- Showing concern and respect for students;
- Commitment to encouraging student independence;
- An ability to improvise and adapt to new demands;
- Using teaching methods and academic tasks that require students to learn thoughtfully, responsibly, and cooperatively;
- Using valid assessment methods;
- A focus on key concepts, and students' misunderstandings of them, rather than on covering the ground;
- Giving the highest-quality feedback on student work;
- A desire to learn from students and other sources about the effects of teaching and how it can be improved.



*With the significant pressure to get a good job or to get into a good graduate program, it is easy for students to lose track of their true educational purpose and focus more on grades than on learning. In the classroom, I try to redirect this attention by creating a relaxed, learning-focused atmosphere. Following Paul Ramsden's advice, I show my respect and concern for the students by learning their names and by inviting them to call me by my first name. This sends a clear message: "We are in this together and our common goal is to learn." In my experience, such an approach really allows students to relax; it lowers the threshold towards active participation, and encourages students to ask questions not only because it may be on the exam, but because they are actively engaged in critically evaluating the concepts, methods, and assumptions discussed in class.*

Chris Paredis, Assistant Professor, Mechanical Engineering  
2005 Class of 1969 Teaching Fellow

*I incorporate most of these methods at some point every semester, but the two that are a main focus for me are "showing concern and respect for the students" and "sharing my love for the topic." Georgia Tech students are a very sharp and focused group, but I believe that they sometimes find GT to be a very cold and impersonal place. I make a significant effort in every lecture period to express my genuine concern for each individual student and make it clear that I am dedicated to helping them learn. I am accessible outside of class, and I take the time to know the students well. These efforts dovetail nicely with the second point. By making my passion for the subject known, they get a little bit of a personal picture of who I am. This reduces the intimidation some students naturally feel as they begin their college experience.*

Andrew Lyon, Associate Professor, Chemistry & Biochemistry  
2006 Hesburgh Award Teaching Fellow

*There is so much beauty in biology, so many intricacies, so much logic. What a thrill it is to understand how things work. I am privileged to be able to partner with such excellent students as we have at Tech, to have the chance to help them find that thrill for themselves. My approach to do so through the classroom experience is summarized in four themes: challenge, enable, reward, and inspire. I challenge the students by setting the bar high, asking them to construct their own understanding of a lot of material through the semester. I enable them to reach the bar by continually building on fundamental principles, focusing on questions, and paying attention to "how we know what we think we know" rather than simply supplying a list of concepts to memorize. I reward the students for thinking deeply, and for vaulting over the bar, by grading their work fairly, and by helping them achieve their personal goals — be that medical school, graduate school, or just surviving to shake President Clough's hand on the graduation stage. And I inspire the students to learn more through their lifetimes, in part by reminding them of those questions that remain unanswered. It may be that one of these students will catch the fever and be a colleague in the future. Will it be that young man? that young woman? And when one of my students says to me after class "That experiment you showed us was really cool!", it feeds the soul.*

Nael McCarty, Associate Professor, Biology  
2006 Hesburgh Award Teaching Fellow

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*At a research university, one of the most difficult tasks of a good teacher is to convey the creativity, messiness, tentativeness, drama, controversy, and confusion that mark the actual world of research. The ideas conveyed in our textbooks have been reduced to simple, seemingly obvious concepts linked through a clear logical structure. But hindsight is 20/20, and the process through which we reach such conclusions is often hidden from students, especially the very bright ones who have an easy time following a path once the trail has been blazed.*

*If we want to attract our best students to be future professors, researchers, and scientists, we need to depart from the textbooks, teach the controversies (not just the outcomes), and do a much better job of integrating our research lives with our teaching lives.*

Bill Drummond, Associate Professor, Architecture  
2006 Hesburgh Award Teaching Fellow

*One key aspect that Paul Ramsden mentions is the capacity to explain the material plainly. As I think back on my college experience, some of the courses that I had the most difficulty with seemed to have been those that were presented in a fashion that was overtly complicated. The lectures appeared to be convoluted and unorganized—they lacked a unifying theme and connection to the topic and/or to the broader concepts. Of course, I as a student probably had a convoluted and unorganized approach to the course as well!*

*As I develop my lectures as a faculty member, I try to keep the notion that simplicity itself can be eloquent. Whenever possible I try to ‘deconstruct’ the topic or concept step-by-step and then carefully rebuild it back, hopefully keeping the students engaged along the way so that they have a hand in creating the foundation for themselves. Biology and biological processes are intriguing and complicated mysteries—but when a student catches on to a unifying theme, it is a pleasure and a great privilege to watch their reactions when the ah-ha moment arrives!*

Patty Sobecky, Associate Professor, Biology  
2006 Hesburgh Award Teaching Fellow

*If you’d like to contribute to this “snapshot” we’re creating of good teaching at Georgia Tech, send your story to [joyce.weinsheimer@cetl.gatech.edu](mailto:joyce.weinsheimer@cetl.gatech.edu) ■*

# Why Knowing About Disciplinary Differences Can Mean More Effective Teaching

by Michele Marincovich, Stanford University, and Jack Prostko, University of Maryland

Most faculty members are probably comfortable with the notion that their disciplinary background deeply influences not only what they teach but how they teach. And, indeed, a growing body of literature suggests that there is a host of effects – including level of commitment to teaching, views of students, and even teaching evaluation ratings – associated with disciplinary differences. This essay draws on that growing body of research to suggest ways of becoming more conscious of the way disciplinary training and orientation influence teaching.

One particularly interesting line of research, summarized by Braxton and Hargens (1996), concentrates on dividing the disciplines into meaningful clusters and comparing these clusters in terms of faculty's various academic roles and behaviors, including teaching. Very roughly speaking, the analyses by Anthony Biglan (1973a and b), David Kolb (1981), and Tony Becher (Becher & Trowler, 2001) have suggested that fields can be meaningfully classified by degree of scholarly consensus (with the highest consensus considered "hard" and lower consensus "soft") and their orientation to pure or applied research. This results in a useful four-fold clustering: hard/pure (e.g., physics, biology, mathematics, chemistry), soft/pure (e.g., psychology, history, philosophy, anthropology), hard/applied (e.g., engineering, agriculture, computer science), and soft/applied (e.g., education, accounting, journalism, nursing). Use of these clusters allows researchers to explore how faculty in different disciplines display differences in their behaviors and attitudes.

Some of the insights gleaned from this approach seem obvious, a reflection of the objective reality of the disciplines. For example, "[F]aculty in high-consensus fields were more likely to use teaching assistants than those in low-consensus fields" (Braxton &

Hargens, 1996, p. 33). Because introductory science and mathematics courses usually draw larger numbers of students than introductory history or philosophy courses, there's a greater need for TAs in those courses. But other finds are more interesting and likely to be useful to young faculty in the process of developing their careers or even experienced faculty attempting to be more reflective about their teaching. For example, Braxton and Hargens (1996) cited the research of Kenneth Feldman reporting that the relationship between teaching and research in low-consensus fields is at least moderate while in high-consensus fields it is insignificant. A young university teacher in physics or chemistry may benefit from knowing that she may have to work hard to make her teaching and research responsibilities mesh. Similarly, faculty members from a low-consensus field may put a high value on contributing to students' overall intellectual development. They should know, however, that if they are team-teaching with someone from a high-consensus field, that colleague is much more likely to concentrate on teaching content.

But interesting as some of these studies have been, will they in fact contribute to better teaching? Perhaps their strongest merit is that so many choices faculty make about the design of courses, assumptions about students, and selection of teaching methods are unexamined, not poor or wrong, but simply unexamined. These studies might encourage faculty members to reconsider some of what their disciplinary training makes them take for granted.

What would it look like if the disciplinary context were the subject of careful reflection rather than the assumed background of one's pedagogical efforts?

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In its broadest sense, it would mean becoming a practitioner of what the Carnegie Foundation for the Advancement of Teaching – and many others – refer to as the scholarship of teaching and learning (SOTL). It would entail bringing to teaching the same rigor of inquiry and the same commitment to public sharing, critique, and evaluation of pedagogical practice as to research. The Carnegie web site and its publications (Huber & Morreale, 2002; Hutchings, 2000; Schulman, 2004a and b) provide many examples of the exciting materials emerging from the careful nurturing of the scholarship of teaching and learning

But for faculty worried about the time and effort that a serious commitment to SOTL entails, are there faster and easier ways to use the disciplinary lens to strengthen one's teaching? We draw here from the work on pedagogical content knowledge, i.e., the knowledge of how to teach a particular field (see, for example, Lee Shulman, 2004a and b, and Lisa Lenze, 1995) to guide us in questioning our assumptions about our usual discipline-based approach to teaching

Perhaps one of the most dangerous assumptions is that students may have needs, interests, or abilities similar to those we had when we were studying the field. In private consultations faculty often tell us that they design lectures with themselves as a student in mind. For the few faculty who really struggled in their chosen discipline, such an approach can work. But for the vast majority of faculty to teach with themselves in mind is to imagine their least likely audience. Far better is assuming that students have quite different interests and abilities and providing them the opportunity to tell about themselves. A classroom assessment technique called the background probe (Angelo & Cross, 1993) is especially handy for this purpose

A safer assumption about students is that any discipline has certain key ideas that are difficult to master; faculty need to pay particular attention to these concepts as they plan their courses. Here the SOTL can make a particularly useful contribution to better teaching by encouraging faculty to share their strategies for making difficult concepts – such as Fourier transform in engineering, comparative advantage in economics, and thesis statement in English – understandable. In addition to identifying such concepts and focusing on the development of materials to elucidate them, faculty could also make a particular effort to give students early opportunities to test their mastery of these ideas, whether through classroom assessment techniques, assignments, quizzes, or other means.

Thinking more consciously about the disciplines will also mean taking a fresh look at teaching methods. Humanists take discussions for granted; for scientists it is generally lectures and laboratories. But what happens when faculty are willing to look beyond their discipline for models that engage and stimulate students? One of the young humanists on the Stanford campus, an amazingly successful teacher already, launched a discussion with his fellow humanists by telling them ten things he had learned from scientists, engineers, and social scientists, such as the importance of frequent assignments; email office hours; having students do concept maps at the beginning and end of the course to help them realize how much they'd learned; required office visits and on and on. He hadn't adopted any of these techniques whole cloth, but he'd adapted each successfully to enrich his own teaching of music. Had he insisted on staying within disciplinary borders, neither he nor his students would have benefited from any of these successful learning experiments.

Let us end with a plea to respect the importance of the disciplines and to continue to learn about them and accommodate them fully in our work with and as faculty. But also realize their limitations and their role in the assumptions that keep us from the fullest engagement of our students as learners. ■

excerpted from *Teaching Excellence - Toward the Best in the Academy* (Vol. 16., No. 6, 2004-2005)  
For the entire article including references, please contact Dr. Joyce Weinsheimer in CETL at  
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# Vista or Sakai: Which Will be Georgia Tech's next Course Management System?

by **James D. Foley, Ph.D.**

Professor and Stephen Fleming Chair in Telecommunications

College of Computing

School of Electrical and Computer Engineering

**james.foley@cc.gatech.edu**

WebCT-Campus Edition (WebCT for short) is Georgia Tech's current Course Management System (CMS). Support for WebCT from its provider, Blackboard Inc., will cease at the end of 2007 – just 15 months from now.

Vice Provost for Undergraduate Studies and Academic Affairs Andy Smith has formed a committee to recommend which of two CMSs – Vista or Sakai – should replace WebCT as our next CMS. Committee membership is listed at the end of this article.

Vista is the successor to WebCT-CE. It is provided to Georgia Tech via the Board of Regent's state-wide license with Blackboard, and is used at most other University System of Georgia schools, including UGA and Georgia State – as well as at many schools around the world. Vista is in some ways better than WebCT; being built on a relational data base rather than on a multitude of flat files. Vista and Blackboard are two of the major products of Blackboard Inc. (which recently purchased WebCT).

You can learn more about WebCT Vista at

[http://www.webct.com/products/viewpage?name=products\\_vista](http://www.webct.com/products/viewpage?name=products_vista).

If you want to use Vista, send a message to Kevin Pittman <kevin.pittman@oit.gatech.edu> and he will set up an account for you.

Sakai is open source software developed originally at the University of Michigan in collaboration with Indiana University, Stanford University and The University of California at Berkeley, and with multi-million dollar foundation support. It is now managed by the Sakai Foundation and is in regular use at



over 20 schools where it supports hundreds of thousands of students. Sakai is also supported by several companies, much as Red Hat supports open source Linux.

You can learn more about Sakai at <http://sakaiproject.org/>. You can use Sakai, either in the role of a faculty member or of a student, at <http://sakai.gatech.edu>.

Login as a faculty member with user name `gtfaculty@gatech.edu` and password “password”, or as a student with user name `gtstudent@gatech.edu`, and password of “password”.

The committee has been studying and comparing Sakai and Vista on criteria that include:

- How well each CMS can be used to help Georgia Tech achieve our strategic plan goals in educational technology – to strengthen our

position and profile as a leader in educational technology research and use, to enhance the educational experience of students enrolled inside and outside the Atlanta campus, and to make life-long learning accessible to alumni and professionals around the world.

- Ability to serve multiple purposes well – not just the traditional class-oriented uses supported by WebCT for schedules, homework distribution and submission, discussion forums, and resource posting – but also for activities outside the classroom – such as for

***“One very striking factor has emerged from our discussions with other schools: Georgia Tech is seriously underinvested in the support of our current course management system: slightly over one full-time equivalent positions are responsible for technical support of WebCT in OIT, and one full-time equivalent position in CETL provides support to faculty and students in their use of Web CT. Other schools . . . invest several times this number of staff members in course management systems support.”***

student and research group coordination and collaboration, faculty committee coordination, hiring, accreditation, promotion and tenure, development of student portfolios, wikis, multipoint audio and video for distance learning, shared whiteboards, and other forms of computer-supported collaborative learning and computer-supported collaborative work.



- Ability to support a variety of large course structures, such as one lecture section with multiple recitation sections or even multiple lecture sections with multiple recitation sections, each with students from more than one lecture section.
- Flexibility and extensibility.
- Usability by Faculty & Students – ease of learning and use are essential to widespread adoption.
- Enterprise Deployment Readiness – all the factors that are necessary for 24x7 software operation – security, reliability, maintainability.
- Support for evolving standards within the educational technology community, to support the easy exchange of educational materials and rapid aggregation of materials into a course.
- Effort required for moving WebCT course material to Vista or to Sakai.

The committee has been meeting nearly weekly since late July. We have heard presentations by senior representatives of the Sakai Foundation and Blackboard, Inc. We have had phone and/or email exchanges with at least a dozen schools using Sakai or Vista to gather more understanding of the two systems' pros and cons. Several faculty members have been using either Sakai or Vista over the summer and during this semester on a pilot basis, to get hands-on experience with both systems. The committee devoted one meeting to hearing about their experiences.

The committee has also reviewed the 2005 *Report of the Subcommittee on Learning Management Systems to the Academic Technologies Advisory Committee*.

During the early part of October we will be formulating our recommendations for Vice-Provost Smith, and

## Instructional Technology

will present him with our conclusions in late October. We will also be recommending management structures and processes to ensure that Georgia Tech can gain maximum benefit from whichever CMS is adopted.

While it is premature to discuss our thinking or conclusions, one very striking factor has emerged from our discussions with other schools: Georgia Tech is seriously under-invested in the support of our current course management system. Slightly over one full-time equivalent professionals are responsible for technical support of WebCT in the Office of Information Technologies, and one full-time equivalent staff member in the Center for the Enhancement of Teaching and Learning provides support to faculty and students in their use of WebCT. Other schools, such as Virginia Tech, Michigan, UGA, Berkeley and Yale invest several times this number of staff members in CMS support. The committee will be recommending greatly-increased staff support for our current and next CMS!

Whichever way we go, there will be a lot of work to transition away from WebCT by January 2007. The transition will likely be staged, with a small number of courses moving to the new system as soon as January, with more making the transition over the summer

and next fall. The balance of courses will move in January. During the three terms of 2006, about 25% of our courses used WebCT, and about 70% of our students used WebCT for at least one course each semester. The transition will thus affect many students and many faculty. The goal will be to make the transition as painless as possible. ■

If you have experience with and opinions about either Sakai or Vista, the committee is eager to hear from you:

### Course Management System Study Committee:

Nelson Baker	nelson.baker@dlpe.gatech.edu
Huapei Chen	huapei.chen@oit.gatech.edu
Jim Foley (chair)	foley@cc.gatech.edu
Joel Jackson	joel.jackson@ece.gatech.edu
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*continued from page one*

And, Dr. Steven Girardot provides some short book blurbs of a few new arrivals to the CETL library. Just as staying current in one's research field is vital for being a good researcher, staying current in the educational field is vital for us to help you to be good teachers. Our library is a lending library and all members of the Tech community are welcome to come by to browse or check out a book.

And, we include an excerpt from an essay by Dr. Michele Marincovich of Stanford University and Dr. Jack Prostko of the University of Maryland about how the context or discipline affects the definition of effective teaching. The complete version of this essay along with many other interesting and provocative essays about teaching and learning published by the Professional and Organizational Development Network in Higher Education (POD) are available in the CETL office -- just e-mail us to request a copy or come by to peruse the collection.

So, with over 900 faculty here at Georgia Tech, there are surely at least 1000 definitions of good teaching. We look forward to exploring some of these with you in the coming year. ■

# In the CETL Library

## New Additions to the CETL Library: Perfect Holiday Reading Material

by **Steven P. Girardot, Ph.D., MPH**  
Academic Professional, CETL

**[steven.girardot@cetl.gatech.edu](mailto:steven.girardot@cetl.gatech.edu)**

Now that the weather has grown cooler, the semester is winding down, and the holidays are approaching, it's a great time to reflect on your teaching and to get reenergized for spring semester. To help you get some new ideas and to add to your repertoire of teaching strategies, we have added some new additions to the CETL library - perfect reading material to peruse while you enjoy your morning cup of coffee!

A few of these new additions are featured here, and each is available for you to check out at any time by simply contacting CETL. In addition, if there are any special requests for books that you would like to see added to our library, please do not hesitate to ask us to obtain a copy. We also welcome requests for books to be reviewed in future editions of *The Classroom*.

*Teaching at Georgia Tech: A Handbook for Faculty, Instructors and Teaching Assistant*  
*Produced by the Center for the Enhancement of Teaching and Learning (CETL)*

We would be remiss if we did not mention CETL's new publication- *Teaching at Georgia Tech*! This handbook is the first thorough compilation of policies, resources, and advice related to our instructional mission. Although it was produced by CETL, faculty, administrators, and students from across the campus contributed to its creation by submitting ideas, writing articles, and reviewing the content. It is our hope that this will be a frequently-used reference to support your teaching and instructional work. It is conveniently available both in print and electronic formats for all members of the Tech community to access- so please help us promote this new resource! To request a free print copy, please contact CETL, and to download or view the electronic version, please visit our website ([www.cetl.gatech.edu](http://www.cetl.gatech.edu)). We intend for this handbook to grow in both scope and size in future additions, so please let us know what we can improve on or add to the second edition.

*Dilemmas in Teaching: Cases for Collaborative Faculty Reflection*  
*Produced by the Collaboration for the Advancement of College Teaching & Learning*

This compilation of case studies related to teaching, learning, and faculty development is a "captstone publication of a six-year project to promote more open dialogue about college teaching" by the Collaboration for the Advancement of College Teaching & learning – an alliance of colleges and universities that supports and promotes outstanding college teaching (1). A typical case study describes an "actual or very realistic situation to

which participants can relate” and is designed to generate rich discussion about the issues raised in the scenario and the methods that may be used to address the issue. The book contains 29 cases which span topics such as getting students to think critically, grade expectations, the unpopular senior professor, classroom incivility, sexual harassment, academic freedom, and working with students with disabilities. Whether reading them on your own, with other colleagues, or at a faculty meeting - the cases are certain to spark lively discussion, debate, and self-reflection.

*Teaching Actively: Eight Steps and 32 Strategies to Spark Learning in Any Classroom*  
By Mel Silberman

Silberman begins this book with the simple statement, “It’s not what you tell your students that counts. What counts is what they take away from the classroom. The more you tell them the more they forget” (vii). If you have ever wondered how to get your students to participate more in class, ask (good) questions, or become more engaged in the material- this is the perfect book for you. It offers a variety of practical and easy-to-implement strategies that will work in a class of 20 or a class of 200 - whether it’s General Chemistry, Calculus III, Intro to U.S. History, an advanced graduate seminar - or even a lab course.

*My Freshman Year: What a Professor Learned by Becoming a Student*  
By Rebekah Nathan

Have you ever wondered what it might be like to go back to college as a freshman? Or, have you ever thought that you are completely out of touch with the current generation of students? Rebekah Nathan, the pseudonym for a cultural anthropology professor (who was later been “outed” as Cathy Small at Northern Arizona University) took these musings to an entirely different level. Nathan took her sabbatical, enrolled in her own university as a freshman, and conducted (an IRB-approved!) anthropological study of contemporary college life. The book offers an engaging look inside both academic and student affairs in higher education.

*I’m the Teacher, You’re the Student: A Semester in the University Classroom*  
By Patrick Allitt

Across town at Emory University, Patrick Allitt, a Professor of History and Director for Emory’s Center for Teaching and Curriculum, has written a first-person account chronicling what it is like to be a college professor in today’s classroom. The book, which bills itself as “part diary, part sustained reflection” has something to offer for anyone who has ever taught in an Americana college classroom. For example, a chapter titled “*Long Dry Spouts and Levels Unheard Of*” offers particularly entertaining samples of student writing: “*Many did not survive the harsh journey west, but they still trekked on*” (139). Although Allitt’s wit and sense of humor are prevalent throughout the book (not novel), his genuine care for his students and concern about the quality of higher education are even more apparent.

*Teaching Excellence: Towards the Best in the Academy*  
*A Publication of the Professional and Organizational Development (POD) Network*

*Teaching Excellence* is a compilation of short, 2-3 page articles on a variety of topics related to college teaching. These articles typically compile some of the leading theories, strategies, and tips related to each topic. Examples include: Cooperative/Collaborative/Small Group Learning, Critical Thinking, Diversity Issues, Motivating Students, and Evaluating and Grading Issues. As a subscriber, CETL has an archive of the publication's articles to distribute to faculty and TAs. A complete list of articles is included in the *Teaching at Georgia Tech* handbook. Feel free to contact CETL for copies of any articles you would like - we will be happy to have one sent to you!

*The Missing Professor: An Academic Mystery*  
By Thomas B. Jones

This book is a compilation of informal faculty development case studies set against the backdrop of a mystery story involving a senior faculty member who suddenly vanishes at the beginning of the semester. The main character - Nicole Adams - is a new Ph.D in philosophy who takes her first position as an assistant professor at Higher State U. The book attempts to address issues such as dealing with the first day of class, student incivility, academic politics, tenure and promotion- and even the academic bill of rights. However, the issues are often a bit forced into the story, and the mystery may not quite be on the level of a *CSI* plot. In general, this book is probably more appropriate for advanced graduate students thinking of faculty careers rather than current Tech faculty. However, it makes for a quick and interesting read! ■

The CETL Library is located in the CETL Conference Room, Ground Floor of the Administration Building, Room 17. Contact Clint Lyle at 404 894 4474 or [clint.lyle@cetl.gatech.edu](mailto:clint.lyle@cetl.gatech.edu) for access.

# Upcoming Events

## Faculty Development Seminars

<b>November 16</b>	<b>Linking Graduate Research with Undergraduate Education</b> David Lynn, Emory University Karen Harwell, Georgia Tech
<b>January 18</b>	<b>Making It Possible for Grades to Promote Learning</b>
<b>February 27</b>	<b>Workshop on Problem-Based Learning Methodology</b> Anette Kolmos of Aalborg University, Denmark

## Other Events

<b>January 23</b>	<b>Mentoring Undergraduate Researchers</b> Co-Sponsored by Undergraduate Research Opportunities Program (UROP) and CETL
<b>March 13</b>	<b>Celebrating Teaching Day</b>
<b>March (day TBD)</b>	<b>Outstanding Teaching Assistant Awards Banquet</b>
<b>April 11</b>	<b>Faculty/Staff Honors Luncheon</b>
<b>April 17</b>	<b>Student Honors Luncheon</b>

*For more information on these and other events, please visit the CETL website at [www.cetl.gatech.edu](http://www.cetl.gatech.edu) and click on News and Events.*

## The Classroom

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