

The Classroom

Center for the
Enhancement of
Teaching &
Learning

The Newsletter For Teaching and Learning at Georgia Tech

Spring 2007

Contents

Leading in Undergraduate Education by Dr. Donna Llewellyn	1
The Classroom Interview S. Gordon Moore, Jr.	2
Announcement: Celebrating Teaching Day	7
Good Teaching at Georgia Tech A Profile of Kirk Bowman by Dr. Joyce Weinsheimer	8
The Vice Provost Undergraduate Advisory Board by Caroline M. Mahoney	12
New Initiatives in Engineering Education by Dr. Tristan T. Utschig	14
In the CETL Library A Book Review by Dr. Tristan T. Utschig	17
Spring 2007 Events	20

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Leading in Undergraduate Education

by Donna C. Llewellyn, Ph.D.
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In this issue of *The Classroom*, we look at how Georgia Tech is a leader in undergraduate education. This includes an interview with an award-winning administrator, a profile of an award-winning teacher, and planning grants in the College of Engineering for new and exciting curricular developments.

Since we are the Georgia Institute of TECHNOLOGY, we should expect that the support of educational technology assists in these worthy efforts. This year, the Institute has taken a bold move to ensure that this is true now and in the future. With the impending end of our license for WebCT CE (the current centrally supported course management system), the decision was made to move to Sakai rather than upgrading to the next edition of WebCT (Vista). This decision was a result of a committee's study and research during the summer (see the article in the Fall 2006 *The Classroom* by Jim Foley). We are very excited about the opportunity that this move will afford us – it will enable lots of collaboration and innovation. Of course, we expect that there will be some bumps in the road and there might be some pain as we make this transition. However, the potential is so enormous that we hope you will all be patient and help us make this transition as smoothly as we can. There are lots of questions out there; here are the answers to the main ones that we have heard so far:

First of all, what is Sakai and why does it have that name?

Sakai is an open-source collaborative platform that was initially developed at the University of Michigan. It was based on an earlier endeavor whose name was "Chef." Sakai is name of one of the original chefs in Japan from the TV show "Iron Chef." There is a large international community that supports the development and innovation of Sakai. The goal is for Georgia Tech to become a major leader in that

continued on page 6

An Interview with the Recipient of the
2007 National Society of Black Engineers
Golden Torch Award

S. Gordon Moore, Jr.

Managing Partner and Director
Office of Minority Educational Development

Mr. S. Gordon Moore, Jr. currently serves as the Managing Partner and Director of Georgia Institute of Technology's Office of Minority Educational Development (OMED) in Atlanta, Georgia. Under his leadership, OMED has been recognized as a model program throughout the nation. New York Times, Washington Post, USA Today, and Diverse Issues in Higher Education are just a few of the publications that have written about his office. He has spoken at universities throughout the nation, national conventions and national board meetings on the issues ranging from minority retention and performance to pre-college initiatives to academic support and summer bridge programs.

In addition to his staff role at Georgia Tech, Mr. Moore serves on the General Faculty Assembly, the NCAA Certification Committee, and the ADAPTS (Access Disabled Assistance Program for Tech Students) Advisory Board at Georgia Tech. He recently completed his term as a member of the Board of Trustees and Chair of the Fundraising Committee for the Georgia Tech Alumni Association.

Mr. Moore has received both a Bachelor of Science in Management and a Master of Science in Management (MSM) from the Georgia Institute of Technology. His concentrations are in Marketing, Marketing Research and Organizational Behavior. He has also completed the Management Development Program (MDP) at Harvard University and the Management Development Certificate at the Georgia Institute of Technology. He is currently pursuing a Doctor of Education (Ed.D.) degree at Nova Southeastern University (NSU).

Mr. Moore is the 2007 recipient of the National Society of Black Engineers' Golden Torch Award (GTA) for Minority Engineering Program Director of the Year. He has received various keynote, guest, workshop, program and event speaking honors. Mr. Moore has traveled to Africa where he had the distinguished honor of attending a reception at the home of Nelson Mandela. He is an educational consultant and has served on a number of search committees and national task forces. Mr. Moore has served as a certified youth league basketball and baseball coach, serves as a mentor, and is a member of Kappa Alpha Psi Fraternity, Incorporated, a lifetime member of both the National Black MBA Association (NBMBA), and the National Society of Black Engineers (NSBE). In addition, he currently sits on the National Advisory Board (NAB) for NSBE.

Gordon dedicates most of his time and energy to community development, youth initiatives, educational access, minority issues and economic understanding. He loves traveling, sports, music and playing cards. ■

Q: Tell us about your position here at Georgia Tech. How long have you been here?

Moore: I am the Managing Partner & Director of OMED (the minority educational development office) at Georgia Tech. OMED is the GT unit in the Provost's Office, charged with the academic performance and retention of students who are traditionally underrepresented (African American, Hispanic and Native American). However, our programs are open to all GT students. The Managing Partner title came about as a result of a 1993 decision to pattern the organization chart in a "law firm" style format. This new structure allowed the staff (Partners and Associate Partners) to work as an equal team of peers in the workplace.

“ . . . the transition from ‘high school seniors’ to ‘college freshmen’ is the greatest challenge that new undergraduates face at first . . . One minute they are at the top of the social ladder . . . and the next they are at the bottom of the social pecking order . . . ”

S. Gordon Moore, Jr.

I have been at Georgia Tech for over 18 years now. I began as an undergraduate student in 1987, graduated with my BS in Management in 1992, became a full-time employee in 1993, received my MS in Management in 1997, and assumed my current position in OMED in 1998. An interesting fact about me is that at one point in time (1993-1997) I was a GT alum, student and employee at the same time.

Q: What does your position aim to accomplish?

Moore: The aim of my position is to assist Georgia Tech in its goal to be a truly diverse institution, where all of its students excel academically and professionally, and the playing field is level. Positions like mine are ultimately designed to ensure that our high quality students are not lost due to non-academic reasons (social adjustments, lack of environmental knowledge, generation gaps, etc.).

Q: How does your role at Georgia Tech augment good teaching and foster student learning?

Moore: My role promotes the development of the complete student learner. I make sure that students are full participants in their education, including inside the classroom. Students must have confidence in their background and ability in order to truly take advantage of their educational opportunities. The efforts of my office ensure this is the case. Our students are better learners, and better learners are the ultimate supplement to good teaching. I strongly believe that good teachers and good students in the same classroom feed off of one another. They make each other better and enhance each other's experiences. I also provide professors with insights about their students and opportunities to interact with them. In addition, my role is to assist in the elimination of the myths and stereotypes that students have about professors, and vice versa.

continued next page

Q: *How would you define “learning”?*

Moore: Learning is the ability to process, interpret and acquire skills and/or knowledge via study and experience. It is the cornerstone to personal development and maturity.

Q: *What is the biggest challenge that new undergraduates face when they first arrive at Georgia Tech?*

Moore: In my experience, the transition from ‘high school seniors’ to ‘college freshmen’ is the greatest challenge that new undergraduates face at first. Most students believe that there is a natural transition from high school to college. If that were truly the case, then we would call your first year in college the 13th grade. This transition is especially difficult at an institution like Georgia Tech. In addition to the academic adjustments, the emotional adjustments can be the most challenging for a freshman. One minute they are at the top of the social ladder (as high school seniors), and the next they are at the bottom of the social pecking order (college freshman). If students are not socialized quickly then the impact of this adjustment can affect all other areas of their collegiate experience (including academic).

Q: *To help students succeed, what is the one thing you’d most want them to understand?*

Moore: They must understand that this part of the journey is on them. They must embrace this phase of their life fully; with passion, determination, discipline and faith. The effort and energy they apply now will impact the rest of their life. The trick is to get this across without putting all the weight on their shoulders that can come with such a message. In other words they must be the masters of their fate, and it begins the day they step on the campus.

“Students should determine their personal success by their ‘academic resume’. This is more that what is on their transcript or grade report . . . Did they get international, work, and/or research experiences? Did they join organizations? Did they participate in developmental workshops, symposiums, programs and/or activities? ... Did they gain insight into what they want to do long-term?”

S. Gordon Moore, Jr.

Q: *What is a student’s biggest responsibility in pursuit of an education at Georgia Tech?*

Moore: Study, study and study! Study everything! Be a sponge and take it all in, as much as they can. There are all kinds of programs, initiatives and offices

Q&A

here to assist a student in their pursuit of knowledge. However, it is the student that must take advantage of these resources and ultimately decide how to use them successfully.

Q: *Students often view getting top grades as success. What other things should students consider in determining their own success?*

Moore: Students should determine their personal success by their “academic resume”. This is more than what is on their transcript or grade report. The academic resume consists of their grades, experiences, accomplishments, leadership, etc. Did they get international, work and/or research experiences? Did they join organizations? Did they participate in developmental workshops, symposiums, programs and/or activities? Did they truly gain and learn from the classroom? Did they gain insight in what they want to do long-term? These are just some of the questions that determine success. The answers make up the student’s academic resume. At the end of the day the ultimate question is, “Do you know more now than you did yesterday, and are you closer to where you want to be than you were yesterday?”

Q: *Tell us about how you, as a student, were taught. Did you have teachers who inspired and encouraged you?*

Moore: I had a couple of professors that did inspire me in school. It is safe to say that without these few, I would not have made it in college. Inspiration and support from a few friends was also critical to my

success. I was a student who performed best when the professor was interactive and engaging in the classroom. My grades literally corresponded to how the professor taught. Good teaching was critical to my success.

Q: *What has been the high point of your experience here at Georgia Tech?*

Moore: Hands down, the high point of my GT experience was being selected to lead OMED. I have been able to continue the great work of my predecessors and further our mission, one that I believe is critical not only at Georgia Tech, but nationally. Many institutions throughout the nation have been trying to replicate what we do. Not a term goes by that I am not asked to assist in the development of an office or program like ours. Most importantly, working with these talented students and helping them reach their goals is truly reaffirming. ■

continued from page one

community! There has been a contest on campus for us to come up with the name for our instance of Sakai – stay tuned and check the CETL web site (<http://www.cetl.gatech.edu>) for the news of the winners of that contest.

What is our timeline at Georgia Tech for the adoption of Sakai?

We are in a very fast implementation phase right now, with the assistance of an outside vendor, Unicon. The expectation is that our version will be up and operational by the end of April (yes, this April). We will run a large pilot during Summer 2007 to learn more about the platform, and then it will be fully in place for Fall 2007. In Spring 2007, WebCT will no longer be working on our campus and Sakai will be THE centrally supported learning management system.

What is different about Sakai that made it the right choice for Georgia Tech?

One main difference about Sakai is that it is not really a course management system. It is a platform that allows for online collaboration through discussion fora, chats, wikis, sharing of resources, e-mail, etc. On top of this there are some course management tools like homework drop boxes, online quizzing and testing, a gradebook, etc. We envision the same platform to be used by classes, committees, design teams, and research teams. The other major difference is that Sakai is open-source. This means that we have full access to the source code and we can change it, add to it, and tweak it to suit our needs – we no longer have to be dependent on a for-profit company to fulfill our requirements. Of course, there will be a process to ensure that all of that innovation and all of those changes/additions are secure, stable, robust, and in general can be supported.

How will I access Sakai?

Once we are up and running, the URL will be announced and disseminated widely. You will log on with your GTAccount (the same thing you use for spectrum mail and buzzport) and its accompanying password. You will automatically have an account just by having a GTAccount. Starting in Fall 2007, all classes will automatically be loaded from banner (like they are loaded in WebCT now), so you will be all set to go!

Who will be supporting Sakai on campus and how do I get help?

We are in the process of recruiting people to be on a Sakai support team. We already have two instructional technology consultants in CETL (Chaohua Ou and Stephen Rehberg) available to assist with the use of Sakai and with the migration of WebCT to Sakai. In addition, we will be hiring Java developers to help with the software development. Further, we are looking to hire into a new position, the Director of Educational Technology, to lead this effort and our other instructional technology initiatives.

One nice thing about Sakai is that you will be able to create your own project and course sites. So, you can start working on a course before it is ever loaded into banner. There will be tools available to then migrate that site over to the “official” course site once it is loaded from banner.

Don't worry if some of this sounds confusing at this time – we will provide lots of assistance to anyone who needs it. Please feel free to contact CETLhelp@gatech.edu if you have any questions about Sakai that haven't been answered here and we will make sure that they are answered in a timely manner, and added to our FAQ for everyone. ■

Announcement

Celebrating Teaching Day

at Georgia Institute of Technology

sponsored by the
Center for the Enhancement of Teaching and Learning

March 13, 2007

Student Center Ballroom

11:00 **Resource Fair and Poster Display**

11:30 **Luncheon Seminar:
Promoting Learning through Student-to-Student Interaction**

Facilitated by **Karl A. Smith**, Cooperative Learning Professor of Engineering Education at Purdue University and Morse-Alumni Distinguished Teaching Professor and Professor of Civil Engineering at the University of Minnesota

1:00 **Resource Fair and Poster Display**

1:30 **Concurrent Workshops:**

- **Using Technology to Improve Student Learning**
- **Teaching Large Classes**
- **Making A Difference with GT Students**

*For descriptions of the sessions
and registration materials,
go to
<http://www.cetl.gatech.edu>*

Good Teaching at Georgia Tech

A Profile of Kirk Bowman

by **Joyce Weinsheimer, Ed.D.**
Assistant Director for Faculty Development, CETL

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Kirk Bowman is an associate professor in the Sam Nunn School of International Affairs whose teaching in comparative politics, Latin American politics, and empirical methods is getting noticed. His approach to teaching is innovative: he teaches Latin American Politics in Spanish as part of the Language-Across-the-Curriculum Program, holds discussions between Georgia Tech students and their counterparts in Latin America over the internet, and uses desktop film-making in instruction. He is a recipient of the campus-wide CETL/BP Junior Faculty Teaching Excellence Award (2000) and a recipient of the Roe Stamps Outstanding Teaching Award (2002), the highest teaching award in the Ivan Allen College. Recently Georgia Tech nominated Kirk Bowman for the Robert Foster Cherry Award for Great Teaching, a national award that honors outstanding teachers who have a positive, inspiring and long-lasting impact on students.

What is it about Bowman's teaching that makes it stand out and catch the attention of award committees? What, exactly, does Bowman do to help his students learn? Here are some elements of Bowman's approach that are producing great results as he works with Georgia Tech students.

Linking the Classroom and the World

Kirk Bowman's doctorate is in the field of Comparative Politics, and he makes "comparing" the cornerstone of his professional life and of his teaching philosophy. In order to make the comparisons he teaches palpable to his students, Bowman brings the world into the classroom and he takes the classroom into the world. Since first coming to Georgia Tech in 1998, Bowman has taught students in the plazas of Havana, Cuba, the soccer stadiums of Buenos Aires, Argentina, the rain forest of Costa Rica, and the favelas of São Paulo, Brazil. He has led ten extensive study abroad programs in eight years.

When teaching on the Georgia Tech campus, Dr. Bowman facilitates a diverse array of courses (general education core courses, undergraduate elective offerings, graduate seminars) for a variety of student populations (undergraduates and graduate students, majors and non-majors). Whether these classes contain 200 students or 20, Bowman brings the sounds, smells, and wonders of the world onto the campus. In Latin American politics, for instance, he asks the class to examine the relationship between the tango and the politics in Argentina or the relationship between the Bossa Nova and the protest in Brazil. In addition, he incorporates the many film festivals, food festivals, cultural events, and lectures that occur in Atlanta into his courses. He illustrates points in his lectures by connecting to websites showing current polls or by showing a video of a speech given by a

world leader. With the goal of engaging his students, Bowman uses these multiple methods to help his students create connections and construct a deep understanding of the concepts they are studying

Sharing A Love of the Subject with Students

William Long, Chair and Professor in Kirk Bowman's department, says Bowman is "a highly gifted teacher with an infectious enthusiasm for his subject and a deep concern for the welfare of his students." Jody Robert Shaw, a former student who credits Bowman with being "the most gifted educator" that he encountered in his university studies, definitely agrees. He says that Bowman has an "uncanny ability to convey his own passion for knowledge and create an environment that allows each student to find his own interest in the material." And apparently Kirk

Whether his classes contain 200 students or 20, Dr. Bowman brings the sounds, smells and wonders of the world onto the campus. In Latin American politics, for instance, he asks the class to examine the relationship between the tango and the politics in Argentina or the relationship between the Bossa Nova and the protest in Brazil.

Bowman's students do get interested. James Cook, an electrical engineering student who supported Bowman's nomination for a teaching award, says that what distinguishes Dr. Bowman from the typical professor is that "he lives and breathes what he teaches." Indeed, James Cook says that he was so influenced by Kirk Bowman's teaching that he changed fields upon receiving his engineering degree; as a result, James is currently a student in Cornell University's Johnson Graduate School of Management.

Bowman wants students to feel that comparison and scholarship are exciting and rewarding, and one way he accomplishes this is by making himself accessible to them—both during class and after. One student commented: "His method of teaching is such that students feel that they are personally discovering whatever it is that they are learning, not merely memorizing the work of someone else." And students say that it's evident that Bowman cares about their learning. Even when the class size exceeds seventy-five students, he holds office hours in the campus coffee shop and talks one-on-one with them about class concepts. When the course involves a major research paper, Bowman meets with each student individually to help shape the project—and often this meeting can last more than an hour.

Requiring Students to Learn Thoughtfully and Responsibly

Kirk Bowman says that his teaching maxim comes from the German comparativist and sociologist, Max Weber. Weber stated that "The primary task of a

useful teacher is to teach his students to recognize inconvenient facts." While Social Science teachers should never attempt to shape the personal beliefs of students, they should teach students to critically

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evaluate the views and opinions that they have and to challenge conventional wisdom. So Bowman constantly challenges his students to think about power and the creation of norms and opinions. Through this process, he works to help his students become life-long learners, full citizens of their countries, and empathetic with those with whom they disagree.

One of Bowman's students helps us picture what this might look like: "In the classroom, Kirk is emblematic of the Socratic gadfly who forces his students to reconsider whatever political opinions they have so that at the end of the conversation they are in a position to better understand why they believe what they do." Another student who has taken several international affairs classes with Bowman comments on the style of analysis that Bowman's students develop: "While no one regurgitates his opinions or conclusions, I notice that students who

have attended his classes organize their thoughts differently and use a higher framework of analysis than their peers. Dr. Bowman not only teaches important elements of research design and analysis, but he communicates these elements so effectively that students use what they learn in his class in their other coursework and beyond."

Helping Students Excel

The impact of Bowman's teaching often goes far beyond the confines of the classroom and the course curriculum. For example, Jeremy Farris, who is at Oxford on the Rhodes Scholarship this year, participated in Bowman's Business and Politics in Argentina and Brazil Study Abroad Program in 2001. Jeremy used this course as a launching point for producing a documentary on indigenous peoples in Argentina,

Kirk Bowman says that his teaching maxim comes from the German comparativist and sociologist, Max Weber. Weber stated that "The primary task of a useful teacher is to teach his students to recognize inconvenient facts." . . . Bowman constantly challenges his students to think about power and the creation of norms and opinions.

conducting research on democratization in Cuba, and working on reforestation issues in Guatemala. In a letter he submitted to support Bowman's nomination for a teaching award, Jeremy credits Bowman with "providing not only the catalyst but also the substance for much of my undergraduate education." He writes about the practical, transferable skills that Bowman

inspired him to develop, such as learning to speak Spanish. Even more important, Jeremy says, “Kirk conveyed to me a skill that is so subtle, so transferable, and so important for life: how to conduct myself abroad. In the course of several excursions abroad, Kirk communicated through example how to cleanse one’s assumptions of arrogance while fostering a spirit of inquisitiveness.”

Contributing to the Bigger Picture

Kirk Bowman’s influence with students extends beyond his own classroom. Since joining the Sam Nunn School of International Affairs, Bowman has established three innovative, interdisciplinary study abroad programs: Business and Politics in Argentina and Brazil Study Abroad program, the Costa Rica Study Abroad Program, and Cuba at the Crossroads. Open to international affairs majors as well as students from a range of disciplines, these initiatives have broadened the horizons of thousands of students. Most recently, Kirk Bowman made a significant campus contribution once again by founding Georgia Tech’s International House, a living-learning community of 40 American and international students. Serving as the faculty mentor and program coordinator for the International House, Bowman is working to provide a co-curricular learning environment that promotes international understanding and cross-cultural awareness among our students.

As we consider the many approaches to teaching at Georgia Tech that are making an impact on this campus, Kirk Bowman’s is one that is definitely worth noting. His colleagues cite him as an extraordinary individual “who provides guidance and inspiration to his students.” He is an “enthusiastic, provocative teacher who motivates students to think about the central issues and perplexing questions.” Students agree: they highlight how Bowman “provides challenge and support,” “ensures a proper balance of the serious anecdote with the silly,” and teaches them “how to learn continuously.” His college dean confirms that “his numerous teaching awards, student surveys and peer evaluations all attest to his virtuosity in the classroom and as a student mentor.” Clearly Kirk Bowman and his teaching are making a difference at Georgia Tech. ■

If you’d like to contribute to these “snapshots” we’re creating of good teaching at Georgia Tech, please contact Dr. Joyce Weinsheimer, Assistant Director of CETL for Faculty Development, at joyce.weinsheimer@cetl.gatech.edu

The Vice Provost Undergraduate Advisory Board

by **Caroline M. Mahoney**
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In the Spring of 2006, Dr. Anderson Smith, as the newly appointed Vice Provost for Undergraduate Studies and Academic Affairs, had the opportunity to attend the annual Student Leader Retreat. At this meeting, he presented the current Institute initiatives and welcomed questions and feedback from the undergraduate student leaders who were in attendance. One initiative that brought about a lively discussion was the new Honors Program that was to begin in the Fall of 2006. It is no secret that Georgia Tech students are passionate about the Institute and changes that may affect them. With the many adjustments that the new Honors Program would bring to campus, the students questioned the program and brought up points that they felt had been overlooked. These student leaders felt it was their duty to ensure that this program was of the highest caliber.

Following the retreat, a group of concerned students approached Dr. Smith about their apprehensions regarding the proposed Honors Program. These students were concerned by the lack of undergraduate student input into many of the discussions regarding large institutional changes. Each section of campus, they felt, offered a unique perspective on the impact of a large change and it is important that all groups be included in these discussions. Dr. Smith welcomed the feedback of the group and invited them to help him create an outlet for increased student input in future endeavors. From these discussions between student leaders and Dr. Smith, the Vice Provost Undergraduate Advisory Board was formed.

The purpose of the Vice Provost Undergraduate Advisory Board is *to act as a resource for the Vice*

Provost of Academic Affairs from which undergraduate student opinion can be attained. The Board shall act as a stable and diverse representation of the student body. The Board consists of six to eight members of the current undergraduate student body, in addition to the Vice Provost for Undergraduate Studies & Academic Affairs. Half of the members of this Board are appointed by the Undergraduate Student Government President and the remaining members consist of a diverse group of students selected through both an application and an interview process. Board member terms last one year, but there is no term limit. Current and former members of SGA's representation to the Board include David Andersen, Bobby Beaulieu, and Mary Clark. The other student members of the Board are Bryan Hollaway, Caroline Mahoney, and Bart Stout. The Vice Provost serves as chair of this committee, but there is no hierarchy among the student members. Board members are expected to be able to discuss a variety of topics and have a deep understanding of the important concerns and issues relating to the undergraduate educational experience at Georgia Tech.

Throughout the past year, the Board has discussed many issues raised by both Dr. Smith and the student members. Some overarching topics for discussion have included student policies, ideas for campus improvements, and concerns about current campus issues. The Board is able to give Dr. Smith feedback from the undergraduate student perspective on these topics and identify possible shortfalls in the current systems.

Some areas of student policies which have been discussed include the Student Bill of Rights and the

Dead Week policy. Both of these policies exist to serve students, but Dr. Smith understands that the needs of undergraduates are constantly changing, so Board discussions focus on the validity of the current policies.

As a Board, we are also charged with identifying the current needs of the student body and communicating these needs to the Vice Provost. Our consultation and input with regards to the Summer Reading Program and Honors Program are two ways in which we feel we have positively impacted the undergraduate student experience.

A topic which has major implications for the entire campus is the change from WebCT to Sakai, which is planned for the near future. As a Board we are able to identify the shortcomings of the current system and discuss what undergraduates need from the Sakai system. Since this has been an ongoing discussion, like many of our other topics, we are able to discuss the new system outside of our monthly meetings with other current students to gain further feedback and insight.

One area of continual concern for the Institute is sophomore retention, better known as the sophomore slump. As a group, we were able to look at the actual retention data to give us a better idea of the characteristics of the students who leave Georgia Tech after their first year. From this we were able to discuss our thoughts on the reasons for their departure and work through possible changes to the undergraduate experience in hopes of increasing sophomore retention.

Additionally, the new leadership initiatives on campus, through both the Institute for Leadership and Entrepreneurship (ILE) and the Leadership Education and Development Program (LEAD), are new campus initiatives that positively impact the entire undergraduate experience. As a Board, we had the opportunity to learn more about both of these initiatives and gain a better understanding of their purpose. Additionally, we were also able to give feedback to the Vice Provost about these programs and identify any concerns from the undergraduate perspective.

Moving forward, the Vice Provost Undergraduate Advisory Board will continue to address issues affecting the undergraduate academic experience at Tech. The Board is much like a *two-way street*, in that both the undergraduate Board members and the Vice Provost bring topics of discussion to the meetings. As undergraduates, we are privy to feelings and concerns that may never make their way to the Vice Provost, but this Board helps to provide another venue in which this is possible. Additionally, being current undergraduates, we have a unique perspective which can not be provided to the Vice Provost by administrators or graduate students. The diversity of the Board members ensures that the Vice Provost is truly getting a cross section of campus opinion in order to gain a better understanding of our needs and the impact of his decisions.

The Vice Provost must make many difficult decisions about new and existing Institute policies. Dr. Smith recognizes the importance of gathering feedback from the groups that he represents and the groups who will be impacted by these changes. As undergraduates it is wonderful to have such an advocate to address our needs and concerns. The Vice Provost Undergraduate Advisory Board has been helpful to both the Vice Provost and the undergraduate student body by providing another means in which student opinion can be effectively communicated up the administrative ladder. ■

Planning Grant Summary: Leadership in Undergraduate Engineering Education

by **Tristan T. Utschig, Ph.D.**

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As we enter 2007 the College of Engineering is planning to move into 2008 with several new initiatives designed to continue Georgia Tech's record of national leadership in engineering education. Through the Office of the Dean in the College of Engineering, four planning grants have been funded in the area of Leadership in Undergraduate Engineering Education. These planning grants will be implemented beginning in Summer 2007 and will continue through the following academic year while final grant proposals are prepared. The timing of these planning grants happens to coincide with the 2008 ABET accreditation cycle for all Georgia Tech engineering programs and may well help Tech gain additional accommodation during the review. Here is a summary of a few ways Georgia Tech is helping to lead the forefront of engineering education.

Dr. Monson Hayes, Associate Director of GTS is leading The Concept Portfolio Initiative proposal. This proposal utilizes a well-structured system called

the Concept Portfolio Tool to support student learning. The tool couples rich problem solving environments for specific topics with concept maps and is "designed to help students learn how to solve problems, visualize and understand the relationships between concepts, and provide the instructor as well as the student with assessment of student learning." The tool will be used in COE core courses and will be continually updated to help instructors plan courses and assess new teaching methodologies. Built on best practices, theory, and previously developed tools, this proposal aims to deliver targeted feedback to students and instructors on key topics in core COE courses. Once the Concept Portfolio Tool design is completed in Summer 2007, faculty from each school in the College of Engineering will begin developing materials for the project during the following semester.

Dr. Amy Pritchett, David S. Lewis Associate Professor of Cognitive Engineering, is leading the Coherent Design of Engineering Education project proposal. "This project seeks to integrate and extend the many innovations recently established in engineering education, including educational technology and the learning sciences, into systematic, sustainable, and scalable

improvements to undergraduate education” through a coherent instructional design process. Once established, this process will be suitable for all faculty to use and implement according to their needs and will include a knowledge base and set of tools ready for easy, everyday use. “The emphasis is on creating the environment and resources in which faculty will be motivated, capable, and confident in applying fundamental research found via disparate, isolated studies in the learning sciences, engineering education practice, and educational technology.” The project thus aims to generate wide-spread use resulting in improved instructional learning practices accomplished in a cost-effective and time-effective manner.

Dr. Peter McGuire, Associate Deans of the Ivan Allen College, and Dr. Richard Barke, Professor in the School of Public Policy, have teamed up on a

Through the Office of the Dean in the College of Engineering, four planning grants have been funded in the area of Leadership in Undergraduate Engineering Education. These planning grants will be implemented beginning in Summer 2007 and will continue through the following academic year.

planning grant entitled “Engineering, Humanities, and Social Sciences.” This proposal will present “each of these disciplines as crucial and complementary ways of framing problems and showing students how to use a

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multidisciplinary perspective to understand the full complexity of a problem”. In this way, the current presentation of these disciplines as separate and unconnected can be reframed to more accurately mirror the world with its necessity to integrate multidisciplinary perspectives into engineering problem solutions. Furthermore, the curriculum components involved will “acquaint students with the basic epistemology and methodologies of several disciplines. The epistemology component would highlight different types of knowledge about the world while the methodological component would emphasize how problems are framed, how research is conducted, what kinds of evidence are considered valid, and how positions are argued.”

There are three major implementation components to this proposal. First, a combination of specified humanities and social science (HSS) courses as well as several engineering courses will be modified to contain learning modules helping students gain an understanding of multiple disciplinary approaches to problem definition and the formulation of solutions. Second, a set of new courses in *Problem Design* will be created to actively engage students in the operation and design of technosocial systems. Third, student work and reflections on their learning will be documented in an on-line portfolio demonstrating growth over their undergraduate career and serving as a tool to assess the program. Finally, tying this all together will be a new minor: Engineering and Society. The critical skills represented in this program are desired by industry, are incorporated within ABET accreditation criteria, and are reflected in the influential report *The Engineer of 2020* from the National Academy of Engineering. ■

In the CETL Library

Tools for Leading Transformational Change A Book Review

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Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses

L. Dee Fink

Jossey-Bass (2003)

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In 1995 Barr and Tagg¹ articulated the widely quoted concept that higher education is undergoing a shift from a *teaching paradigm* to a *learning paradigm*. Indeed, many of the individuals, units, and institutions that have made this shift have been achieving significantly improved results for student learning and have been leading higher education into the 21st century. L. Dee Fink's book on significant learning, published in 2003, begins with a discussion addressing the issues related to this paradigm shift and progresses to a specific twelve step methodology for designing or redesigning college courses centered around his proposed *taxonomy of significant learning*. He then extends his discussion to ways in which individual faculty might approach making the changes in teaching required to follow his model and, finally, outlines key supporting elements required of higher education at the national and institutional levels to support widespread adoption of such change. In light of the "leadership in undergraduate education" theme for this issue of *The Classroom*, this review will focus on exploring how Fink's work can be used as a tool to support and advance efforts in leading the transformation of higher education noted by Barr and Tagg.

The structure of the text is notable in that much of the book is devoted to creating a philosophical framework and set of principles to spark the reader into thinking about change at a holistic level encompassing more than just course design. The first two chapters – Creating Significant Learning Experiences and A Taxonomy of Significant Learning – outline in detail through sixty pages exactly what Fink means by the concept of "significant" learning. This philosophical approach, though well-written and convincing on many levels, often leaves the reader wondering when the book will get to the point and outline how to "do" something useful in making actual changes. The final three chapters – Changing the Way We Teach, Better Organization Support for Faculty, and The Human Significance of Good Teaching and Learning" continue in the philosophical mode. Fink is very clear

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in presenting his main points throughout these discussions through a multi-layered application of the old adage “tell ‘em what you’re gonna tell ‘em, tell ‘em, and tell ‘em what you told ‘em”. However, by the end of the book one is left feeling like the repetition unnecessarily extends the reading experience.

Fortunately, the central two chapters of the text, chapters three and four – Designing Significant Learning Experiences I: Getting Started, and Designing Significant Learning Experiences II: Shaping the Learning Experience – do provide much excellent discussion on Fink’s 12 step process for course design. This process is highly dependent on understanding the taxonomy of significant learning presented in chapter two. However, due to Fink’s somewhat repetitive style, they can serve adequately on their own for those who want to get going on the course design process without wading through the supporting philosophy. It is when Fink presents his ideas in tabular format that he most excels in producing useful tools for the reader. Steps one and two in the course design process are particularly well presented in this way. These two steps involve identifying the situational factors surrounding the course (size, level, physical environment, student preparation, etc) and articulating powerful learning goals for the course by utilizing Fink’s taxonomy of significant learning to present the goals in six areas: foundational knowledge, application, integration,

human dimension, caring, and learning how to learn. The tabular format to move through these two steps in the course design consists of a set of critical thinking questions for each step that are clear, easy to follow, and can produce quality results quickly. Because they are threaded throughout most of the subsequent steps and, indeed, most of the book, it is the use of the taxonomy of significant learning to produce the course learning goals in step two that forms the foundation for the rest of the course design. In my opinion, by themselves these two steps provide enough food for thought to create great potential for creating significant learning experiences for our students. This should not be surprising since these steps essentially echo the well-known concept of “backwards” course design developed by Grant Wiggins. Nonetheless, Fink’s presentation is clear and useful.

Unfortunately, most readers will likely encounter significant frustration in steps three and four. These steps – Feedback and Assessment, and Teaching and Learning Activities – are not presented in a neat, linear fashion that is transparent to the reader. They contain a significant amount of explanatory background material but do not feel like they result in a readily accessible tool or set of recommendations. The author does attempt to illustrate how these steps might be applied through the use of authentic, inspiring, richly described examples. However, much of the discussion for these steps would appear to lend itself to upper division courses when they would likely provide more benefit at the lower division level through helping students to learn better at earlier stages in their career. Many foundational courses are focused heavily on foundational knowledge (just one of Fink’s six forms of significant learning) and involve significant risk in making the changes suggested by Fink’s examples. Perhaps a presentation of the key elements contained within these steps in a format

similar to an annotated bibliography might have given more direction to the reader. Fortunately, step 5 is very well presented in an immediately useful format and will help link the previous steps together. Fink's table outlining three key ideas for aligning learning outcomes, feedback and assessment, and teaching and learning activities is essentially a very functional method of assessment for the previous steps.

The rest of the steps can be developed much more quickly with the exception of step seven where the user is to choose an overall teaching *strategy* for the course. Here, only three strategies are presented (problem-based learning, team-based learning, and accelerated learning), none of which look anything like a reasonable adaptation for a typical faculty member with typical time constraints for course design and delivery. For this step, additional strategies need to be presented such that faculty members with diverse teaching styles can find a match and be able to move forward. Nonetheless, skipping to the final steps does not necessarily depend directly on the results of step seven and some sense closure for the course design process can be found.

Assuming one has been able to complete the course design process using Fink's approach, some revolutionary ways of thinking about and implementing teaching and learning activities will undoubtedly be present in the course design. Fink has developed a comprehensive approach that does indeed live up to the claim in its title, and users of the book can create high potential to significantly enrich the learning experiences of their students beyond the more traditional concept-centered approach. The guidelines Fink provides will not restrict innovation through a rigid methodology, but rather encourage it with an open structure. Thus, his book may prove to be a valuable resource for leaders and innovators in undergraduate education. The major disadvantage of Fink's approach is the non-transparency of some of the steps in his course design process. This, however, could be overcome without undue stress by collaborating with experienced faculty and/or faculty developers in teaching and learning centers. Indeed, Fink himself served as a consultant/collaborator for many of the examples he presents in the text to illustrate his points. ■

¹ Barr, R.B. and J. Tagg, *From Teaching to Learning: A New Paradigm for Higher Education*. Change, 1995. 27(6): p. 13-25.

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Spring 2007 Events

Faculty Development Seminars

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| January 18 | Making It Possible for Grades to Support Learning |
| January 23 | Mentoring Undergraduate Researchers
Co-Sponsored by Undergraduate Research Opportunities Program (UROP) and CETL |
| February 27 | Problem-Based Learning: Theory, Research, & Inspiring Practices
Anette Kolmos of Aalborg University, Denmark |
| March 13 | Celebrating Teaching Day Conference |

Other Events

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| March 29 | Outstanding Teaching Assistant Awards Banquet |
| April 11 | Faculty/Staff Honors Luncheon |
| April 17 | Student Honors Luncheon |

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