

# The MEMorandum

FALL 2006

## Points of Interest

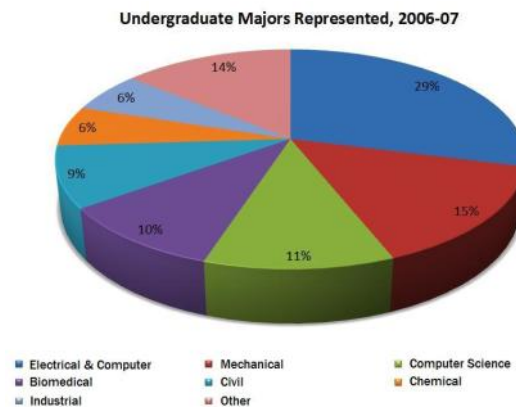
- New look! For the 2006-07 school year, we're trying a new look for the MEMorandum
- The growth of the program this semester has necessitated a split of the core classes into two sections each!
- Decision Models was added as a new technical elective course for the fall semester

## WHY SIZE AND DIVERSITY MATTER FOR THE MEM PROGRAM

By Jeff Glass, Director MEM Program

When I was managing an R&D laboratory during my time in the "real world", I embraced diversity as a good thing. I realize now that my motivation was the easy stuff; it was the right, just, ethical approach to management. What I failed to realize at that time was that it was also the best way to accomplish the organization's goals. I had this revelation while listening to the audio book "The Wisdom of Crowds". I finally understood the idea that diverse teams make better decisions than homogeneous teams and even better decisions than the very smartest individuals. This is not just an abstract concept but rather is a well-researched observation. So how does this relate to the MEM program? In several ways, it turns out.

Our goal of creating students that have an immediate impact on their employers' goals



means that they must be adept at working in a diverse workplace. Without a diverse MEM program, we would only be able to teach this with lots of excellent theory but no applications! Couple the need for, and value of, diversity with what

*(Continued on page 2)*

## NETWORKING EVENT A SUCCESS

By Susan Brown, MEM Program Coordinator

On Friday, September 15, MEM students polished their networking skills and gained business insight at the annual MEM Networking Event. The evening began with the seminar Technical Networking Tactics - The Zen of "Hello" by Brent Ward, RTI International's Business Development Manager of Commercialization. Ward presented information on the rewards of networking, the best places to network (anywhere!), and networking tools and strategies. After the seminar, students attended a reception and dinner with twenty area business people. Students were not told who was coming beforehand, and no one wore nametags, allowing students to gain valuable experience in mak-

ing new contacts in a casual business environment.



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## DIVERSITY AND SIZE IN DUKE'S MEM PROGRAM

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is happening with respect to the globalization of our economy and we must insure our definition of diversity includes national and regional diversity. Ironically, our goal is to embrace and value differences, thereby ignoring "categories" that we tend to put people in. Yet to get there we need to make every attempt to identify and attract different groups of people to our program: from national and economic diversity to ethnic and cultural diversity and everything in between. So how are we doing? Very well in some areas while we could do better in others.

Since we are a degree that provides engineers with the business and management tools to be successful in today's work environment, it makes sense to look at the types of engineers we attract, one of our strengths. We have students from virtually all significant engineering majors and some important science majors, too. Even majors not represented at the Pratt School of Engineering are represented in the program.

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*"We have grown from approximately 30 students four years ago to almost 100 today, but I think we might have the best of both worlds, big and small."*

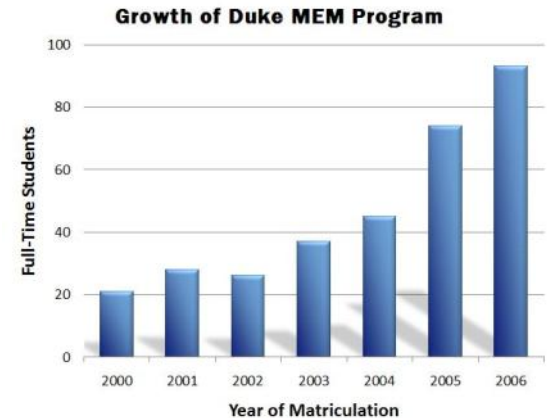
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Next we can look at the number of countries that are represented in the program. This is even more important than different engineering majors due to the cultural differences and widely divergent communication styles of different cultures. In addition, most of our students will work on teams with international members soon after they graduate and to optimize their performance on such teams, they need to practice working together in the safe environment of an educational institution. Again, I believe we are doing well here. Our students represent 14 different home countries. The U.S. still has the single largest representation, although India is not far behind. The statistics are: United States (45%), India (30%), China (6%), France (5%), Singapore (3%), Canada (2%), with Germany, Korea, Pakistan, Panama, Kazakhstan, Taiwan, Turkey and Venezuela making up the remaining 9%. Although students may not always appreciate the effort required to bridge the communication and cultural gaps of such a diverse cross section of nationalities and cultures on their class teams, we deeply believe they will appreciate it within a few years of their graduation.

My disappointment in our current cross section of diversity involves the percentage of women in our program. Following the traditional problem in technical fields, our student body has 25% women; we should be able to do better. Similarly, 17% of our US students

are African American, Hispanic or Native American. This may not be bad by some standards, but again, with the help of our current students, alumni and friends of the program, we should be able to do better. Word of mouth is a powerful tool for us and we need your help in getting the word out.

So what about size? We have grown from approximately 30 students four years ago to almost 100 full-time students today. Is this good or bad? We certainly have



Growth of the MEM program from 2000-2006

given up the small, everyone-knows-each-other atmosphere; or have we? When I see groups of students heading out to the State Fair, tailgating before the football games, driving to Washington for a National Academy of Engineering meeting on outsourcing, helping each other with interviewing techniques for a particular industry and so on, I think we might have the best of both worlds, big and small. The incredible value of the increased size is in the increased resource base we now have and the opportunities it affords our students. We have been able to add numerous courses to the elective offerings, initiate a workshop series to cover topics that do not warrant an entire course, increase the impact of our seminar series and greatly enhance the interdisciplinarity of our program through relationships with other schools. Our increased size also allows us to enhance the impact we have on the outside world. The outsourcing study led by Executive in Residence Vivek Wadhwa and alumnus Ben Rissing in concert with sociology professor Gary Gereffi is one shining example. The fact that four companies at this year's career fair brought MEM students back with them to recruit at Duke is another. Our student work on the Effat College engineering curriculum and the CURE's competition are further great indicators of this (see the "news" section of our website for more info on all of these activities).

The trick will be to maintain the small, innovative, team-oriented atmosphere while continuing to growing our resource base. Isn't this the challenge with all organizations – maintaining an entrepreneurial culture as the organization grows? Can we achieve this? I don't know for sure, but I think we can. And if history is any indicator, our students will let us know if we stray too far.

## LIFE AFTER MEM

By Ben Rissing (MEM'06)

Prospective and current Duke Masters of Engineering Management (MEM) students are attracted to the program because of its unique structure, practical coursework and real-world problem solving. But what happens after graduation? How are the skills imparted during an MEM education being used in the workplace and are they actually benefiting their recipients? We polled the 2005-06 class of MEM students to learn more about their expectations for the program, what they learned, and how they are applying those skills in the real world. Ultimately, these newly minted alumni had nothing but praise for Duke's MEM degree and its applicability within the business community.

Upon entering the program in 2005, new MEM students had a diverse array of expectations. Most individuals were searching for an avenue to augment and expand their technical engineering education though knowledge of business interactions and management practices. This combination would allow these students access to new lines of work, expanded business opportunities and increased upward mobility. Students stated that they were keenly interested in Duke's MEM program because of its strong industry partnerships, hands-on experiences, diverse student body, and customizable curriculum.

Looking back at the time they spent in the MEM program, alumni reported that their expectations were met or greatly ex-

ceeded. These new alumni said that the MEM program's environment was a key factor in the strength of their education. MEM provided an abundance of challenging team-based problem solving, leadership opportunities, multicultural experiences, industry interactions and business insights. Andreas Gondikas (MEM'06) stated that he "learned principles of management that would have taken [him] years in a job environment to learn."

New MEM alumni were asked how they've been using their degree in the first few months they've spent on the job. Alumni in a variety of industries reported that they are actively employing the skill sets learned at Duke on a daily basis. Respondents stated that a deep level of business understanding, openness to criticism, and new-found networking abilities are contributing to their success. Alumnus Aditya Vaidya (MEM'06) stated, "the MEM program significantly improved my communication skills and I find myself taking the initiative to build great relationships with people from across business units, functional groups and even outside of the company."

When MEM students graduate, they enter a plethora of different engineering, operations, consulting and investment banking positions. These individuals are bound by their commitment to finding novel solutions to both technical and business problems. The skills imparted by Duke's MEM program have, and will continue to, shape future engineering leadership.

## MEM CAREER DEVELOPMENT PROGRAM

By Jon Reifschneider (MEM'06)

New students in the MEM Program this year have an additional resource to help them with their job search: the MEM career development program. The program, inspired and led by current students Jon Reifschneider, Miguel Bubis, and other members of the MEM Program Development Committee, consists of a series of career development activities throughout the year to better prepare students for their job searches. To ensure that students get the best possible training, the MEM program has partnered with Lee Hecht Harrison (LHH), the global leader in career search services, to host the events. Additionally, each student has received a copy of LHH's job searching manual "Managing Your Search Project." The manual takes a project management approach to job hunting, consisting of a series of ten milestones which coordinate with the events held throughout the year.

The program was kicked off on during new student orientation in August with a day-long Career Workshop covering topics such as

resume writing, personal marketing plan development, and advanced interviewing and negotiating. In preparation for the Career Fair, a seminar in mid September helped students fine-tune their personal positioning statements and resumes. Two sessions in October provided more in-depth training on interviewing and negotiating offers. Future events include a seminar to prepare students for Christmas Break job search activities and a speech in January by Orville Pearson, Director of Program Design for Lee Hecht Harrison and author of *The Unwritten Rules of the Highly Effective Job Search*.

With the improved focus on career development, MEM students are expected to be even more competitive this year in vying for jobs. The payoffs have already been evident in an increased number of interviews as well as feedback received from multiple HR representatives and hiring managers praising the significant improvement in the quality of MEM resumes.

## PARSONS PRACTICUM

By Jason Patel (MEM'06)

This new MEM practicum is the first of its kind in that 6 students were selected to participate in a virtual consulting firm tasked to conduct a complete business and engineering analysis for Parsons Corporation, a global engineering and construction firm with revenues exceeding \$3 billion in 2005. The team will make recommendations to a Parsons executive regarding if/how to enter the market of renewable energy plant construction. To reach this goal the students will identify market opportunities, competition, hot-spots/locations for growth in the construction of Renewable Energy Facilities, and develop an analysis on key differentiators that are needed for a construction company to successfully enter and grow in the renewable energy market. They will also identify potential customers and competitors in the market. The students will develop a business case regarding whether or not Parsons Corporation should pursue this venture based on the student's assessment of their capabilities and resources as well as the market analysis.

The project simulates an industrial consulting engagement including proposal submission, weekly deliverables, monthly client updates, and final project report/presentation, which all involve interactions with the client. Joey Holmes, who acts as the supervisor for the project, teaches the Commercializing Technology Innovations (CTI) course for MEM and is also CEO of Acuity Edge, Inc., a

management consulting firm based out of the Research Triangle Region. The team directly works with Vipul Srivastava who is the Parsons contact based out of the Chicago Branch.

Holmes modeled the Practicum after a true consulting engagement, which he manages such engagements on a daily basis. It's the students' job to manage and conduct the project and Professor Holmes provides the team with any tools and training needed to understand how to manage and conduct the project.

Student selection criteria were based upon resume receipt date and project fit and 6 Students were selected. Raghuram Jandhyala has an undergraduate degree in Chemical Engineering from India and has had a lot of exposure to the renewable energy field throughout his undergraduate coursework. Jason Patel was a Parsons Commercial Technology Group Fellow and interned with Parsons last summer in Charlotte, NC. Jennifer Redmond, Brooke Rennick studied civil engineering at Duke and also interned with Parsons last summer. William Senner also received his civil engineering degree from Duke and contributed extensively to the university's Smart House Project. Hong-Yuan Wang is a professional engineer from Taiwan with extensive experience in engineering and risk management. Jennifer Redmond previously interned with BE&K on an industrial project site and is currently working with Skanska.

## MEM WELCOMES FULBRIGHT SCHOLARS

By The Fulbright Scholars

The Fulbright Scholarship is a highly competitive program which provides students around the world the opportunity to enroll in programs in U.S. universities. The program's objective is to promote "mutual understanding between the people of the United States and the people of other countries of the world". Fulbright Scholars pursue studies in different areas aiming to apply this knowledge in their home countries. This is the first year the MEM Program has the privilege to include among its students not only one but four Fulbright scholars.

Valerie Speth is a Technology Management Mechanical Engineer from Germany. She previously worked in customer relationship management for Porsche. Midway through her first semester, Valerie states, "The new experience to work in four different teams at the same time is improving my efficiency and time management skills. The cultural diversity of the [MEM] program and the curriculum are a great platform for engineers to understand market dynamics and prepare for the workplace. I really appreciate Fulbright's support as it is making my dreams come true."

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Front Row: Genoveva Wong, Valerie Speth  
Back Row: Anand Haider, Erdem Sahillioglu



## CURES COMPETITION

**By Vijay Anand (MEM'06)** For a parting gift from Duke as I graduated last term, I bagged \$100,000 in seed funding for a business that I proposed. I hoped to turn this into an opportunity to explore bigger and greater achievements. Winning the CURES business plan competition and building PhotoGenesis – a business to treat neonatal jaundice with an improved and low cost solution – has been an experience of a lifetime.

Braced to explore corporate America, I moved to the D.C. area to work with MicroStrategy, a business intelligence firm. My original intention was to split my time and energy to make myself excel at both. However, I cannot fathom being able to have pulled through on my own. I now have the backing from Duke Alums, faculty, and '07 MEMers, who have all kept PhotoGenesis alive with the hope

**By Glen Rabito (MEM'07)** My quest with CURES began over the summer with my participation in the EWH Summer Institute in Tanzania, Africa. During this two month program, our teams conducted many interviews with hospital staff in order to determine what their actual medical needs were rather than their wants. Upon my return to Duke University and the beginning of the MEM Program I was also appointed as the CURES facilitator. My responsibilities as the competition facilitator now include scheduling of the New Social Venture Fellows meetings and judging events, recruiting appropriate professional mentors for each competitor, and constructing a judging panel comprised of some of today's top entrepreneurs, engi-

neers, and social venture experts. Aside from these responsibilities as the facilitator, I am also one of the seven participants in the competition.

neers, and social venture experts. Aside from these responsibilities as the facilitator, I am also one of the seven participants in the competition.

The initial product that we designed for CURES was installed in a clinic in Tanzania last month. I'm excited about the totally revamped design for GINI 300 that Tackle Design Inc., a prototyping house in North Carolina, came up with. PhotoGenesis was also introduced into Joey Holmes' class this fall. Niyanthi Reddy, Tiara Monroe and Fanny Kientz of this year's MEM class will be doing the ground work for market research and assist in marketing the product.

Moving ahead, I can't help but notice the prospects I now have to use for a lifetime with this 9-month investment called MEM. A small piece of advice: enjoy it while it lasts!

I have built a diverse team of ten with backgrounds ranging from engineering to nursing. Our team is comprised of eight talented MEM students, a BME undergraduate, and a Nurse at Duke. The three technologies that we are tackling are an ECG, blood pressure machine, and an infant scale. The success of just one of these technologies has the potential of making a giant impact on the quality of healthcare in developing countries. With this in mind, our goal is not actually to win the competition more so than to establishing a sus-

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## FULBRIGHT SCHOLARS

*(Continued from page 4)*

Adnan Haider is an IT specialist from Pakistan. Prior to joining the MEM Program, he worked with IBM Pakistan as a Technical Sales Specialist. He is fascinated with entrepreneurship and is currently bootstrapping Lootmaar.com, an online marketplace for Pakistan. When asked about Duke he says that "its one of the few places on Earth where people don't laugh when you tell them you want to change the world, they show you how to do it."

Genoveva Wong is a Mechanical-Industrial Engineer from Panama. Before joining MEM, Genoveva was a financial analyst for Cable and Wireless Panama and obtained a Master of Business, Entrepreneurship and Technology from the University of Waterloo. Genoveva believes that "MEM is a wonderful opportunity full of networking and cultural experiences. Thanks to Fulbright, the MEM Program is giving me the tools to leverage both my technical and business backgrounds which in turn will allow me to contribute to my country's development."

Erdem Sahillioglu is an Industrial Engineer from Turkey. He interned as a marketing assistant in the corporate IT department of Deutsche Post World Net Headquarters in Germany before joining MEM. Erdem believes that "Especially through the international teams, I can increase my cultural awareness, and hopefully portray some favorable characteristics of the Turkish culture to my fellow team-mates. In addition to the team-work environments, the discussions in the classroom and the friendly attitude of the Program instructors are a perfect opportunity for open communication and long-term cooperative relationships, which I truly appreciate."

The Fulbright Program aims for its scholars to become global citizens. MEM is the perfect environment to accomplish this goal. The wide diversity of cultural backgrounds and the large amount of teamwork allow us to meet our goal of global citizenship. We feel privileged to be a part of one of the top universities in the U.S. and we are having so much fun as we explore the country, meet people around the world, and acquire valuable knowledge.

## MEM STUDENTS HAVE FUN TOO!

By Derek Brammer (MEM'07), Michael Curcio (MEM'07), and Jordan Sangerman (MEM'07)

Proving that engineering management students are not merely men and women of academic and business acumen, the fall semester has seen its fair share of fun. At the beginning of the semester,



Students visited the US Capitol in Washington D.C. during Fall Break

over 30 MEM students participated in the annual graduate student Campout for basketball tickets. Students rented a U-Haul and camped in the parking lots on Duke's campus with over 2000 other graduate students for 36 hours of fun. They grilled burgers, hotdogs, and chicken and played games together to pass the time between the dreaded the random check-in calls.

Although not funded by MEM, 12 students made the 4-hour drive to Washington D.C. for Fall Break in early October. Only 2 had been to the nation's capital, so it was certainly a cultural experience for all. The group visited the many monuments of American history, including the Lincoln Memorial, Vietnam War Memorial, and Hooters in China-



MEM students get together before the Duke-Miami football game

town, the latter a necessary experience for any visiting student.

In October, the program funded a trip to the North Carolina State Fair in Raleigh. For many, the lights and sounds of the fair were a first-time experience, as students rode rides, played games, and enjoyed sweet and salty foods. On Halloween night, a large group of MEMers took over Chapel Hill's Franklin Street. Dressed as devils, vampires and, yes, Care Bears, many also enjoyed their first Halloween celebration.

Recently, students have gotten together to tailgate for Duke's Blue Devil football team. The program had four tailgate events with great success. The students are able to convene outside the classroom setting and rally together in support of the football team. The game is a great time to teach foreign colleagues about how American football is played and the rules that govern the sport. Although the football team has yet to win a game, the MEM program is advancing its students not only academically but socially as well. Through sponsored events such as the tailgate, MEMers are given the opportunity to build networking skills not taught in the classroom. And of course, it's fun!

A group of diverse and talented athletes emerged to represent the Master and Engineering Management program on the soccer pitch. Formed early in the semester, FC MEMP competed against teams from rival graduate studies programs in the Duke IM Soccer League. Starting the season with a strong showing for a team with such little time to build great chemistry, the club managed to come from behind twice to battle to a 2-2 draw with its first opponents of the season. The team narrowly missed gaining playoff eligibility with a final record of 3 wins, 4 losses, and 1 draw.

The MEM Program would like to thank its major supporters:

- Harold (T'48) and Ruth (WC'49) Hogg
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- Guidant Foundation
- Parsons Corporation
- Textron Charitable Trust
- Michael S. Walsh, Jr. (E'65)
- Jerry (E'67) and Beverly Wilkinson

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