

Master of Engineering Management

MEMorandum**Why an MEM degree ?****One professor's story****Inside this issue:**

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By Lawrence M. Boyd, Ph.D., M.E.M.

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In 1989, I completed my M.S. degree in Biomedical Engineering at Clemson University and headed to Memphis, Tennessee to start my career. I was hired by Dow Corning Wright (a division of Dow Corning) to work as a product development engineer. The company made a wide range of medical devices and I was to work on developing devices for orthopedic and plastic surgery. I found I really enjoyed the challenge of the product development process, working in cross-functional teams to commercialize new products, but also decided I wanted to learn more about the how the business operated as a whole. Within a very short time period I became a Group Leader and I found myself managing several technicians and engineers. At this point, I felt that I really needed some formal business education. I considered both the MBA and MEM route, but ultimately chose to pursue the MEM degree at a small university (Christian Brothers University) because I felt it better suited my career path and interests. At this time, the MEM degree was a relatively new concept. Some programs were calling this a "Management of Technology" (MOT) degree, which sometimes seems like a more accurate description of the concept to me. Regardless, I found the curriculum perfectly fit my needs within the organization. I was able to apply in-class education to my workplace on a regular basis, which provided the double benefit of making me more productive and raising my visibility with upper management.



Professor Boyd at Duke

Prior to completing the MEM degree at CBU, I accepted a position with a small start-up, Danek Medical, in Memphis. My title was Manager of Product Development, but I actually managed no one business skills I really found I could make rapid progress on my projects. The company was growing rapidly and I was charged with developing a completely new product line for spinal surgery. Despite the hectic travel schedule, I somehow managed to complete my MEM degree, sometimes flying into Memphis to attend class and then heading out on the last flight for another meeting the next morning! Well, Danek acquired a French company, Sofamor, and became Sofamor Danek. I hired a few engineers to help with my projects and advanced to a Senior Manager, Director and Group Director. Over time I found myself leading the development effort for a modest size group of engineers and technicians (around 15) and managing a budget of over \$3 million. The product line developed into one with sales of over \$100 million. I found myself using all my MEM training, as I interfaced daily with manufacturing, marketing, sales, legal and upper management. In 1999, Sofamor Danek was acquired by Medtronic. By this time, the business had grown from \$40 million in sales when I started in 1992 to over \$750 million. That year I was promoted to

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Professor Boyd at Danek Medical in 1993

Vice President for Product Development. That same year, I decided to take yet another step on my personal development path and resigned in order to come to Duke University to pursue my doctorate in Biomedical Engineering, completing the degree in 2007 and beginning in my current role at Duke.

This provides some background on my career path and how the MEM degree has served me well as I advanced into management. I think the degree taught me the language of business, allowing me to act as a “translator” between the very technical R&D function and the less technical areas of marketing, sales and senior management. The MEM broadened my perspective about the overall organization and operation of a business entity, especially a technical one. The program increased my confidence in my ability to contribute to the success of the company, and directly led to my advancement into technical leadership and management over the years.

The French Connection

by Karthik Prasad

Little did I know when I started learning French back in 2004 that it would later help me in getting an opportunity to intern in France. I have had the fascination of going to Europe and living there for a while, for quite some time now. When I first visited Europe in 2006, I told myself that I had to live in France some time in my life. This country is simply too good to be true. I never thought that I would be back in France in a couple of years.

“I was coordinating between the Purchasing and the Manufacturing departments at Volvo, trying to get a global view of the project with the help of various project management tools.”

After one semester in the MEM program, I applied to summer internships in Europe and with my knowledge of French, I landed an interview call from Volvo in France. It was mid-April 2008 and my French, which was unused for about 2 years then, was awful. I had no clue what the HR person spoke at the other end. I requested her to mail me back for more clarity! She got back to me by mail and that was when I



Karthik during his Intership

realized that I had an interview the very next day. I wrote back to her asking for at least a week’s time. She granted it. I went straight to the Lilly Library and browsed through the Foreign Film section and rented a couple of French movies. I did this every day of that week and my French was slightly better a week from then. I was still very nervous. My manager called me and the interview was in English for about ten minutes and he told me that would like to hear my French. I started speaking and surprisingly, we did carry out the rest of the interview in French. After a couple more phone interviews, I got the offer. A new set of complications started when I had to get the French visa. This went on for a couple of weeks and then I finally reached Lyon in France.

Lyon, unlike Paris, is a very calm place and has fewer foreigners. I was thrilled with this as I would get a chance to interact with and understand the middle class French lifestyle. The first pleasant surprise came in the form of 1 euro a week bicycle rent, which is a great system of transport in this lovely city.

Speeding along the two rivers (Rhône and Saône) on my bike was almost a ritual every evening after work. I love the people, the culture, the music, the theater, football (not American!) and of course Vin et Fromage. Lyon had a lot of activities every evening which were absolutely free of cost and open to the public, like open air movie screenings, theater in the park, concerts and so on.

I interned at Volvo. Volvo had acquired Renault's facility in Lyon, where they manufactured Trucks. I worked at Volvo Power Train, the engine development unit of Volvo. I was coordinating between the Purchasing and the Manufacturing departments at Volvo, trying to get a global view of the project with the help of various project management tools. The internship went very well and I gave my final presentation in French, which my managers were very happy about.

However, you are not living the French life unless you get away during the weekends. My work schedule was very well planned at Volvo and I was able to travel around France over the weekends. I went to the theater festival at Avignon, where the whole town is absolutely bustling with street performances to high end operas through the day for 30 days! The most memorable trip was the one I made to Marseilles where I was lucky to go to the Beach Soccer World Cup Semi Finals!! It is a crowded city and is just incredibly lively and has some of the best beaches in the country.

Paradise

by Valerie Lee

Like the immigrants who came to America hoping for opportunities that would allow them to start a new life, I arrived in America 3 years ago with pretty much the same dream and desire to re-discover myself and the world around me. I remembered the apprehension that plagued me and the uncontrollable tears that flowed down my cheeks when I first boarded the plane for a 24-hour journey to Detroit, right after bawling my eyes out at the departure hall of Changi International Airport.

Fast forward 3 years, at an airport on an entirely different continent. The same feeling of uncertainty and sadness still plagued me, and tears were welling up in my eyes as I sat at the departure lounge waiting for my flight out of Detroit. However, the situation this time was entirely different. Armed with my Chemical Engineering degree, I was prepared to return home. 3 years of intense memories, bonds and friendships forged in a foreign town far away from home were simply too difficult to say farewell to. I was overwhelmed with the sudden wave of emotions and vivid images of all the amazing moments I had spent at the University of Michigan as I sat by the giant windows of the airport.

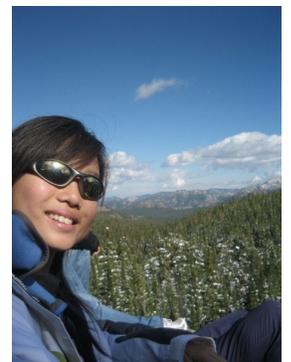
Studying and devouring those thermodynamics, process control and chemical reaction engineering text were of course a substantial part of my memories during the college days. However, I felt that the experiences that helped me grow came from outside the classroom.

My travels around America also allowed me to appreciate the grandeur and beauty of Mother Nature, something which I hold dear to my heart. My most memorable experiences would definitely be taking an RV trip around the southern states, hiking up the mountains of the Colorado Rockies to crystal blue lakes and wandering elks, diving with the sea turtles at Maui and the most amazing one of all – backpacking for 6 days in the depths of the Grand Canyon (barely making it out alive on the last day). My 2 years as an Alternative Spring Break volunteer allowed me to explore the issues of rural poverty and environmental conservation in West Virginia and ponder about the challenges we as inhabitants on this Earth would have to face one day. To me, these travels were not solely about fun; rather, it allowed me to walk out of each adventure wanting to embrace the very ideals and aspirations that I hold.



Karthik Prasad

“Armed with my Chemical Engineering degree, I was prepared to return home. 3 years of intense memories, bonds and friendships forged in a foreign town far away from home were simply too difficult to say farewell to.”



Valerie in the Colorado Rockies



A big leap over the lava flows of Big Island, Hawaii

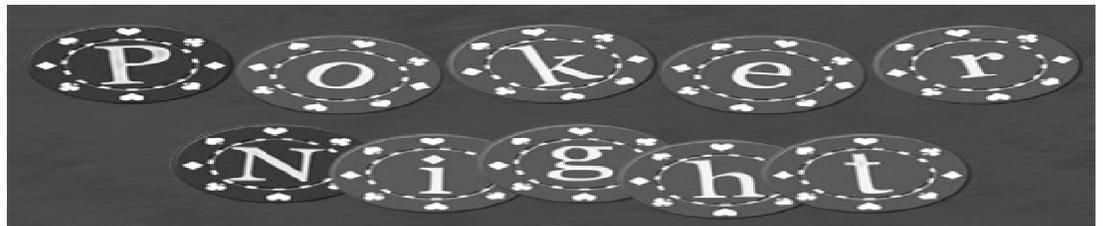
It is unexplainable, almost like magic, the way in which the majestic mountains rivers and canyons inspire me to go on in life. When I return to the concrete canyon of Singapore armed with a Duke MEM degree in a year's time, I hope to translate my love for conquering these mountains and canyons into a fervent desire to overcome the exciting challenges that I might face during my career and life in general.

My favorite quote (from a movie) goes like this: "I still believe in paradise. But now, at least I know it's not some place you can look for, because it's not where you go, its how you feel for a moment in your life when you're a part of something, and if you find that moment...it lasts forever." I couldn't agree with it more. I have always believed in taking advantage of all kinds of situations (good or bad) and turning it into something positive. Late night mugging sessions at home were not dreadful events because that gave me and my housemates the lousy excuse to order in humongous volumes of buffalo wings and pepperoni pizzas (which pretty much explains the accumulated rings of adipose tissue of every returning U.S student). The knee-high snow outside was never a bane to us as it meant we could grab our plastic sled (read: food trays) and slide down the little hill behind our dormitories, crashing into the brick wall during the process. Getting your car stuck in snow meant that random kind strangers would stop along the way and join you in your quest of shoveling out the car. A black-out in the neighborhood due to the extreme summer heat allowed us to congregate on the lawn outside our apartment with candles and flashlights, catching up with one another and chatting about random topics with the company of swarms of flies. When the sky turned dark and the last morsel of our daily food rations had been devoured in the depths of the Grand Canyon, we looked up into the night sky and saw a blanket of stars just right above us. There is beauty in everything...if we look hard enough.

"My goal in life is to find my little snippets of paradise in everything I do wherever I go"

The benefits of an overseas education are boundless and my times in the U.S. as a student would continue to influence me for years to come. Like all the immigrants sailing through New York Harbour under the shadow of the Statue of Liberty in search of a new life, I am glad that I was able to do just that and like many of them, succeed in the journey of self-discovery.

My goal in life is to find my little snippets of paradise in everything I do wherever I go.



by Noel Schexnayder



Noel Schexnayder

In late September the Master of Engineering Management Program Development Committee hosted a Texas Hold'em MEM Poker Night. The "practice" poker tournament proved itself bona fide by boasting poker chips, snacks, and the poker-themed movie *Rounders* playing in the background.

Approximately 30 students, some poker enthusiasts and others completely new to the game, attended MEM Poker Night. The "practice" Poker Night was in preparation for the MEM Poker Tournament held on October 17th. Congratulations to Rohit Naag for winning the tournament. Until the next tournament, keep practicing your poker face!



Nostalgic Ramblings of a Departing MEMer

By Anirudh Venugopal

*“You got me unnecessarily excited about this, this was **NOT** a good idea you know”
 “Take it easy mate, it’s all downhill once we get to the top, gaahaha” I laughed at my own sarcasm.
 “Mummy!” yelled Bhargav as the rickety Hurler made its way up the wooden tracks.
 “Wait for it...” I proclaimed like the champion of a gladiatorial arena (yeah right) as the cart creakily careened past the corner of an eighty foot 50 mph vertical plummet.*

Shortly thereafter, Bhargav exclaims “Oh sh!^@aaaahhhh” - we’ll, that’s the thing about roller-coasters, once you’re strapped in there’s really no going back.

Our mundane summer was made a little less uneventful with the MEM organized escapade to Carowinds, Carolina’s signature theme park located in Charlotte. Despite the intimidating screams and elaborate roller-coasters, it seemed like the sort of place that appealed to a wide audience. The trip brought together faculty and students bumming around in Durham, interns from Charlotte and Morrisville, and even a future MEMer.

The agenda for the day was simple; cover all the major rides with as many people together and as quickly as possible. A lesson in operational efficiency you might say. It seemed more like a lesson in the art of persuasion, at least to those who were reluctant to join the daring thrill seekers. With the majority of us raring to go though, the timid didn’t need much convincing - call it peer pressure or just plain herd mentality.

My plan was to ensure that Bhargav kept up his end of our pact - which simply was to sit in the front row of all rides, hands up all the way. Surprisingly enough, after the first roller-coaster, he was more enthused about the rides than the rest of us put together – a rather snappy transformation from the initially hesitant Bhargav.

Next up was the Nighthawk. Carolinas' first flying coaster that soared us through eight inversions, most while flying facedown, zooming toward the ground and turning skyward just in time for the next inversion. Our unique rider position offered breathtaking and virtually unobstructed views of the park. For most of the crew, it proved utterly terrifying and lasted for almost exactly the same length of time as Van Halen’s Eruption. Some said that if you looked hard enough, you could see the Appalachian mountain range, but I’m afraid most of us didn’t notice being, for the most part, concerned with keeping our lungs inflated during the ridiculously tumultuous twists.

Bhargav had no such issues. He screamed, like MJ on steroids, continuously throughout the 2 minutes and 47 seconds of collective adrenalin rush, high-fived me brutally at the end and then snuck back into the empty bogies on the following ride, something that we did on all rides henceforth. A couple of naysayers who didn’t join the intrepid few were able to experience the vicarious pleasure of watching the exhilarated dread on our faces, which frankly would have be worth more than the price of admission.

Gripping rides, chili dogs, ice lemonade, zany camaraderie, fries and shakes on a Led Zeppelin powered drive back to Durham - definitely a good way to break the humdrum of the summer.

Flash forward 2 minutes, Bhargav - “Dude! That was un-bleatin-believable” – spoken like a true blue Duke daredevil, what say?



Anirudh Venugopal

“He screamed, like MJ on steroids, continuously throughout the 2 minutes and 47 seconds of collective adrenalin rush, high-fived me brutally at the end and then snuck back into the empty bogies on the following ride...”



The Nighthawk at Carowinds

Thank you Bridget!



Jaimeel Aga

A Midsummer's Green Dream

by Jaimeel Aga

The venture capitalists in Silicon Valley think this may be the next dot com boom. Corporate houses ranging from car manufacturers to investment banks are betting their big bucks on it. Obama and McCain have both raised this issue during the presidential campaign. In case you haven't guessed it by now, I am referring to the green revolution which has captured the imagination of a sizeable population around the world. Many concerned citizens across the globe hope that this movement can achieve a critical mass to propel our progeny into a cleaner world. Many others like Congressman Jay Inslee believe that the issues of climate change seat a potential business opportunity for green technology.

This summer I had the opportunity to intern at an environmental think tank called World Resources Institute. Green marketing is one of the most effective ways of connecting with customers. It is no coincidence that diverse companies ranging from Whole foods, Google, Goldman Sachs to Siemens have a huge green marketing campaign even though it may not have anything to do with their core business. The more tangible benefits of going "green" is hedging against the very volatile energy prices, which have become an increasing cost component of their operations. Renewable technology guarantees a stable supply of electricity with negligible overhead. The other revenue streams come in the form of policy incentives such as tax breaks and trading of environmental commodities such as carbon offsets and renewable energy certificates. As an analyst I helped design business models and policy frameworks which would economize the relatively more expensive renewable technologies such as Solar and Wind. My work also included interviewing energy managers around Europe to gauge the policy and financial incentives present in the EU that have stirred corporate investment in renewable and energy efficiency projects in Europe. My deliverables at the end of the internship included a white paper on carbon finance and one on policy incentives in Europe.

"This experience fit perfectly with my MEM degree as it gave me the opportunity to be at the intersection of business, technology and policy."

All work and no play is not good news for any intern and I can swear by the fact that Washington DC is one of the best cities in that respect. The local residents believe that the population of the city increases by 40% in the summer because of the intern influx. I had a blast with other WRI interns while hitting happy hours at the La Tasca bars over at Chinatown or binging pitchers of sangria over Jazz at the sculpture garden on Fridays. To add to that I visited museums and monuments almost every week to capture all that history they enclosed.

I will be honest, non profit work pays less, in fact I was one of the lowest paid interns in MEM but the work satisfaction was phenomenal. Meeting with a congressman on my second day and recommending customized business models to global energy managers was extremely exciting. This experience fit perfectly with my MEM degree as it gave me the opportunity to be at the intersection of business, technology and policy. Non profit experience is also highly sought after for banking and consulting jobs and has been a great interview discussion topic.

I will conclude by saying that this was truly a midsummer's green dream. Never had I imagined I would learn so much in 12 weeks and meet so many important personalities. Never before was I able to gauge the significance of carbon finance and the business opportunities that lied beneath. However, what I am proud of most is that through this internship I was in my humble capacity – trying to change this polluted world!

Food for thought

by Ranjitha Kurra

Disclaimer: I am not a feminist nor am I psychotic. This is just food for thought.

The old fashioned Happy Birthday song has been ringing in my head over the past week. After having three delicious birthday cakes and royal dinners, I mused if it had already been twenty three years since this soul took her first glance at the world. Of course I was confused the minute I was born for the sadistic doctor was holding me up side down to make me, the innocent little thing, cry! I have lived a quarter of my life or maybe more but the confusion from that day still persists. If anything it seems to double every year.

I can classify my life into four phases based on my ever changing ambitions in life. The first few years of my life, I was certain that I wanted to be a cop, just to beat the blank out of the guys who gave me hard time at school. That seemed the only way to bring justice to this unfair world. Few steps into my middle school and cops seemed silly and I wanted to be an artist or a writer who expressed the beauty of the world through her pen or paint brush. Those were the days of believing in Peter Pan and Neverland. I often dreamt about flying carpets and magic lamps.

Life went by and my parents and peers gave me the red pill of reality in high school. They woke me up and injected the venom of greed in me. I wanted to be rich and travel the world. I wanted to be successful despite not knowing the real meaning of the word. I developed a passion for gadgets and technology just like everyone else around me. I pulled up my socks and aced my exams. I was proud to join one of the best institutes in the country and very naively believed that I had won my battles and that I was just one step away from that much talked about success.

Alas! How I wish it were so simple. I just took another blind turn on the dark and winding road of my life. I realized that I was only one of the seven women in a class of hundred men. At the first glance it never bothered me. In fact I really enjoyed all the attention. Those four years were one of the best days of my life. I cannot explain in words how much I grew up in such a small time. However, I was underrepresented everywhere I went. I had to fight to make my voice heard on policies. At the same time I also realized that being a woman, I have to make a lot more choices in life than a man does.

My internship on Wall Street only reaffirmed my thoughts and at some level fears. The ratio of men to women at the joining level is almost 2:3 but there is only one woman for every five at the Managing Director level. In a fit of judgmental rage, I first blamed the organization for discrimination. However, after conversation with women at different levels, I realized that it is a conscious decision made by most women to slow down in their careers. They feel more complete with baby poo on them than in expensive Prada suits. The women who do make it to the top are often branded as aggressive and lone wolves. I feel inspired when I see both kinds. There is another rare breed of women who are champions at both.

This December when I graduate from college, I am going to be one of them. I am going to hit the fork sometime in my life and I am curious to know which way I will swing. I am intimidated but at the same time am excited to know what the future has in store for me. If you think this is too much to think, add another page each about religion, existence, life and such and you might come close to stepping in my shoes. While I am writing this, the laundry and gym schedule on my To-Do list give me angry glares. Oh my God! I wish I could invent a machine that adds ten more hours to my day. Maybe somebody should add that to their list. Don't look at me; mine ain't got no space on it. There is so much to do and so little time. There is a spider web of thoughts and things to do in my head. But for now, I just want to relax, put everything on hold and fill my lungs with the magic drag from the hookah!

Go Afir Futt! Go!



Ranjitha Kurra

“I had to fight to make my voice heard on policies. At the same time I also realized that being a woman, I have to make a lot more choices in life than a man does.”
