School of Engineering, Mathematics & Science

SPRING 2013

> First University-Wide Program and Living-Learning Cohort

The School of Engineering, Mathematics, and Science (SEMS) at Robert Morris University was awarded a five-year grant (the first year was a planning year) from the National Science Foundation (NSF) to give scholarships to 21 academically talented but financially challenged students majoring in the disciplines of science, technology, engineering, and mathematics (STEM). Each student received up to a total of $24,000 over their four years of study.

Students starting in the fall of 2009 were selected through an interview process for the STEM scholarship by meeting the PELL requirement through the FAFSA and meeting academic and leadership requirements as well. The initial cohort consisted of 21 students (seven in each discipline of science, engineering, and mathematics) of whom the majority (13 out of the 21 students in the applicant pool, or 62%) were the first generation of college attendees. In addition, the initial cohort included 11 females or 52%. The majority of those students would not have been able to afford attending RMU without the grant. The PI on the grant was Dr. Maria Kalevitch with Drs. Badger, Holdan and Sirinterlikci serving as Co-PI's. Cheryl Maurer was instrumental in supporting grant activities

Since the beginning of the spring 2011 semester, the cohort has remained the same with the exception of one student leaving RMU after the semester due to personal reasons, thus overall retention is 95%.

During the planning year of the project, the management team completed preparation for the arrival of the Living-Learning Cohort of the STEM Scholars. The leadership team also worked with Academic Services and the Registrar's Office to determine what common classes in science, mathematics, communication skills and core courses the STEM Scholars would take for the incoming year. The intention was to schedule the group for the same sections to foster the living-learning environment.

They were involved in academic and professional experiences as well as community service, cultural activities, and outreach activities (just to name a few) throughout their academic careers. Some examples include National Society of Collegiate Scholars, Alpha Chi National College Honor Society, Honors Program, Habitat for Humanity, Division I and club sports, peer tutors, fraternities, sororities, and various other RMU student organizations. This cohort served as a strong support mechanism to help other students adapt to the college environment and succeed in the future.

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> From the Dean

Welcome to the new edition of our school's newsletter! When I was asked to highlight our four most important developments that took place in SEMS in the past year, the following came to mind:

- The graduation of the NSF STEM Cohort, the first living-learning community at RMU and the first NSF grant that enjoyed university-wide support.
- The doubling of SEMS enrollment, especially in engineering.
- Having our first graduate from the medical school—first medical doctor from our pre-medicine program that began in 2005.
- Actuarial science students who have not only passed exams, but who have already attained employment.

These are the stories you will read about in this issue of our SEMS Newsletter. We would appreciate your feedback and look forward to hearing from you.

Enjoy!

My Best Wishes,

Maria V. Kalevitch

MARIA V. KALEVITCH, PH.D.,
DEAN & UNIVERSITY PROFESSOR

> Growth of Engineering Enrollments at RMU

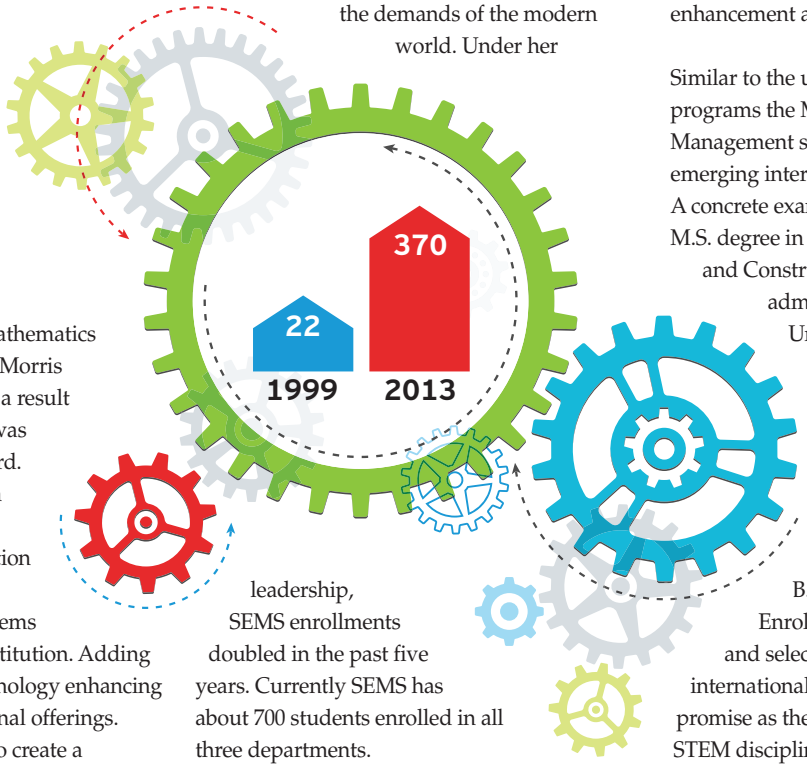
From a humble beginning of 22 students in the fall of 1999, the engineering enrollments now (Spring 2013) have reached a total of 370 undergraduates. Out of this total 71 are in biomedical, 168 in mechanical, 44 in software, and 44 are in industrial engineering. Our specialty, the ABET accredited B.S. degree in Manufacturing Engineering, the only such degree in the commonwealth, with 45 majors, continues to make a great impact in the region and beyond to help enhance U.S. competitiveness in manufacturing. An example of this prominence can be seen in the leadership role played by RMU along with Carnegie Mellon, Penn State, Case Western, and Youngstown State universities in the NAMII collaborative established with President Obama's support for advanced technologies, such as additive manufacturing.

The School of Engineering, Mathematics and Science (SEMS) at Robert Morris College (RMC) came about as a result of the president's vision that was supported by the College Board. The school wanted to broaden the image and reputation of Robert Morris from an institution well known for its focus on business and information systems to a technology embracing institution. Adding SEMS was proposed as a technology enhancing dimension to RMC's educational offerings. This addition was perceived to create a competitive advantage to RMC on its way to becoming RMU and attracting students with higher math and science aptitudes.

To support this vision, the undergraduate engineering programs in software and logistics engineering were launched with the first class of 22 students in the fall of 1999. In 2000 the B.S. degree in Manufacturing Engineering and the M.S. degree in Engineering Management were also initiated.

In its early years, the engineering curricula that were in effect had to be revised to bring them in compliance with ABET requirements at the earliest possibility. Enrollment growth was slow as the programs were not ABET accredited. With the first graduate in 2001-02 timeframe, ABET accreditation was secured. Starting in 2006 our programs were ready for further refinement. New tracks in mechanical and biomedical engineering were added, while the logistics engineering track was renamed as industrial engineering.

In 2009 Dr. Maria Kalevitch became the Dean of SEMS, bringing an interdisciplinary background in bioengineering and life sciences, and a clear vision to move the school forward strategically in response to the demands of the modern world. Under her leadership, SEMS enrollments doubled in the past five years. Currently SEMS has about 700 students enrolled in all three departments.



In the past few years, ABET accreditation of the undergraduate engineering degrees and the superior performance record of RMU engineering graduates provided added impetus to the growth of engineering enrollments. Another recent development is the growth of international students in our programs. Recent growth holds great promise for the future of engineering at RMU.

The strong reputation that our M.S. degree in Engineering Management has built over the years will further be enhanced with the new sustainability and alternative energy track soon to be offered. It is expected that our M.S. degree program will remain healthy and continue to add significant value to our offerings in the engineering department. Our new fully online version of this program in engineering management also shows great potential for growth.

Popularity of our Integrated B.S./M.S. program among the undergraduate engineering majors has opened a new growth chapter in our enrollments. It is estimated that, in the near future, with appropriate advising, majority of our undergraduate engineering students will take this B.S./M.S. degree option for career enhancement and professional growth.

Similar to the undergraduate engineering programs the M.S. program in Engineering Management should also benefit from the emerging international growth potential. A concrete example of this potential is the M.S. degree in Engineering Management and Construction Management to be jointly administered by RMU and the University of Zilina in Slovakia. Likewise many international students in the undergraduate engineering programs are excellent candidates for our M.S. program upon completion of their B.S. degrees or as Integrated B.S./M.S. program students. Enrollment growth in engineering and selected science disciplines from international student sources holds a great promise as these countries emphasize the STEM disciplines for their best and the brightest young people.

Emphasizing only the engineering part of the School of Engineering, Mathematics and Science, the future for the school is exciting and bright with significant growth potential. The educational institution is as strong as the faculty and administrators it has, and the growth promised needs to be matched by the retention and addition of qualified faculty and administrators. Current emphasis on the competence of the faculty and the leadership in STEM disciplines needs to be sustained and enhanced for best results.

> Highmark Scholarship Winner

Markief Knode has been awarded the Highmark Scholarship. This is a full four year tuition scholarship provided by a Highmark endowment to help support the RMU Actuarial Science Program. Markief is from Altoona, PA. His academic credentials are exceptional. Markief is a well rounded student as he also found time to participate on both the varsity wrestling and football teams at his high school. We congratulate Markief and would like to thank Highmark for their continued support of RMU's Actuarial Science Program.

> Did You Know?

CareerCast.com, a career website, ranked 200 jobs of 2013. By their rankings, the top three professions are:

- Actuary
- Biomedical Engineering
- Software Engineer

Science fields were also ranked high.

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> Actuarial Science

STUDENT	EXAM
Ian Bookhamer	P
Sam Brueggen	MFE
Bryan Burns	FM
Robert Dougher	P
Katherine Haring	P
Michael Holcomb	MFE
Carter Khalequzzaman	FM
Kevin Klus	P
Christopher Ludwiczak	MFE
Robert McAndrew	C
Callen Oster	MLC
Benjamin Ridgeley	MFE
Allyn Shepherd	MFE
Matthew Stefanko	P
Matthew Walkowiak	P
Ashley Zacher	P

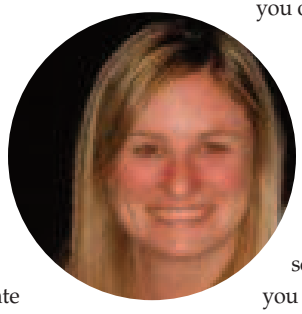
STUDENT	COMPANY	STATUS
Chad Bomberger	Mass Mutual	Internship
Jaclyn Bosiljevac	Nationwide Financial	Full-Time
Sam Brueggen	Towers Watson	Internship
Joshua Cleary	Nationwide Financial	Internship
Megan Coleman	Mercer	Internship
Joe Douglas	Buck	Full-Time
Katherine Haring	Hartford Life	Internship
Aaron Hartman	Highmark	Internship
Matthew Hudak	MetLife	Full-Time
Carter Khalequzzaman	Mass Mutual	Internship
Kevin Klus	Hartford Life	Internship
Chris Lockhart	Hartford Life	Full-Time
Christopher Ludwiczak	Allianz Life	Internship
Kayla Newman	Nationwide Financial	Internship
Callen Oster	Towers-Watson	Full-Time
Benjamin Ridgeley	Cigna	Full-Time
Philippe Rigaud	Western Southern	Internship
Madeline Scanlon	Aetna	Internship
Jeff Siwik	Buck	Internship
Mike Smith	NCCI	Internship
Matthew Walkowiak	RGA	Internship

CONGRATULATIONS TO THE ACTUARIAL SCIENCE STUDENTS ON PASSING EXAMS AND ATTAINING EMPLOYMENT

> First Graduate of Pre-Medicine Program Becomes a Medical Doctor

"Looking back at my time at RMU, I realize how much support I had around me. Due to the small classroom size and the individual attention I received, professors and advisors became like family to me. They were the people who encouraged me to think about becoming a doctor."

- Taryn Reichard



WHY I PICKED RMU

At first, my decision to come to Robert Morris was based on two factors: my desire to continue my soccer career at the collegiate level and my goal in academics.

At the time, I thought I wanted a big university, but once I visited RMU I had a completely different outlook. When I poked my head into a classroom that day, I saw a manageable class size where I felt that I could get the individual attention that I would need to be successful student and athlete.

SWITCHING TO PRE-MED & GETTING INTO MEDICAL SCHOOL

First year was a whirlwind of adjusting to college life. I was meeting new people and forming friendships that will remain important to me for the rest of my life.

During my second year at RMU, I was encouraged by professors and advisors to consider the pre-medicine concentration that the School of Engineering, Mathematics and Science was introducing in 2005.

I had never thought myself smart enough to be a doctor, but fortunately I had people around me who could see how much I could accomplish in the future. So, that spring I decided to major in Environmental Science, pre-medicine.

My goal of becoming a physician was supported by all the SEMS family. One spring, Dr. Kalevitch, Associate Dean at the time and founding chair of science department, along with other faculty, took a group of students to visit two medical schools in the area. I'm forever grateful for this trip because I ended up going to the Philadelphia College of Osteopathic Medicine, which was one of the schools we visited on that trip. It is very rare for the Dean to know your name, let alone take you on a six-hour trip to Philadelphia.

MEDICAL SCHOOL

I attended the Philadelphia College of Osteopathic Medicine (PCOM). Your initial years of medical school are spent in the classroom. For me, these were the most difficult years of school. The course load is rigorous, and you don't have much time for yourself. Your third and fourth years of medical school are spent in the hospital, rotating in different specialties of medicine. Here I realized that each patient is unique and isn't always like the books says. At this point, I was learning how to apply my knowledge foundation to each patient individually. And this is the time that you lay the groundwork for the type of doctor you will be in the future.

WHY ANESTHESIA

(This was my personal statement for residency application.)

Looking back I realize that, while I never had that specific epiphany of when I wanted to become a doctor, there have been many moments throughout my life that have prepared and led me to the field of anesthesia.

The calm and certainty that must be displayed in the pre-op interview is just as important, if not more important, in the operating room. Having been captain of the RMU soccer team, I believe I have the qualities to be a natural leader in the O.R. Here, you need to be decisive when surrounded by chaos, deliberate in your actions, confidant, and reassuring to others around you. As an anesthesiologist, one must have a vast amount of knowledge and be capable of performing specialized technical skills. Both are vital in order to manipulate variables placed before you and devise the most beneficial strategy for each patient.

A strong work ethic, quiet confidence, and the ability to lead have become ingrained in me through my various experiences in college and medical school. Based on my knowledge, experience, and my desire to interact with many different types of patients, I feel that my strengths are perfectly suited for the field of anesthesia.

So, this is my story as a proud RMU alum and a new doctor! Thank you all!