EPMP/PSM Director Dagmar Beck reviews Professional Master’s Programs Enrollment Progress

Despite national trends indicating that fewer students are enrolling in graduate degrees, the enrollment in Rice’s Professional Master’s degrees has steadily increased. Fall 2015 and spring 2016 saw a total of 76 Professional Science Master’s students and 237 engineering master’s enrolled. All incoming fall international students attended cultural workshops specifically designed for them, in addition to communication workshops, orientations and a combined social. The EPMP/PSM team stayed busy to ensure that our students “hit the ground running.” Well-prepared with reading and writing assignments over the summer, students settled into their classwork. Students also received preparation for the Fall Career Fair with help from the Career Center and RUNPSMA and EPMP student organizations. Students are actively looking for internship opportunities and are honing their skills by attending our special seminar series, including communication, career, and professional development workshops.

Our goal is to enrich the students’ curriculum preparing them to become competent and confident representatives of Rice and our schools, to become successful contributors and leaders in business and society.

THE 3 SHIPS: Entrepreneurship, Leadership and Internship

In step with Dean Thomas’ goal to engage students in these areas, a new Rice entrepreneurship initiative was founded last year with the aim of transforming Rice into “The Entrepreneurial University” envisioned by President David Leebron. Rice’s combination of top-tier engineering and sciences, strong business school and creatively-oriented student body create a natural environment for innovation and entrepreneurship. Entrepreneurship@Rice is composed of a collection of curricular and co-curricular activities meant to prepare students for the process of entrepreneurship. Our classes combine theory and practice in order to provide students the opportunity to apply the skills they have learned in the classroom. A combination of leading academics and practitioners ensures that students are exposed to a broad range of perspectives and experiences throughout their journey.

New Rice initiative: Rice’s Board authorizes $43M data science initiative

The goal of this initiative is to increase activity in data science across the campus and its visibility across the world. Proposed activities include research focus in energy, health, urban data, and education. Furthermore, the initiative proposes the development of an undergraduate minor in data science and a professional master’s degree in data science in the near future.
**Creative Entrepreneurship**

PSM students, Maryam Nasizadeh (SG), Celso Costa (EADM), Mudit Gurjar (SPS), and David Moore (EADM) took the Creative Entrepreneurship course learning over the period of six weeks how to start a business, create a business plan, and ultimately pitch their idea in front of judges.

Their company startup is Yo Hang, a smartphone application that generates event/activity suggestions tailored to user preferences (similar to Pandora, except for events instead of music) for travelers and city-goers alike.

**PETROCHALLENGE by Schlumberger**

PetroChallenge is a competition held at leading universities in which teams compete and collaborate to discover and develop hydrocarbons. Students are divided into teams of four, with each student from different technical and non-technical disciplines. Each team creates an energy exploration company with a starting simulation budget of $500 million. The objective is to create the most value for their company. The competition utilizes the upstream learning simulator, OilSim, the software used by industry to train professionals in geology, geophysics, project management, strategy, decision making and teamwork.

The teams study seismic surveys, magnetic, gravitational and environmental maps to determine the best place to find offshore hydrocarbons, farm-in and -out partnerships with other teams, chose rigs and subcontractors to drill, and consider CSR to reach their ultimate objective.

First and second place teams received cash prizes and the opportunity to compete at Nationals, held in Houston during January 2016. The winning teams included both EPMP and PSM students:

**First Place Team:** Caitlin Altomare (SG), Asset Sabyrbekov and Umer Shahryar (Energy Economics), and James McCreary (CHBE)

**Runners-up:** Divya Chandran (EADM), Zac Zhai (CEVE), Sonia Zhang (STAT) and Jessie Fan (SG)

**SEMINARS**

**Master’s Seminar Series**

The fall master seminars hosted speakers from Baker Hughes, the Center for Medical Ethics and Health Policy at Baylor, Inoperant, Rice Career Center, Lockheed Martin, Texas Healthcare and Bioscience Institute, RCEL, Center for Written, Oral, and Visual Communication, Geosyntec Consulting, GE Oil & Gas, Element Markets and Shell.

**Professional Development Seminar Series**

The Professional Development Seminar Series offered in collaboration with the EPMP programs in Duncan Hall has provided students with interesting topics on leadership, negotiation skills, elevator pitch and presenting yourself, LinkedIn as a job searching tool, and how to avoid plagiarism.
**EPMP student club**

Club President Vaishnavi Ramesh (BIOE ‘15, EPMP), now working at LIVANOVa (formerly Cyberonics), and co-president Paul Chaguine (MME), employed at Weatherford as a design engineer, ended their terms this past fall. After a successful year of service they have passed responsibilities over to new club president Harsh Upadhyay (CS, EPMP) and Wenjia Ma, (CHBE) co-president.

The club leadership met in December to discuss new and upcoming events, how to better engage the professional masters student population, how to represent EPMP club at the club fairs, and how to establish an Owlspace calendar to enhance visibility of upcoming events hosted by EPMP, such as workshops, talks, seminars etc. Furthermore, the leadership is presently investigating the Homeland Security’s STEM OPT extension issue in order to provide clarifications to our students.

**Corporate and faculty luncheons**

These popular networking sessions allow students to engage with corporate representatives and faculty advisors. We hosted guests from Chevron, Tohme Consulting and Conoco.

**Recruitment and marketing**

EPMP/PSM staff spread the word about Rice and our programs at Texas A&M, UT Austin, University of Chicago, University of Illinois/Urbana-Champaign, University of San Diego, University of California-San Diego, San Diego State, Rutgers University, Columbia University, New York University, Northwestern University, and University of Maryland.

**PSM student creates winning design**

Nanoscale Physics Professional Master’s student Geetanjali Vengurlekar won the t-shirt design contest held in the Physics and Astronomy Department! T-shirts were given to prospective students during recruiting in February 2015. Students and faculty liked it so much that the department will order more.
CORPORATE RELATIONS

Board meetings & corporate feedback

The Annual PSM Board of Affiliates Meeting and Corporate Reception, the Annual EPMP Advisory Board Meeting, and the Advisory Board for Space Studies luncheon attracted corporate representatives to campus to engage with faculty and students. We are proud to have a very supportive and engaged group of board members collaborating with our programs.

Our corporate advisors continue to emphasize the importance of soft skills in job applicants. Students are encouraged to take advantage of Soft Skills Training available at Rice, such as choosing electives in business, management and communication. In addition, we urge students to attend our Professional Development Seminar Series, participate in Communication and Career Workshops offered by CCD, take ESL Courses when needed at the Center for Written, Oral, and Visual Communication and take advantage of networking opportunities.

Our programs also collaborate with the recently established Doerr Center for New Leaders which will help us enhance leadership training in collaboration with RCEL and other groups on campus who encourage and mentor students actively involved in leadership roles both on and off campus.

Corporate scholarships

MAY, 2015— The annual check presentation from Baker Hughes at Cohen House was an opportunity for Rice faculty, staff, and students to meet Baker Hughes employees involved in the company’s recruiting and research efforts on campus. The funds, totaling $141,000, were largely directed toward the Professional Science Master’s Program, the Ph.D. Program in Mechanical Engineering, and the OEDK.

In addition, Chevron, Schlumberger, and the Houston Airport Systems continued supporting our programs. Partial scholarships were distributed to twelve PSM students.

Baker Hughes Vice President & Chief Strategic Officer Derek Mathieson (left) presents the check to President David Leebron

Rice Global D&C Forum scholarships

The Forum’s scholarship award program focuses on the Rice Professional Masters students. For 2016, this corporate group has approved awarding scholarships totaling $20,000 to be distributed to qualified students. The on-line applications for the awards will open on Engineers Day, February 24, 2016.

New courses/focus areas

Environmental Analysis and Decision Making offered a new course this fall: EBIO 580, Sustainability Development and Reporting. This course was created from an initiative by members of the PSM Board of Affiliates in collaboration with oversight faculty for this program track. Teaching the course are Lester King, fellow at the Shell Center for Sustainability, and board member Ron Huijsman, from HUCO Consulting. King specializes in sustainable development and the development of context-sensitive solutions for urban development. Huijsman’s company offers centralized compliance systems to help companies achieve significant cost benefits and mitigate compliance risk by providing tools that monitor and track their environmental, health and safety impacts.

Coordinated Professional Master’s and MBA Program

We have seen greater interest in our coordinated EPMP/PSM-MBA degree programs by incoming students who must apply to both programs at the same time to qualify for this opportunity. The Jones School has agreed to accept the GRE scores for admission so students no longer have to take both the GMAT and GRE.

Department of Bioengineering

Under the guidance of Dr. Richardson, BIOE expanded its non-thesis master of bioengineering (MBE) degree with a new unique track in Global Medical Innovation (GMI).

Medical device innovation today involves increasingly globalized research and development, manufacturing, funding and regulatory processes. The GMI program’s focus is on emerging markets. In 2015, the program offered an eight-week global industry internship in Costa Rica—a key player in the global medical technology industry. Over 60 companies, including Boston Scientific, St. Jude Medical, Covidien/Medtronic and Baxter, have operations in Costa Rica.

The one-year track includes bioengineering courses in product development, elective courses and guest lectures from industry and academia, visits to clinics and companies, and project-based learning experiences. The majority of the program involves emerging market design projects. Prerequisite courses are fundamentals of systems physiology, cell biology, and statistics.

“There was a lot of support and interest in our program in Costa Rica, and several media outlets featured the students’ activities this summer,” Richardson said. He is thrilled about the potential this exposure may have in “strengthening ties with international industry, increasing opportunities in international education, and leading to a stronger future in clinical and translational research.”
STUDENT ENGAGEMENT

Offshore Technology Conference
EPMP/PSM collaborated with the Smalley/Curl Institute to man the Rice table at the Offshore Technology Conference in May, 2015. Several students volunteered to help and some presented their research posters.

SPACECOM Conference
Rice Space Institute and EPMP/PSM participated in the first SpaceCom Conference at the George R. Brown Convention Center in downtown Houston. This three-day event was engineered to fuel business innovation across the aerospace, medical, energy, transportation, maritime, communication, and advanced manufacturing industries and had lots of great learning and networking opportunities for students.

EPMP/PSM students Vanessa Neutzler (BHP), Mudit Gurjar, (SPS), Mike Zuh (MECH), Victor Ferrari (NP), and Amanda Humphrey (SPS) took turns manning the Rice booth. In his keynote speech, Stuart Martin, CEO of Satellite Applications Catapult, said that SpaceCom has become the premier event for the commercial space industry. We look forward to participating again in the future.

Other student engagement activities
EPMP/PSM programs were represented at various venues inside and outside the hedges:
- HPC Workshop and reception at Rice’s BRC
- The Grace Hopper Conference for Women in Computer Science at the George R. Brown Convention Center
- BioHouston meetings at the TMC John P. McGovern Campus
- Subsurface geoscience students attended the AAPG Conferences in Colorado and Wyoming and the SEG Student Expo in New Orleans, LA.
- A nanotechnology student attended the 2015’s Silicon Valley Technology Innovation and Entrepreneurship Forum in Palo Alto, CA.
- An EPMP student presented his poster on drone control at the 2015 IMAV Conference at Aachen University, Germany.

Fall ’15 student presentations
For many of our students graduating also means presenting and writing about a completed internship project. This fall 84 students graduated and here are some of the topics students presented to a mixed audience at the end of the fall semester:

- João Coimbra, (EADM), who interned with KCI Technologies, presented his participation in helping Rio de Janeiro reduce trash pollution in the Guanabara Bay by using Waterwheel Trash Interceptors.
- Celso Magaraao Costa (EADM) interned with the City of Houston, investigating their options for establishing a green fleet of city vehicles to help reduce air pollution.
- Rong Liu (EADM) presented her environmental data research conducted at the United Nations in New York.
- Priya Singh (EADM) presented her work with the SPEED Center at Rice.
- Caitlin Altmare (SG) presented her work with Kerogen Exploration related to the Barnett Formation.
- Brian Kubik (SG) presented his research under Prof. Droxler, “Upper Cambrian Microbial Carbonates in Mason County” (Central Texas).
- Kai Lu (SG) presented a comprehensive study conducted on the Neuquen Basin in Argentina.
- Ting Lu (SG) reported on his research with Prof. Zelt on the frequency dependent Eikonal equation project.
- Batyrkhan Sagidullin (SG) interned with TaskFonterra Geosciences and presented “Structural Interpretation of Borehole Image Data”.
- Yu Chen (SG) interned with Weatherford and presented “Global Correlation of Rock Brittleness Indices with Petrophysical and Geomechanical Properties and Its Application to the Prediction of Rate of Penetration”.
- Amanda Humphrey (SPS) reported on her work with the Brine Recovery Containment System to recover potable water from wastewater brines for long-duration spaceflight missions conducted with Jacobs at NASA/Johnson Space Center.

Annual EPMP/PSM Preview Days
The EPMP/PSM Preview Days allowed accepted domestic students to participate in activities on campus during the last week of March, and 80% of these attendees accepted Rice’s admission offers.

The 2016 Preview Days are scheduled for March 24 & 25.
Despite a difficult economic downturn affecting the oil and gas industry, students were placed in a variety of internships this past summer. We appreciate the support of our internship providers like Kerogen Exploration, Shell, Chevron, Energy Quantum Research Management, Schlumberger China, Halliburton, City of Houston, Cheniere Energy, Element Markets, Houston Wilderness, Nanoridge, HTC, Rice Alliance, M.D. Anderson Cancer Center, UTMB Galveston, NASA Life Sciences, Jacobs, NASA-Langley and others.

This summer we visited with many of our interns at their work sites, traveling to NASA/Johnson Space Center, Jacobs Engineering, Cheniere Energy, Element Markets, Nanoridge, Rice Alliance, and others. Due to the downturn in the oil industry, several of our geoscience students completed academic internships in lieu of corporate internships. We appreciate the faculty who welcomed students into their research and allowed them to complete the required internship experience. Some of our international students accepted internships in their home country. Their proactive approach in securing positions showed their self-motivation and initiative in exploring a variety of options available to them.

Lecture capture pilot ends

The three-year lecture capture pilot which ended this fall accomplished many goals, such as helping faculty become familiar with new classroom technology, offering faculty opportunities to try new teaching methods, and using recorded footage for a variety of time-saving methods. The recording of courses improved student learning, elevated the quality of the course by helping students reach their learning objectives, and helped students to better prepare for exams. International students with language barriers found it to be a great tool to review lectures. Several courses were reused to help new adjunct faculty teach a course that was unfamiliar to them, provide backup to faculty who were out of town, or when faculty wanted to flip the classroom.

Responsibilities for lecture capture were returned to the newly reorganized IT department under the leadership of Klara Je-linkova. Faculty interested in having their classes recorded are urged to respond to the IT support request that is sent out to all faculty before each semester.

Many thanks to our e-learning coordinator Shari Smith and all our student helpers who made this pilot a success with our faculty and students.

Finding an internship is a process that starts as soon as students come to campus!

Congratulations to all of our spring and fall 2015 graduates! Forty-eight students completed the Professional Science Master’s program and EPMP had 122 graduates.

With the majority staring new jobs, we are excited to have our graduates joining the workforce and representing Rice and our programs.

PSM graduates secured jobs with AT Kearney, Weatherford, Shell, Hart Energy, City of Houston, TCEQ, RG Miller Engineering, Fannin Group, K&S Health Consultants, and Sloan Kettering Memorial Cancer Center. Engineers found employment with Briskol-Myers Squibb, Schlumberger, St. Jude Medical, GlaxoSmithKline, Cyberonics, Oracle, Shell, Boston Consulting Group, Aqualis Offshore, Microseismic, Emerson, Epic, Verizon, Microsoft, Yahoo, Amazon, IBM, Baker Hughes, Google, TI, Dow Chemical, Aramco, Cisco, Chevron, NASA Avionix at SpaceX, GE Aviation, Boeing, OneSubsea, Morgan Stanley, UT Health Science, Pros Pricing, Epsilon and others.
CONFERENCE NOTES
Annual NPSMA Conference in Washington, DC

PSM director Dagmar Beck, and colleague Liz Friedman of IIT Chicago presented to an engaged audience of PSM program directors, deans and conference guests about the long term outlook of PSM programs: “Evolution in a conservative culture.”

Since 1996, when Illinois Tech launched its first Professional Science Master’s Program, and 2002 when Rice University launched theirs, STEM workforce needs have changed. Today Illinois Tech and Rice University offer 22 EPMP/PSM programs; some are successful, some less so. For programs to last over the long-term, they must be adaptable and be able to evolve. One of the challenges, however, is that universities are generally prone to lean towards an equilibrium and are often resistant to rapid change. Beck and Friedman addressed what the key elements are in continuing to offer academically rigorous and relevant EPMP/PSM programs over the long run.

RICE UPDATE
New buildings under construction

Moody Center for the Arts

The Moody Center for the Arts is intended be a LEED Silver certified, state-of-the-art facility dedicated to the advancement of trans-disciplinary collaboration between the arts, sciences and humanities. The 50,000 square-foot facility will house a diverse collection of instructional, production, performance and exhibition spaces—the value of their individual utility multiplied by their aggregation into a cohesive set of capabilities upon which students and faculty, as well as independent researchers, artists and scientists, can draw upon.

Brian Patterson Sports Performance Center

Named for Rice alumnus Brian Patterson, the new student-athlete development building will be located in the north end of Rice Stadium. This impressive 60,000 square-foot two-story structure will house a weight room, a home-team locker room, coaching and staff offices, a football team lounge and areas for training and sports medicine that include hydrotherapy, plunge pools and exam rooms. The weight room and sports medicine areas will be available to student-athletes from all sports at Rice. The project is expected to be completed in time for the 2016 football season.

Rice University Music and Performing Arts Center

Once constructed, the Rice University Music and Performing Arts Center will include an opera theater, audience chamber, 600-seat auditorium, 5,000-6,000 square-foot stage and wings, an orchestra pit capable of seating 70, new dressing and conductor’s rooms, a musician’s lounge, a backstage green room and state-of-the-art audio visual capabilities. The building will be located west of the Shepherd School of Music.

New leadership for RUNPSMA student chapter

OFFICERS

Co-Presidents
Abigail Wright and Vanessa Neutzler (pictured)

Vice President
David Moore

Social Chair
Victor Ferrari

Treasurer
Shola Ayandele

Secretary
Megan Hotard

External Affairs
Zach Printz
STUDENT/ALUMNI NEWS

PSM Alumni Board

NOVEMBER 2015–PSM alumni formed an alumni board to explore ways to reach out to incoming and/or prospective students. The board plans to offer a seminar session or luncheon held by PSM alumni to provide information to new students about the program, and offer practical tips to help them to assimilate smoothly into Rice/Houston and the U.S. in general (for international students).

Discussion at their first meeting included creating an alumni award, organizing an “alumni only” event, holding a monthly “family dinner” for enrolled students and alumni, and developing a platform through which incoming students could reach out to others in the program for practical information, course and faculty information, etc.

Check our web sites regularly for new information, resources, and upcoming events:

EPMP Engineering  www.epmp.rice.edu
PSM Natural Sciences  www.profms.rice.edu

For comments or questions, please contact us at:

EPMP Engineering  epmp@rice.edu
PSM Natural Sciences  profms@rice.edu

Check out our Rice PSM Facebook sites:

EPMP Engineering  www.facebook.com/epmp.rice.edu
PSM Natural Sciences  www.facebook.com/professional.science.masters