



Newsletter

Petroleum Engineering

Vol. 11, No. 1

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Colorado School of Mines

Greetings from Craig Van Kirk

On behalf of CSM's Petroleum Engineering (PE) Department I extend to you my warmest regards. It is my pleasure to share this eleventh annual newsletter with you and bring you up to date on our activities during the past year and the current status. In quick summary, our program's popularity is growing faster than ever before, in many areas, such as, student enrollments, research grants, invitations to cooperate with new partners, and opportunities to serve society in many ways.

In my 26.5 years as PE's Department Head I have never before seen such a challenging combination of local and global opportunities associated with rapidly growing needs for more faculty, staff, and space. These fast-moving tensions create a situation which requires our best practices to maintain quality and balance. I am optimistic that our historically strong PE program will enjoy a healthy future.

Before reporting more on CSM and PE, first I am grateful to say that my family is healthy and happy. My wife Denice and I enjoyed several trips together representing CSM during the past year, to the Middle East and rafting 185 miles down the Colorado River through the Grand Canyon.



Craig Van Kirk

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Craig and Denice on the Colorado River.



Craig along the Colorado River.

During the winter and spring we went to Dubai, Abu Dhabi, Oman, Saudi Aramco, and Bahrain. Meetings with representatives from the national and private oil companies, governments, universities, and SPE proved to be very productive in garnering further support from current and new partners.

In early August Denice and I spent a great week with CSM Geology professor John Warme on a geological expedition through the Grand Canyon on the Colorado River. John guided 32 of us on 2 large rafts, with daily hikes up side canyons to study world-class examples of numerous types of geological settings, fossils, and historical sites. Most of the passengers were geologists (or PE's), and the entire experience was most enjoyable and educational. I highly recommend such a trip as this to anyone. If you are interested, I would be happy to advise you on some of the tactics for avoiding the rattlesnakes, scorpions, bats, et al.

Our two children Sam and Connie and their spouses Amy and Tom have blessed us with 6 grandchildren, 3 each. In prior Newsletters I have introduced the older 5, and now I can announce the youngest, Ryan, who was born last December to Connie and Tom. Both young families are happy and healthy. Please keep Tom especially in

your thoughts as he is now on his 3rd deployment to the Middle East, most recently flying his Marine helicopter between Beirut and Cyprus.

Now, for more CSM news, our new President Bill Scoggins took over the office in June upon President John Trefny's retirement. John should be saluted for his many years of service and guidance for CSM, having joined CSM's faculty in 1977, one year before I did so.

New President Scoggins brings many years of global petroleum industry experiences at upper management levels to CSM, appropriately at these times when CSM is going through transitions and growth in size, funding levels, and sources. You will enjoy meeting Bill and his wife Karen.

One of the major new good news items is the planned new PE building. Our 1980 alumnus Tim Marquez and his wife Bernadette have donated \$10 million toward construction of a new building to house PE in a state-of-the-art new home. Many thank you's to them and our other continuing supporters. At this stage of the multiyear project, CSM is in the process of engaging the architectural and engineering firms and in organizing the fund-raising committee which will supplement the original



Along the Highway.

\$10 million grant with a goal of approximately \$35 to \$45 million. All of you readers of this “News” are invited to participate in helping create a new “Showcase” venue for PE. Please be prepared to offer advice, ideas, and any other kinds of \$upport you can imagine.

Also, I am pleased to announce the recent news that our professor Dr. Hossein Kazemi has been named the first occupant of the “Chesebro’ Distinguished Endowed Chair in Petroleum Engineering”. Hossein’s career accomplishments and current productivity attract significant positive real benefits to

CSM and PE, and his new title on our faculty is well deserved and well placed. The sponsors of the endowment, CSM PE alumnus Steve Chesebro’ (class of 1964) and his wife Dollie, are to be thanked for their many years of significant support of our program.

Another new endowed chair provided to our PE program was recently announced by the donor Harry Campbell, CSM PE alumnus from the class of 1942. I extend our deepest appreciation to Harry, and we are now in the search process to fill this new prominent position.

For the start of this Fall semester we are fortunate to have added to our faculty a new Lecturer, Dr. Linda A. Battalora. Linda received her Juris Doctor in law from Loyola University in New Orleans in 1993, after earning her BS and MS degrees in PE at CSM in 1986 and 1987, respectively. Welcome Linda, and read more about her later in this Newsletter.

Speaking of faculty, I am sorry to announce that 3 of our tenure-track faculty have chosen to leave CSM recently. Richard Christiansen retired in May at the end of last semester, Larry Chorn resigned in June to return to industry, as did John Fanchi in July. The global shortage of PE’s at all levels, the realities of being a university professor, and the extreme pressure to hire more personnel in the petroleum industry have created a highly competitive situation with universities at some disadvantage to attract and keep good people.

Just like every other organization related to our industry, we are currently in a serious search campaign to identify and add new faculty members to our staff. Based on last year’s student-to-faculty ratio numbers we justified 3 times as many professors as we actually had. With the loss of our 3 professors during the summer, our needs for help are even more severe. Our well earned popularity simply attracts an overabundance of opportunities, from new students, research projects, and joint programs with new global and local partners.

Our student enrollments are exploding. Last year we graduated 40 BS degrees, almost double from 2 years ago. This year our senior class is 71, and next year it will be 102. Over a 4-year period our BS degree production will have increased by 4 times. Naturally, the companies that hire our graduates are delighted.

Similar growth is occurring at the graduate levels, with this year’s group of Masters and PhD students totaling 75, our largest ever. At both the undergraduate and graduate levels our student body is nicely diversified with students from all over the world, a very healthy environment for a “whole-person” learning experience designed to best serve the students throughout their careers.

Recruiting for our students continues to be strong, with 100% job placement prior to graduation. Starting salaries for our BS graduates averaged \$73,000 per year, not counting the significant

signing bonuses most of them received. Naturally, graduate student salaries were higher, with PhD offers significantly exceeding \$100,000 per year.

I am proud to say that we continue to attract excellent quality students from around the world, including the Denver metropolitan area. Our faculty and staff are as dedicated as ever to the students, our number one priority. Annual student evaluations of our faculty teaching PE classes always ranks professors well above CSM campus-wide averages. Also, frequent (daily) emails from recent graduates consistently express gratitude for PE's faculty and the thorough education we have provided. The practice is our pleasure, and the appreciation is very satisfying.

The PE Department continues to strive to achieve excellence and balance in the traditional areas of teaching, research, and service. Each area is growing to unprecedented levels, with significant further growth achievable if sufficient resources are available, that is, faculty, support staff, Teaching Assistants (TA's), operating funds, space (our new building), et al.

The quality and thoroughness of our undergraduate program will be reviewed for accreditation this October by ABET, the Accreditation Board for Engineering and Technology. We enjoy this critique every 6 years, and we always pass with a very strong evaluation.

As usual, we are preparing for the Society of Petroleum Engineers Annual Technical Conference and Exhibition in San Antonio in late September. We will cancel all PE classes for the 3 days Monday through Wednesday, so that PE faculty can attend and any PE student who wants to can also attend. As always, the PE Department will provide significant resources to fund much of the cost for the trip for any PE student. We will host our annual CSM alumni reception on Tuesday evening from 5:30 to 7:00 PM on September 26 in Salon J of the Marriott Hotel, so please try to attend, it will be a most enjoyable evening.

One final comment on the PE Program's accomplishments to date and attractiveness for further investment: the measure of the value of the PE Program is evidenced by feedback from our graduates and our industry and research partners, the excellent performance of our graduates in other graduate school programs and in private industry, solid accreditation reviews and assessment, and strong financial support from off-campus sources. In short, we have many customers and supporters. We could have many, many more.

The frequent e-mails, letters, cards, phone calls, and visits you alumni, friends, and partners provide to use are very much enjoyed and appreciated, plus they deliver a significant portion of our overall satisfaction.

I want to thank you alumni and other friends of the Program for your continuing financial support, which enables us to provide many exceptional educational experiences for our students; such as, the annual SPE Conference, their off campus meetings, our outstanding computer lab facilities and coordinator, our two Summer Field Sessions off campus, and many others. The result of the healthy partnership among you supporters, our staff, and our students is the continuing excellent yearly graduates who enjoy successful careers in our global petroleum industry.

It is my pleasure to provide this report to you and to be a part of CSM's PE team.

Please keep in touch with us and come by for a visit any time.

My best to you and yours,
Craig

Letters from Our Faculty

Jennifer L. Miskimins



Jennifer Miskimins

Greetings once again from Golden! As you've likely gathered from the other articles in this newsletter, it's an interesting time in the department with things such as increasing enrollment, faculty changes, and a new building on the horizon. Our industry is at a fascinating point in its history, and the changes are even being felt in "the halls of academia".

From my perspective, the teaching and research fronts are keeping me busier than ever. The FAST Consortium has continued to grow, and we now have 22 member companies, with six ongoing projects in the areas of stimulation and hydraulic fracturing, with around ten students involved at any given time from both the graduate and undergraduate programs. The program has graduated four M.S. students in the last twelve months, and you will start seeing the results of this work published in SPE and other literature sources this fall. A separate research project that might interest some of you is we are publishing the results of lab-based propellant fracturing tests and associated reservoir-scale modeling at this year's SPE meeting. This particular project was fun but had several challenges—including acquiring 41,000 data points in one second!

Classroom-wise, the increasing enrollment has brought and is continuing to bring many challenges. The Massadona camp was overflowing with the number of students that attended (please see the PEGN 316 article in this newsletter), and the multidisciplinary senior design class is also seeing growth going from ten teams of five last spring to almost double that this coming year. The increased enrollment is definitely a "blessing in disguise" with the opportunity to meet so many new students but the difficulty of figuring out where to put them all!!

Other arenas that I am currently involved in include an increased focus of my time on unconventional reservoirs and the modifications to stimulation techniques that are necessary to produce them. This will be an interesting and active area for several years to come with many associated challenges and opportunities.

As always, feel free to contact me anytime at (303) 384-2419 or jmiskimi@mines.edu or visit my web site at www.mines.edu/~jmiskimi/. I hope to see you at SPE in San Antonio!!

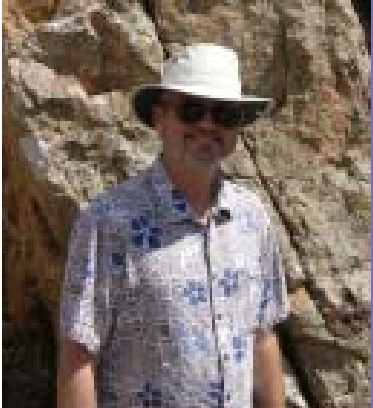
The Fast Consortium

Hector Wills, Russel Roundtree, Chris Green, Daniel Benedict, Cathy Tolliver, Henry Lopez, James Paige, Tony Franzone, Arvind Chittambakam, Ty Woodworth, Amrut Athavale, Jennifer Miskimins, Rob Tonnsen



Letters from Our Faculty

Alfred W. Eustes



Bill Eustes

As it is with your operations, this year finds the department ramping up our op-tempo. The field session this year had 90 students. This fall, PEGN 311 has 80 students registered (did I run ten of them off?). Keeping our petroleum family values together is getting more challenging. In any event, here is a synopsis of the year.

My students keep coming and going, which is a good thing. I had Francisco, my Ph.D. student, graduate and go on to Shell. And Christian, my Leoben research student, is moving on to BP this September. I've had the pleasure of some very good students. They make this work most enjoyable. As for undergraduates, those that are and were involved in the AADE always stand out in my mind. That doesn't mean that those of you not in the AADE weren't thought of highly, too. I thank all of you for the memories!

Did you know I am a television star, now? Yes, I was interviewed for Modern Marvels: Drilling, on the History Channel. The show was aired in May. They set up the interview in the drilling simulator laboratory and interviewed me for forty minutes. However, only 54 seconds were actually used. I have 14 minutes and 6 seconds of fame left to go.

In February, Bakersfield SPE Drilling study group asked me to speak at their meeting. I was honored to do so and had a very wonderful time. However, when I accepted the engagement, I somehow didn't realize it was on February 14th. This is not necessarily a good day to leave one's wife. I had some 'splainin' to do when I got back. Seriously, Susan was quite good natured about my absence.

In March, the Ice Core Working Group met in Denver. Will Fleckenstein and I helped to mold conceptual design and operational parameters of the next generation ice core drill for the National Science foundation. The drill has been built and sent to the Greenland Ice Sheet this summer for evaluation. The tests were successful, although there are still some issues to be resolved. You can see parts of the aforementioned Modern Marvels on Drilling, or go to <http://waisdivide.unh.edu/> for photos.

Last April, I was asked again to review proposals for NASA's Astrobiology Team. I spent the week reviewing proposals. Now you may ask why I, a drilling engineer, am reviewing proposals on astrobiology? Well, where would most self-respecting critters hide from the hostility of their respective environments? Underground, of course, and it will take a drilling engineer to get the scientists to those locations. Besides, you never know when a drilling engineer will be needed to drill a hole in an asteroid and destroy it with a large nuclear weapon before the asteroid impacts the Earth. It is good to have knowledge like that.

In June, I again had the pleasure of teaching Drilling Mechanical Engineering at the Mining University of Leoben, our sister school in Austria. That went well. While there, I had the opportunity to attend the SPE Student Paper contest hosted by the Wien Chapter of the SPE. It was at the Hotel Galbov mlyn in Slovakia not far from Bratislava. The students presented well. In addition Ramona Graves, who I congratulate for being awarded an honorary doctorate from MUL, and I represented the department at the 50th anniversary of the petroleum department there. That was a great party and a grand time! My family joined me after the class was completed. We spent the next two weeks touring

Letters from Our Faculty

Austria and Bavaria. Austria is an outstanding country to visit. They have friendly people, neat castles, incredible natural sites, and very photogenic mountains. I can even understand most of the traffic signs. I highly recommend a visit.

Finally, I am honored this year to be this year's chair of the Petroleum Division of the International Petroleum Technology Institute of the American Society of Mechanical Engineers. Most of you probably know that my BS and MS degrees are in mechanical engineering. If you have any interest or questions regarding the Petroleum Division, by all means contact me. I would be pleased to talk to you about the division.

This year was my tenth field session. With 90 students, we had to break into three simultaneous groups. I called them Alpha, Bravo, and Charlie teams. All three groups stayed in the Rockies again this year. I handled Alpha team. One of the students insisted that when I called for the students to gather, I holler out, "Alpha Team, assemble." She must have had a military up bringing, I guess.

In any event, the companies that we visited showed us a great time, as usual. With three groups, the majority of the companies hosted us three times in a row. Now that is a call above and beyond our expectations. And we are most grateful! Thank you to all. As always, I want to thank the many people who made this class possible. I have listed them below.

Kerr-McGee Oil and Gas Corporation	Anadarko Petroleum Corporation
Ted Pagano	Justin Raithel
Mike Lingreen	Brandon Vandervoort
Jerry Cuzella	Questar Exploration and Production Company
Larry Grunewald	Diana Hoff
Ensign Drilling	Kevin Williams
Frank Amos	Shell EP Americas
Pioneer Natural Resources	Eric Brueswitz
Stephanie Basey	Kelda McFee
Bill Chase	Robert Dehnke
Dave Nelson	Matt Gardener
Thomas Sheffield	FMC Technologies
Thomas Segur	Jeff Erickson
Calfrac Well Services Corporation	Randy Martin
Dana Larson	Schlumberger
Chad Buffington	Jason Pearson
Paul Salaz	Tim Taylor
Elk Petroleum, Inc.	Bill Barrett Corporation
Bryant Mook	Dominic Spencer

One of the things I like to do in these newsletters is to be certain to list everybody that helped make these field sessions the successes that they are. However, in the hustle and bustle of the session, I sometimes don't get everyone's name that helped us. I apologize if I have misidentified or even left you out of our thanks. If I have inadvertently left you off, please let me know.

This field session saw no injuries of any kind, as usual. That is because we stress safety, safety, and safety!

I hope to see you at the San Antonio ATCE in September!

Letters from Our Faculty

Hossein Kazemi

In the academic year 2005-2006 I continued my involvement in teaching, research, and technology transfer. As always, I am grateful for the support I received from every one of my colleagues in the department, especially Dr. Erdal Ozkan who has relentlessly worked hard to promote technology, obtain research funding, take care of graduate student admission and administrative matters.

Erdal and I are the co-directors of the Marathon Center of Excellence for Reservoir Studies. The Center houses ten graduate students, has conference facilities, two high-resolution flat panel displays, and two double-screen computer workstations. The Center has received \$100,000 annually for the past three years from Marathon Oil Company. The Center completed a \$360,000 two-year contract from Kerr-McGee (for-

merly, West Port Resources) for a project on Geological Reservoir Characterization and Reservoir Engineering Evaluation of Wasatch, Mesaverde and Blackhawk formations in southeastern Utah. In this project we collaborated with Dr. Neil Hurley and Dr. Nick Harris of Geology and Geological Engineering Department. The Center also received additional financial support from Saudi Aramco, Repsol YPF, and Questa Engineering for projects in reservoir simulation involving multi-scale computing, naturally fractured reservoirs, and coalbed methane production.

At the Center, Dr. Ozkan has received funding for several other projects to include Pump Rate Deconvolution (Baker Hughes), Horizontal Well Perforation Optimization (Saudi Aramco) and Gas Well Stimulation and Optimization in Fractured Barnett Shale (EOG).

My current research focuses on the following areas:

- 1. Efficient Computation in High Resolution Reservoir Models.** Here we exploit the subtleties of the *multi-mesh/multi-scale* computing to improve speed of computation and account for more accurate reservoir physics and reservoir heterogeneity. Both streamline simulation and dual-mesh computing are included in our studies. The most notable advantage of multi-scale computing is *accounting for the small-scale effects, minimizing the need for upscaling, providing high computing accuracy, and conforming to the high permeability flow channels and other architectural features of the reservoir.*
- 2. Improved Physics in Naturally Fractured Reservoir Models.** Here we focus on *small-scale effects* such as the combined effect of gravity force and capillary pressure on the matrix block drainage. Similarly, we are looking at *gas diffusion* mass transfer rate from fracture into the matrix-saturated oil and its effect on gravity drainage rate of oil and timing. There are also other process-specific small-scale features, such as *easy to access pores* versus *not so easy to access pores*, which lead to a lot of oil bypassing depending on the mechanism of production.



Hossein Kazemi

Letters from Our Faculty

- 3. Geomechanics and Its Implication in Reservoir Performance and Modeling.** We adhere to the belief that stress changes resulting from pore pressure change can affect reservoir performance both in the short and long term. Geomechanical computations, when complemented with *microseismic* and *earth tilt* measurements, could be very helpful in reservoir development strategy and enhanced oil and gas recovery planning.
- 4. Optimization of Production from Unconventional Oil and Gas Reservoirs.** It is well-known that creating a *massive fracture network via hydraulic fracturing* can create large surface areas to increase oil and gas drainage from the pores. The unresolved question in my is how the fracture network is created—is it because of the pore pressure change during hydraulic fracturing or the result of fluid diversion into predisposed weak zones? If we can answer the question accurately, we should be able to use the information to optimize well production in low permeability reservoirs.
- 5. Improved and Enhanced Oil and Gas Recovery.** The current estimate of the average oil recovery worldwide is about 33 percent. Probably, this figure improves to about 40 percent for the large and technically advanced oil companies. I believe there is a lot of room for improvement in this area via prudent use of technology.

In addition to teaching, I had the privilege of working with several graduate students. The team work among these graduate students was excellent— leading to substantial productivity. Furthermore, I had several geophysics graduate students in my reservoir modeling class who had a keen interest in *rock physics* from fluid flow perspective versus geophysical and linear elasticity perspective. Their input to the class discussions helped me appreciate the need for a stronger interdisciplinary collaboration on *rock physics* and *geomechanics*, which I have included in our research plans.

I visited Aramco's technology center in December 2005 and made a couple of presentations at the center and in the neighboring King Fahad University. I participated in a workshop on Naturally Fractured Reservoirs (February 2006), attended a workshop on Unconventional Gas (April 2006), and was a discussion leader in a forum on Characterization and Modeling of Naturally Fractured Reservoirs (June 2006). I visited PEMEX in Ciudad del Carmen in May 2006 to present a talk and participate in a discussion on improving reservoir performance for some major fields. I also participated in Marathon Oil Company Upscaling Symposium (July 2006) as a panel member and a speaker.

I continued to chair the SPE Committee on Short Books. The goal is to publish short technical books on timely topics of interest to SPE, SEG and AAPG members. These books should promote collaboration among various disciplines in our business. The first three published books include *Petroleum Geostatistics* by Jef Caers, *Seismic Inversion* by Mrinal K. Sen, and *Naturally Fractured Reservoir Characterization* by Wayne Narr, David W. Schechter, and Laird B. Thompson. Several other books have been planned and are at various stages of completion.

Finally, I am honored and humbled to be the recipient of the Chesebro' Distinguished Petroleum Engineering Chair. I will do my best to meet the expectations of this wonderful chair.

Letters from Our Faculty

William W. Fleckenstein



Will Fleckenstein, Paris

As an adjunct professor, I spend a portion of my time consulting on projects and the rest doing research and teaching as needed. The need for me to teach undergraduate and graduates fluctuates from year to year, and this is definitely an upswing year. Many students are seeking a petroleum engineering education, and the rapid increase in students has been an exhilarating experience for everyone. Currently I am teaching a class in Workover Operations, teaching the Petroleum Engineering portion of the graduate multi-disciplinary course in Exploration and Production, and directing several students with Dr. Eustes in an independent study project in Drilling Fluids.

The NSF invited me to participate in an international conference on Ice Drilling in Grenoble, France, and give a talk on the oilfield drilling technologies that may be useful. The conference topic was accessing SALE (Subglacial Antarctic Lake Environment). Antarctica is mostly covered with an ice sheet several miles thick, and below the ice in many places exists water in liquid form. The largest lake is Lake Vostok, which is the size of Lake Ontario, below 3,500 meters of ice. The lake takes its name from the Russian Ice Station Vostok, which was sited directly above the lake, before anyone suspected the lake was there. The flat nature of the ice over the lake is very advantageous for landing planes on skis. The Russians have cored to within several hundred meters of the ice interface and are poised to enter it. It is a tricky subject – the lake has not seen the light of day since it was frozen over millions of years ago, and it is anybody's guess what is in the lake, which at its deepest point is over a thousand meters deep. One would like to not contaminate the lake with drilling fluid, but it is also suspected that the lake may be charged with CO_2 , and may react like a carbonated can of soda that has been shaken, if the pressure is released – a really big can of soda.

Speaking of ice, the first ice core was removed in Greenland using a rig that Dr Eustes and I helped give birth to the conceptual design several years ago. The rig will be mobilized to the West Antarctic Ice Sheet for ice core retrieval for paleo-climatic studies, just in time for the International Polar Year, 2007-2008. It is good to be able to help on this issue, and also an opportunity to see the raw data on global warming.

By the way, the price of oil of some grades has recently been exactly 10 times the lowest price posted in 1986, when I graduated from CSM. It is difficult to believe in 1998 it again was about 10% of the highest price this year. Needless to say, there are lots of interesting consulting projects to work on, which has been helpful to bring a little of the “real world” into the classroom.

I hope everyone has had a great year and look forward to see many of you at the CSM Alumni Reception at the SPE ATCE.

Letters from Our Faculty

Linda A. Battalora



Linda Battalora

Hello! I am Linda Battalora. I received my Bachelor of Science and Master of Science degrees in Petroleum Engineering from CSM and my juris doctorate from Loyola University School of Law (New Orleans). I am pleased and honored to join the Faculty as a Lecturer.

My teaching focus will be undergraduate and graduate seminars (writing and oral intensive) as well as select petroleum engineering courses. Having served the oil and gas industry as an engineer, attorney, in-house counsel and international negotiator, I am enthusiastic about working with students to prepare them for their careers after graduation. I am also looking forward to working with my esteemed colleagues within the Department (including two of my former classmates – Mark and Will) and other faculty members campus-wide as we strengthen and further develop our core and cross-disciplinary courses. It promises to be an interesting and rewarding year!

Ramona M. Graves

I know we send out the PE Newsletter every September, so I don't know why I am always the last person to get in my article!?!? My sabbatical which ended in December 2006 was very rewarding, but as you might recall from last year's article, I was doing a lot of international travel for teaching and research. This year I was going to stay "close to home". Then in the spring the Rector of the Mining University of Leoben, Austria came to Mines to announce that they were awarding me an Honorary Doctorate for my "significant scientific achievement". I received this award in June and coupled it with conferences and meetings though out Eastern Europe.

I was/am overwhelmed with this honor. Actually, I was so surprised that I was literally speechless. Bill Eustes, also attending the dinner where this was announced, broke the silence by saying "I've never seen her like this – I wish you would have told her right before our weekly staff meeting!" After 25+ years, I've finally gotten the students all trained to call me Dr. so now I am working on getting them to call me Dr. Dr.

With all the traveling that Craig is doing for CSM, the administration finally gave me the official title of "Assistant Department Head". I was also pleased by this until I realized that every time Craig comes into my office the conversation starts with "Since you are the new Assistant Head....." Unfortunately, this also means that I will have to put my research on laser-rock destruction on the back burner for now. As you know, the department is going through some interesting times (I believe this is an ancient Chinese curse) so I had to make some tough decisions and giving up this wonderful project *for a while is something I felt I had to do for the students and the department.*



Ramona Graves

Letters from Our Faculty

Dr. Ramona Graves, Continued

One of my most important tasks for the up-coming semester is to Chair the search committee to hire several new faculty . Alumni - WE REALLY NEED your help by suggesting to colleagues and/or yourself considering a position in this great department. We know that your companies' demand for our students is great; however, without new faculty the supply will not be there to meet the demand.

Be joyful – it is still good to be in the oil business!

Ramona

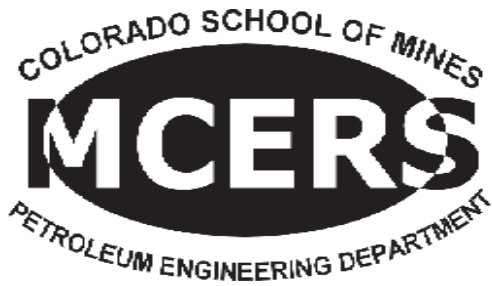
Remaining Faculty

Drs. Mark Miller, Erdal Ozkan, and Turhan Yildiz were too busy getting ready for the new school year to get an article written for this year's newsletter.

Faculty and Staff



Dr. Craig Van Kirk; Dr. Hossein Kazemi; Eleanor Maes, Program Assistant; Dr. Linda Battalora; Dr. Erdal Ozkan; Al Sami, Laboratory Coordinator; Dr. Bill Eustes; Denise Winn-Bower, Administrative Assistant; Dr. Turhan Yildiz; Dr. Mark Miller; Dr. Ramona Graves; Dr. Will Fleckenstein; Dr. Jennifer Miskimins



Marathon Center of Excellence for Reservoir Studies

Monday November 21, 2005 a reception was held at MCERS – the Marathon Center of Excellence for Reservoir Studies. This center was opened with the generous donation of \$300,000 over the last three years to the Petroleum Engineering Department at the Colorado School of Mines.

Dr. Hossein Kazemi and Dr. Erdal Ozkan are the co-directors of the center, which provides research to Marathon along with other sponsors and research partners: Kerr McGee Corporation, Saudi Aramco, Repsol YPF, Baker Hughes, Yukos, Questa Engineering, Nitec and Ireservoir.com .

This reception celebrates a time of thanks to Marathon for their support building the office and support the graduate students. The saying goes “you need to spend money to get something back” and Marathon put no expectations on MCERS, but knew they would receive great returns. MCERS has been able to triple the money donated by Marathon through research projects from other companies.

Fourteen graduate students have worked under MCERS. Seven graduate students have completed their degrees and new students will be starting in the Spring semester. In the last two years MCERS has taken on 9 research projects. 6 have been completed and 3 are still in progress. They have also presented 9 papers at technical conferences, a few have been publishes and our co-directors Drs. Ozkan and Kazemi have been invited speakers. A new consortium will also be started under MCERS in January 2006.



Dr. Hossein Kazemi; Dr. Erdal Ozkan; CSM Vice-President Dr. Nigel Middleton; CSM President Dr. John Trefny; Tim Tipton, Vice-President of Technology for Marathon Oil Company; Paul Gardner, Manager of Technology Services for Marathon Oil Company; and Dr. Craig Van Kirk at the opening of MCERS, November 12, 2005.

Student Organizations

Society of Petroleum Engineers



Jim Shuss

The Colorado School of Mines Petroleum Engineering Department has been part of the university's academic excellence for 90 years. For the last 24 years, the CSM Chapter of the Society of

Petroleum Engineers (SPE) has helped to allow students to get involved and further educated in this growing industry.

I am Jim Shuss and I am very honored to be the 2006-2007 president for the CSM Chapter of the Society of Petroleum Engineers. The CSM SPE chapter is one of over 130 international chapters found in 42 countries around the world. On this campus, we are proud to be one of the largest organizations and known for our activities on campus. Anyone at CSM who is interested in learning more about the oil and gas industry is invited to be a member.

Members within the SPE Chapter benefit from the organization in many different ways. These benefits include exposure to technical experts and presentations about new technologies within the industry throughout the school year. Opportunities for networking including travel to the annual ATCE conference and our annual Joint Session give student members firsthand exposure to the industry they are entering. These opportunities are nearly exclusive to the CSM SPE Chapter and are truly appreciated by the students.

For this school year, our SPE Chapter will have a booth set up during the informative Celebration of Mines to let new students learn more

about our group and department. The fall semester of 2006 will be highlighted by a trip to the ATCE Conference in San Antonio, Texas at the end of September. The conference is one of the best experiences for students during the entire year. Students get to listen to papers, visit companies and industry vendors, and meet many professionals from the industry, all at a low cost, thanks to the generous donations from alumni. Smaller lunch and learn presentations will be occurring throughout the semester and new members are very much encouraged to participate in these presentations.

As is occurring in the industry, growth is being noticed here in our department and this year, one of my main goals as chapter president will be to grow this organization without losing the close-knit relationships between students, faculty, and industry. As our department grows, I don't want to let this fantastic opportunity to reach out to new students fall by the wayside. If anyone, student or alumni, has any questions about this great organization, please feel free to visit the CSM SPE Chapter website located within the CSM website at: www.mines.edu/stu_life/organ/spe/index.html or contact me personally via e-mail at: jshuss@mines.edu. Thank you very much and as always, Go Diggers!!

American Association of Drilling Engineers

August holds more than a few perennial milestones with in its shore thirty one days: the daytime highs start dropping to tolerable, football is back, and students wrap up their internships and prepare for another school year. Here at the Colorado School of Mines August means that we will be busier than ever, and the AADE is no exception. The Mines chapter of the AADE was founded in 1996 and the first student chapter in the nation.

AADE offers the Petroleum Engineering

Student Organizations



Jake Rowden

students to learn about real world drilling practices taking place in the drilling industry today. This is done with bi-monthly meetings where guest speakers from industry come in and speak on various hot topics happening in the industry. We

have lined up a variety of speakers to give “Lunch and Learns” for the students so that we can stay current with the technology of today. Also, the professional chapter in Denver will present two scanners to the Petroleum Engineering department to help update our computer lab.

The sophomores will be taking their drilling class this semester and one of the topics covered is blow out prevention. I am working with a company to come and give an International Association of Drilling Contractors (IADC) course so that students can be certified in blow out prevention. This will be a valuable tool for students to have when they start their second internship or begin their career.

In the near future the AADE members will be showcasing our organization at the Celebration of Mines at the beginning of September. This is usually a joint venture with student chapter of the Society of Petroleum Engineers (SPE) here on campus. A few joint events with SPE are also in the planning stages for later this fall. These include presentations that deal with the drilling industry but also have a strong emphasis of Petroleum Engineering involved.

One of my goals is to have the student chapter of the AADE to be more integrated with the professional chapter in Denver. The officers and I will be setting up more meet and greets with the Denver chapter this year in order for the students to gain networking skills and hear war stories about the drilling.

The officers and I are excited for what is to come this year for AADE. We can never have too many events planned so feel free contact me with any ideas.

Jake Rowden
wrowden@mines.edu

Pi Epsilon Tau



Jessica Smagala

The Mines’ chapter of Pi Epsilon Tau (PET) is looking forward to another fun-filled and productive year. PET, the Petroleum Engineering Honor Society, is an organization founded on the principles of loyalty, fellowship, and cooperation. We aim to foster a

closer bond between our members and industry, broaden the scope of activities of our members, and maintain the high ideals and standards of the engineering profession.

To be eligible for membership, undergraduate students must have a cumulative grade point average of 3.00 and graduate students are required to have a grade point average of 3.25. Scholarship, leadership, and sociability are also taken into account during the selection process. Currently, the CSM chapter has over thirty undergraduate and graduate students.

In April, the chapter elected Jessica Smagala as President, Indar Singh as Vice President, Linda Mohammad as Secretary, Chase Downs as Treasurer, and Nate Brown and Weston Hamilton as Initiation Chair. As the new executive council, we are organizing several activities for the 2006-2007 academic year with the help of Dr. Ramona Graves, our faculty advisor. In addition to our community, campus, and department

Pi Epsilon Tau, Continued

service projects, we are planning a fall barbeque to facilitate communication between our members and the department faculty. It is also important to us that we continue promoting the Petroleum Engineering department by helping with *Discover CSM* and providing department tours for those interested. If you have any questions concerning the Mines' chapter of PET or suggestions for service projects, please contact me, Jessica Smagala, at jsmagala@mines.edu.

Field Session 315



Three monster rigs at work for Questar.



Darcy Examines a piece of coal.



The gang standing on Independence Rock.

Field Session 315



Alpha Team assembling while listening to Elk Pet.



Frac job lesson while visiting Pioneer.



A short geology lesson while visiting Pioneer.



Double time team! Questar working hard.



Listening to Pioneer talk about green oil.



Alpha Team disassembling from Shell.

Field Session 316

So, how many students were in *your* class at Massadona? That number has varied greatly throughout the years, but this year was definitely toward the higher end and was the largest by far in a very long time. The final count was 72 students, five TA's, and two very stressed instructors. We made good use of every square foot that Massadona has to offer, but Donna Anderson and I are pleased to report that we all survived and left the town standing (well, for the most part).

We need to thank several folks for their generosity in hosting us including Ron Wackowski from Chevron, Russ Griffin from Questar, Steve McPherson from Kerr-McGee, and Craig Stratton from Production Logging Services (PLS). Handling a group the size of ours could not have been easy, and we appreciate their willingness to do so.

Every morning during camp, I have the students submit “morning reports” to me. These reports can address anything that the student desires—from questions about the previous day's exercise to how many Cup of Noodles they had for dinner—and helps me to keep a finger on the pulse of the camp. This year, Amanda Rebol (Class of 2007), submitted one of the more creative reports I've seen, and I thought it might hit home with several of you. Amanda gave me permission to publish it in this newsletter, and so for your enjoyment:

PEGN 316: Day 11

I can't flush the toilet, And I don't care
I have cracks on my toes, And dirt in my hair

I've stopped flicking bugs, That join me in bed
Stop cringing when mice, Show up very dead

My eyebrows are bushy, No plucking for weeks
Running low on clean clothes, My bag really reeks

My skin got so roasted, And now I am peeling
And way too much booze, So I'm constantly reeling

The ice is all melting, The meat is all leaking
Our standards for edible, Are rapidly sinking

I run around barefoot, My calluses thick
Cuts, bug bites and splinters, My skin's lookin' sick

My contacts remain, In my eyes every night
Fooling with saline, Would be quite a sight

We stopped sweeping the cabin, The dirt has
 prevailed
And organization, Has completely failed

Windows wide open, Whenever we change
Guys chill in boxers, So this doesn't seem strange

No more saying sorry, For the way that I smell

A whiff of this camp, Must remind one of hell

Showers in Rangely, Nurse me back to health
But step right into camp, And feel covered in filth

Allergies are cause, For near-constant sneezing
And congested nights, Yield coughing and wheezing

Time in the field, Is an everyday trip
Screwing up strike, And misreading dip

Navajo, Mancos, The names run together
With endless sketching, Those rocks run forever

Must care about grain size, Crossbedding and
 dunes

Overheating outside, Gotta get water soon

Lighting strikes trees, Rain gets beds damp
Is there anything that, Won't happen in camp?

I long for a warm bed, A meal from my mom
A night when I sleep, Through the crack of dawn

Carpet for my feet, A roof for my head
Shoes that are missing, Toes made of lead

I don't mean to complain, Now don't get me wrong
It's not personal, I've just been here too long.

Field Session 316



Dan, the TA, gets thrown off a cliff.



Hurricane Hits Massadona.



Don't Look Down.



The girls finally figure out how to keep Colin out of their lunches



Massadona, Class of 2006

Alumni Reception at SPE Conference

To Our Petroleum Alumni:

Your attendance is requested at the Colorado School of Mines, Petroleum Engineering Alumni Reception to be held during the Annual SPE Technical Conference in San Antonio, Texas, September 24-27, 2006. The Alumni Reception will be held on Tuesday evening, September 26th at the Marriott Hotel, Salon J, from 5:30 to 7:00 pm. The charge will be \$30, because students are free. As always, there will be plenty of food, with a cash bar.



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