



Petroleum Engineering

Newsletter

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THOUGHTS FROM RAMONA M. GRAVES



Dr. Ramona M. Graves

It's been a good year! Manika Prasad, who you met in last year's newsletter, has just completed her first year with us. Despite some personal setbacks she had a very successful start. This year we will be welcoming THREE more new faculty – Yu-Shu Wu, Professor and Dwayne Bourgoyne, Assistant Professor officially start in August and Xiaolong Yin, Assistant Professor starts in January. Yu-Shu comes to us from Lawrence Berkeley National Laboratory, Dwayne from ExxonMobil Research,

and Xiaolong from Princeton (see their articles in following pages). Even though they have not officially started they are already making significant contributions.

Yu-Shu invited me to China so he could introduce me to some of our future research and education collaborators. While there I met with his university colleagues at China Petroleum University and Daqing Petroleum University and his industry connections at PetroChina and Sinopec. I returned home a week before the Olympics started and the television coverage did not begin to do justice to what a magnificent city Beijing has become! My daughter Lacey went with me and was hosted by Yu-Shu's lovely wife Jiamin, and his daughter Stephanie.



Yu-Shu and Ramona on the Great Wall of China.

Dwayne got an early start this summer and has been actively writing research proposals. He has also been talking with various CSM administrators about reviving the Energy Minor and acting as Co-Director. Additionally he did some teaching with our Libyan outreach students. Although Xiaolong is finishing his commitments at Princeton, both he and Dwayne attended Petroleum Super School – our 3 week short course for industry folks who are working as petroleum engineers but have degrees in related disciplines.

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Lacey and mom in the Forbidden City.

I know that I, the rest of the faculty, and staff are really looking forward to working with them. Stay tuned to next year's newsletter for more new hires to come! I'm still the Interim Department Head but The CSM Administration told us the search is still ongoing.

THOUGHTS CONT.

President Scoggins, also known as a PE Research Faculty, has also been giving us a helping hand by guest lecturing in our seminar classes and serving on several PhD committees in the department. If you read the summer issue of Mines Magazine you know we need a lot of help. On page 24 you can see that we graduated the second largest undergraduate graduating class (Engineering was the largest) and the third largest graduate class (we followed Engineering and Economics and Business). I think we have hit steady state with about 100-120 undergraduates per class and about 80 graduate students.

From last year's newsletter you might recall that my son Jacob had fallen off my roof and broken his back and crushed his hip. He has recovered wonderfully! After 10 months of serious down time the doctors gave him the ok to get out of bed and learn to walk again!! His back will have no long term effects but they are still watching his hip, with a possible replacement in the future.

With Jake mobile again, I was able to start traveling again. Chevron has selected CSM to join their University Partner Program. Kazakhstan National Technical University is also part of their UPP so they invited John Humphrey, Head Geology and Geological Engineer, Andre Revil, Geophysics, and Eve Sprunt, Chevron Director of UPP, to Almaty, Kazakhstan to evaluate KazNTU's programs and determine how we can work together for our mutual benefit. We defined several areas of mutual interest for research, teaching, field trips, and faculty and student exchange.



Kazakhstan: Ramona with John Humphrey, Geology and Geological Engineering Department Head, Eve Sprunt of Chevron and Andre' Revil, Professor in Geophysics at the Kazakhstan National Technical University Museum.

We continue to have other strong exchange programs - especially with Leoben, Austria; Delft, Netherlands; and Adelaide, Australia. In March, I visited two of our exchange students, Claire and Zach, at the Technical University of Delft. Discussion with TUD administration and faculty showed the potential develop other research and teaching activities. Since Jennifer Miskimins, now a tenured Associate Professor, was involved in a SPE Tight Gas workshop in the Netherlands at the same time, I also attended the meeting. It is

clear that the US and our department, in particular, are at the leading edge of tight gas reservoir exploitation. With the addition of new faculty, we plan on further capitalize on our expertise, experience, and location!!



Always moving like she is walking into a 100mph head wind.

Marquez Hall plans and fund raising continue with renewed excitement as we near reaching the Tim and Bernie Marquez challenge! Several other alumni have shown their support with substantial donations. See center pages of newsletter for an update and a great quote from Will Fleckenstein as to why he is supporting this exciting opportunity for the PE department. I sincerely hope each of you will consider showing your support through a donation so we will be close to our goal for building and furnishing Marquez Hall when we have the ground breaking ceremonies in the spring. Please contact me with any questions.

And finally - many of you joined us at the Anaheim SPE ATCE alumni function last year when we celebrated Craig's over 27 years of service as the Petroleum Engineering Department Head. What a great party it was! I hope you will all join this year to meet our new faculty, laugh with the old (I know politically incorrect) faculty, and in general, celebrate your alunminess!!



Jennifer Miskimins with exchange students, Claire Anderson and Zach Waite in Delft.

RESEARCH PROFESSOR, M.W. SCOGGINS



Dr. M.W. Scoggins

When students return to Mines in the fall, I like hearing their “what I did last summer” stories. Jobs, internships, volunteer work, travel and family time give our hard-working students a break from their demanding academic lives.

Some of the stories I enjoy most come from students who took part in a summer field session. I understand that PE students traveled to California, Utah and Wyoming during the last

couple months. What great experiences they must have had. Alumni often tell me that summer field sessions are some of their best Mines memories, and I enjoy hearing those stories too.

I’m proud of the many ways this institution gets students out of the classroom, providing opportunities for practical application of studies and often making meaningful contributions to our community. I am particularly looking forward to my presentation at the upcoming SPE Annual Technical Conference and Exhibition in Denver this September, which will give me the opportunity to interact with petroleum engineering students from around the world. These students truly represent our future.

Tomorrow’s engineers need to be not only technically qualified, but also culturally fluent and socially adaptable. I believe Mines is doing an excellent job of building these skills, preparing graduates to make a difference in our nation and around the world. The pages that follow will no doubt tell that story.

Best regards,

M.W. Scoggins

President

Research Professor of Petroleum Engineering

LINDA BATTALORA



Linda Battalora

The 2007-2008 academic year was full of activity and changes in the Department. This year promises to be equally as busy, and the Faculty are excited to meet the challenges of educating and graduating top-quality petroleum engineers.

Again this Fall I will be teaching PEGN 310 Reservoir Fluid Properties and PEGN 481 Petroleum Engineering Seminar. I continue to serve as the Faculty

Advisor to the Student Chapter of SPE and as a Board Member of the Denver Section. Our SPE Student Chapter did an amazing job this year fundraising and hosting events. The

Chapter sponsored a golf tournament in the Fall that raised over \$16,000.00 for student activities throughout the year. The SPE Denver Section and SPE International gave many scholarships to our undergraduates and graduate students during the Fall and Spring semesters. Over 150 students attended ATCE in Anaheim and our celebration to honor Dr. Van Kirk’s many years of service to CSM and the Department. Oilfield Olympics made a return to E-Days. The annual Joint Session Meeting with the Denver Section was a tremendous success. Noted author Robert Bryce (“Gusher of Lies”) was the keynote speaker. Various notables on campus attended the meeting including President Scoggins, Department Heads, Vice-Presidents and former professors. It seems that many people on campus want to be a part of the Petroleum Engineering Department these days. Could it be that we have the most fun on campus?

Last Spring I co-taught PEGN 439 Multi-Disciplinary Engineering along with Dr. Mark Miller and our colleagues from the Geology and Geophysics Departments. Designed for

BATTALORA CONT.

seniors to integrate the first, second, third and fourth year curricula, the students are required to solve two “real-life” industry problems during the semester. A large part of solving the problems is working effectively within a multidisciplinary team. Additionally, I taught another section of PEGN 481 Senior Seminar as well PEGN 598 Graduate Petroleum Engineering Seminar. At the end of the PEGN 598 seminar, we have a celebration of diversity where the students bring food representative of their countries. With over 30 international students in the class, our culinary celebration this year matched that of “International Day” on campus.

In March 2008, I learned that I would be organizing the PEGN 315 California Field Session. Professor Al Sami and I hosted 36 students and 4 TA’s on a petroleum geology field session in Southern California. Dr. Erdal Ozkan and another group of 36 students and 4 TA’s joined our group. Thanks to our Southern California and Bakersfield alums, the trip was a great success. (Read more on the PEGN 315 California Field Session in an additional article).

We look forward to seeing many of you at ATCE 2008 in Denver in September. We always enjoy seeing you on campus for alumni events and recruiting. Thank you all for your continued support of Mines and the Petroleum Engineering Department.

DWAYNE A. BOURGOYNE



Dr. Dwayne A. Bourgoyne

Though I am the newest member of the PE faculty, and have been on campus for only a month, this place seems strangely familiar to me. First, everyone around me seems to know my father—Dr. Ted Bourgoyne, now retired from LSU --and treat me with fondness that makes me very proud to carry his name. Second, I keep meeting CSM faculty, both current and retired, who remind me of him-- authentic, friendly, welcoming, sup-

portive, and, well frankly, colorful. There is simply something special about this industry and the good-natured, hard-working people that make it their calling. Finally, I am finding my own values and goals expressed in the organization I’ve joined. I am very excited to work on the challenges of global energy, both to procure the energy and protect the earth that sustains our way of life. I have learned that CSM has a strong tradition and a continuing role of leadership in that very endeavor.

As a newcomer, I should introduce myself. My degrees are all in mechanical engineering, and I completed my B.S. at Louisiana State University in 1992 before joining Exxon Company USA as a mechanical contact engineer at the Baton Rouge refinery. In 1998 I returned to school to pursue my M.S. and Ph.D. at the University of Michigan in Ann Arbor. For my PhD thesis I conducted large-scale experiments on vortex shedding behind marine structures. In 2003 I joined ExxonMobil’s Upstream Research Company in Houston where I supported experimental and numerical investigations of cargo sloshing in LNG ships and offloading of LNG in heavy seas. Finally, in June of this year, I gave in to my academic yearnings and joined the faculty at CSM. My research interests include natural gas liquefaction and shipping; deep-water, arctic, and unconventional drilling; sub-sea operations; advanced energy systems; and experimental fluid dynamics. I am also enthusiastic about teaching and helping equip the workforce desperately needed by industry. Finally, as a hungry assistant professor at the start of the tenure track, I am deeply committed to any problem that interests anyone enough to fund its study. I offer you my services and stand ready for your call.

ALFRED W. EUSTES



Another year has passed since our last newsletter. And my, how things have changed. Within the department, we have three new faculty, one of which, Dwayne, will be working with me on drilling et al. matters. The number of students in PEGN 311 climbed to 120. We had six lab sections last fall, and I had 115 in PEGN 361. The graduate class on Advanced Tubular Design went well, too.

I continue to have contact with the extraterrestrial drilling and ice coring communities. In fact, I just finished writing a chapter in a new book coming out, "Drilling in Extreme Environments" on extraterrestrial drilling. Be looking for it in fine bookstores everywhere. Will Fleckenstein and I continue to be in demand within the ice coring community. The ice core rig that we helped to design has been deployed to the western Antarctic ice sheet (look up: <http://www.waisdivide.unh.edu/video/WAIS-2008-320.mov> for a nice video of last season's operations). We have also been invited to help with the next round of operations including replicate coring (a process of coring the same section again using directional drilling technology) and a rapid access drilling rig (a.k.a. a coiled tubing drilling rig) for being able to drill quick and deep science holes in the ice sheet.

Something new I am doing this year is building a new drilling research center. Given the hectic pace at which drilling operations take place, sometimes drilling problems just don't get solved. We have many students, graduate and undergraduate (and faculty too!), who would love to solve these problems. The drilling research center would be to bring these two together for the betterment of both. For the first project, the center will be focused on drilling operational improvements using the torrent of operational data collected on rigs. In that data stream is information on optimum drilling parameters and, maybe, the precursors to unscheduled events (things that go "opps" in the morning tour). The goal will be to develop real time methods using this data stream for determining optimum drilling parameters (i.e. weight on bit, rotational speed, etc.) as well as determining when something bad may be happening. The plan is that the center will grow into solving other drilling problems as desired by the center members. If you have an interest, please call or write.

On personal matters, last year at this time, I was planning on prostate surgery. That was accomplished in early September last year. A few weeks after the surgery, I had my first PSA test. For those that don't know, the PSA test is a blood test that looks for prostate specific antigens. The prostate normally makes PSA but prostate cancer makes a lot more. Since I no longer have a prostate, my PSA level should have been zero. It wasn't. That is an indication that either the cancer is still there or some prostate tissue was left behind or both.

This was upsetting news. My wife, who is my medical advocate, and I consulted the many books we have bought on Prostate Cancer regarding a PSA level that never zeroed after surgery. That's when I learned that my case was no longer normal nor in the books. I had numerous tests done including CT scans and an MRI (at M.D. Anderson in Houston which is a really good place to go). And I had a mini-surgery that did find excess prostate material. However, that didn't prove one way or another that the cancer did not exist.

So it was on to radiation! Starting in April, I had thirty-three sessions of radiation. This precluded me from going on Field Session this year, so Mark took my place and talks about field session in his section. Radiation does have some side effects; however, I came through with only minor issues. I did have the fatigue that is a side effect; however, I suspect it came from the daily drive to the center. I was disappointed that I didn't find any radioactive spiders in the place. However, knowing my luck, I would have been bitten by a radioactive bookworm and become a super librarian.

Things I have learned about the medical profession during this last year:

- They don't always know what is going on.
(somehow, I thought they did)
- They play the risks and use statistics far greater than we do in our business.
- You can find any statistics regarding your situation that you want. I found where cases like mine had a 10% to 90% 5-year survival rate, depending upon the study. You really need to dig into study protocols and procedures before you can believe anything.

EUSTES CONT.

- There are no magazines in medical waiting rooms that are younger than six months.
- MRI machines are noisier than drilling rigs.
- There are an awful lot of dedicated people in the medical profession.

You never want to hear your doctor say the following (true!):

- “This is an unusual (or unique) case.”
- “This is disturbing and surprising.”
- “There is obviously more to your case than we thought.”

- “I have done over 3,000 of these surgeries but never came across this situation. Luckily, I read about this in a journal.”
- “You might experience some discomfort.”

Well, I won't know if the cancer is in remission for six to eighteen months from now. That is the nature of radiation. I do know that the support and encouragement of my fellow faculty and staff, students, and especially the alumni has been most rewarding and helpful. A few of you who have gone through prostate cancer have been most helpful. I thank you. And if any of you have to deal with prostate cancer in the future, please call me. I will answer questions and listen to your concerns. It is the least I can do.

WILL FLECKENSTEIN



Dr. Will Fleckenstein

This year was another challenging one for the industry and the Petroleum Department. As an adjunct I usually divide my time evenly between consulting and academic activities, but for the fall semester I tried to scale back my consulting to devote myself essentially fulltime to classroom activities in the Petroleum Engineering Department, due to faculty shortages. As the price of oil increased, though, my clients asked me to

do more consulting not less, so it was a challenging year. I ended up teaching both of the undergraduate drilling class sections for much of the semester, and taught two graduate classes, an Interdisciplinary Exploration and Development Class devoted to Incised Valley Systems, and a Workover Design Class. All classes had a lot of interest and students, so I was glad to have been able to contribute.

I completed working on the ICE CUBE project, in which hot water is used to drill 8,500' deep boreholes at the South Pole glacial ice for deployment of a muon and neutrino detection array. This multi-year project was budgeted for approximately \$250 million, but the drilling operations the first year

only succeeded in drilling a single hole before the bottom-hole assembly was lost. Since this pace would complete the project in 2090, a group of troubleshooters were put together in 2004 to attempt to speed the process up. This last year, the drilling operation, which is limited to 3 months by weather, succeeded in drilling 18 boreholes and the project is now ahead of schedule.



Drilling at the South Pole.

I also worked on oil and gas projects ranging from drilling and workovers in legacy assets offshore of California to tight gas development in south Texas. These projects allowed me to continue to practice as an engineer, and offer both a theoretical and practical viewpoint in the classroom.

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

HOSSEIN KAZEMI



Dr. Hossein Kazemi

The 2007/2008 academic year was tumultuous but, nonetheless, a very fruitful year. In particular I feel very fortunate for many multidisciplinary opportunities which came my way, including the privilege of doing research with a large number of bright graduate students. I also traveled to our major clients' offices and attended four key technical meetings and conferences, which provided me with a better vision about our industry's

technical problems and issues. My travels included: (1) was a guest speaker and a panelist in the World Energy Symposium, Oct. 22-25, 2007, in Kuwait; (2) presented a workshop on fractured reservoirs and relevant research activities at the Saudi Aramco Technology Center in early April, 2008; (3) visited Kuwait to promote collaboration in production technology research; (4) visited Abu Dhabi National Oil Company (ADNOC) and the Abu Dhabi Petroleum Institute to obtain data for three research projects we had submitted as part of a collaborative research program with the PI and ADNOC.

In summer 2008, I did not have much of a break because I conducted a three-week presentation and research discus-

sion on EOR with a visiting scientist (who is a past student of ours) while being assisted by two of our graduate students; worked with several graduate students on their thesis including two PhD students from the University of Kansas on EOR and one PhD student from the University of Wyoming on simulation of coalbed methane with potential for asphaltene and wax precipitation in the wellbore and near-wellbore; participated in the AAPG Hedberg conference and field trip on fractured reservoirs. The latter was most rewarding because I spent five days with several notable geoscientists and authors.

At Marathon Center of Excellence for Reservoir Studies (MCERS) our students made significant strides on their research topics, presented several technical papers. Several of these papers were accepted for journal publication. The most notable areas for me were a better understanding of the 'role of reservoir geomechanics in production' and the issues related to the 'net balance between energy expenditure and energy gain in oil recovery applications.'

At MCERS we are focusing both on the practical applications of technology as well as the fundamentals of engineering; thus, planning to broaden our efforts to experimental work. We also continue our collaboration with the Reservoir Characterization Project (RCP) headed by Dr. Tom Davis and Dr. Robert Benson. The goal is to enhance integration of reservoir engineering into the RCP's overall project goals. I believe this has been an excellent example of an opportunity for the PE department to become closer with other notable CSM research activities. Finally, four of our industry partners are serious!

MARK G. MILLER



Dr. Mark G. Miller

Not much is new in the department computer labs. However, the campus recently obtained a massively parallel computer. Named Ra, this computer will allow the campus to conduct research that previously we had to beg time from other research centers and national labs. Because the other centers and labs put their jobs first in the queue, CSM jobs moved in and out of memory as processor time became available. We could never

predict when our jobs would finish. Mines has four principal research areas planned for the new computer: locate/develop existing resources, advanced environmental stewardship, designing new materials, and pursuing renewable

resources. With an estimated calculation rate of 17 teraflops, the computer is well within the top 100 fastest machines on the planet. This processing is done with 2144 processing cores (over 500 quad-core processors) and 5,632 Gbytes RAM. Hossein Kazemi and his graduate students are planning to be among the first investigators. More information can be found at <http://geco.mines.edu>.

Richard Christiansen's gas well deliquification laboratory received some attention this year. On a couple of occasions, the department hosted training for Marathon and Chevron employees. Employees were treated to Rob Sutton (Marathon) and others, speaking for a half day about practical field studies, followed by a day of running experiments (foam, small tubing, big tubing, annular flow, etc). Participants got to see, through the clear Plexiglas tubes, how different operations change the downhole flow. To see this apparatus, the second edition of "Gas Well Deliquification" by Lea, Nickens, and Wells, 2008, features a photo of the experimental setup. I also took our undergraduate students to the lab to help visualize the different two-phase flow regimes.

JENNIFER L. MISKIMINS



Dr. Jennifer L. Miskimins

Once again, I can't believe it's already time to write an article for this newsletter! I also can't believe it's the seventh one that I have written since joining the CSM staff. The year has flown by and unfortunately so has the summer – time to get back to the classroom and so much for all those tasks I promised myself to finish this summer.

This year has been a satisfying time both from a personal and professional

standpoint. The highlight for me was at the end of the spring semester when I was promoted to Associate Professor and granted tenure. Receiving tenure is analogous to removing an 800-lb gorilla from your back – working toward it is always in the back of your mind and a constant shadow. I can't say that it's completely sunk in yet, but day-to-day I am starting to feel the freedom it brings. Those of you who know me personally know that it most likely won't change my behavior at all, but it is truly nice to be able to focus on other issues.

From the research front, the FAST Consortium (Fracturing, Acidizing, Stimulation Technology) continues to grow. We are holding steady at 27 industry members, although that number might grow in the near future as I am discussing new contracts with three different companies. The program has now graduated six Master of Science students and one PhD, with four students scheduled to graduate in the coming year. During its five-year existence, 16 students at both the undergraduate and graduate levels have been involved in various capacities. It is very rewarding and enjoyable to

know that the Colorado School of Mines is starting to be associated with stimulation research, and I'd like to thank all the industry members and their representatives for their continuing help and support. If you're interested in learning more about FAST, please see our webpage at www.mines.edu/fast. We just updated it this past year, and it has information about the program, the students, and the literature that has been published.



FAST Research group. L to R. Indar Singh, Russell Roundtree, Dan Benedict, Hector Wills, Bitao Lai, Professor Miskimins and Linda Mohammad

From a teaching standpoint, classes continue to grow and grow and grow. I guess when you reach a certain level, it doesn't really matter how much bigger they get as long as you can still fit in the room. We don't have people sitting on the floors – yet – so I guess we're ok for now! I continue to enjoy teaching the stimulation, economics, and field session classes. Every year is a new adventure.

I hope this newsletter finds you well and not too busy – if that's even an option with the current state of the industry! If you do have the opportunity to sneak away to the SPE meeting in September, I hope to see you there. And, as always, please feel free to contact me anytime at (303) 384-2419 or jmiskimi@mines.edu.

ERDAL OZKAN



Dr. Erdal Ozkan

The academic year of 2007-2008 was a very busy one. Research activity in the Marathon Center of Excellence for Reservoir Studies is going strong. The center is funding more graduate students every year. We have been able to bring funds close to two million dollars that helped us support our research and, most importantly, our graduate students. In the five years, thirteen students finished

their graduate studies under the center. Funding has been received for nine projects. Six of these projects have been completed and the results have been delivered. The other three projects are progressing as planned. In addition to funded projects, we have developed new research that has been particularly successful in attracting interest from the industry. A new web page is up for MCERS; be sure to visit the site.

<http://www.mines.edu/academic/petroleum/research/mcers>

In addition to my research activities, I continued to teach my regular courses: undergraduate and graduate well testing, horizontal wells, and applied mathematics for fluid flow in

OZKAN CONT.

porous media. I also chair the graduate application review committee. We had a record high number of graduate applications for Fall 2008, and have been enjoying record high enrollment in our graduate program.

Prof. Battalora and I led two groups of PEGN 315 summer field session to California. The students enjoyed the field session. Visiting oil and gas companies in Bakersfield and Los Angeles was a great opportunity for the students to see

the different areas of operations, both on land and off shore. We are always thankful to all who accommodate our field sessions and allow us to tour your facility.

I attended several conferences, workshops, and forums around the world last year. I was involved in the organization of several workshops and chaired the SPE Unconventional Reservoirs Conference. I met some of you during these meetings. SPE ATCE is in Denver this year and I look forward to seeing you at the Alumni function.

MANIKA PRASAD



Dr. Manika Prasad

Hello Folks! I cannot believe that one year has gone by since I joined this department. And what a year it has been. Professionally, it has been extremely rewarding and I am enjoying my new department!

The first semester brought a record breaker: I jumped right into the teaching with about 140 students in the well logging class. I tried a new approach of teaching by creating teams that ana-

lyzed real life well logs. The students learned that real data has nothing to do with the canned examples seen in textbooks. I learned in managing so many teams that there will always be a few teams that need 90% of my time. Ah well... welcome to the real world! In the next semester, I taught Advanced Well Logging - many thanks to those of you who came to guest lecture.

My research group is slowly growing. We signed on two Ph.D. and two M.S students bringing our total count to 9 in geophysics and petroleum engineering. The Ph.D. students will work on rock physics and compaction trends in shales and carbonates. The MS students are full-time employees

and they will work on permeability maps and on formation testing and formation strength assessment. We also have a student visitor from the Petroleum Institute in Abu Dhabi. Another one from the Danish Technical University in Copenhagen will be here next month until December. Both are here to learn "experimental magic" - by the time they go back, they will call it the "art of experimentation"!

And folks, my new acoustic microscope is here! It is a really nifty toy. It can image 3D structures in rocks, any materials for that matter - very useful for opaque materials to detect flaws, fractures, vugs, and grain and pore alignments. So, next time when you visit, come by and I can give you a demo! Our pressure cell is almost completed. Hopefully soon, we will start making a true triaxial stress system.

On a private note: I lost two very dear family members and am still trying to accept that. The support of the department has been wonderful in softening the blow. My husband has also finally moved here from California - I am reminded of his usefulness every evening when he cooks warm meals for me!



Here is the very first scans made with the new toy

CRAIG W. VAN KIRK



Dr. Craig W. Van Kirk

Here's hoping my greetings find you and yours healthy and happy. My family is fortunate to be in good health with plenty of happiness to go around. During the year since our last Newsletter one more new family member has been added; baby Tommy was born on January 23, 2008 in complete good health to our daughter Connie and son-in-law Tom, son number four. Now my wife Denice and I enjoy 7 grandchildren, the 4 boys plus Sam and Amy's 3 kids. How lucky we are to have lived so long with kids and grandkids.

Since I stepped down from PE's Department Head position at the end of the spring 2007 semester, after 27.5 years, I have continued to keep very busy with numerous and exciting things to do on behalf of CSM. During the past school year I taught PE 423, Reservoir Engineering #1, and PE 102, the Intro course to PE and our industry. For 30 years I have enjoyed teaching these courses to the seniors and the freshmen, and some of the students say they have enjoyed it also.

During this coming school year I plan to teach these two courses again; and perhaps add PE 424, Reservoir Engineering #2, and perhaps add a graduate-level course in the general area of reservoirs. Years ago I did teach several different grad courses, but as the years went by and the Department Head opportunities expanded, I stopped doing so. I would like very much to begin offering at least one grad course per year, starting this school year.

Beyond teaching these PE courses, during the past year I have been very involved with CSM's Outreach Program, providing training to petroleum professionals in Egypt and to Chinese and Libyans visiting campus for a few weeks up to 18 months. These kinds of professional training programs have



In London with Denice, grandkids, and Gary Baughman.

been, for many years, among the several significant activities which CSM provides both domestically and internationally which contribute to CSM's expanding global reputation and impact.

Closely related to these kinds of professional training activities are other endeavors which reflect CSM's PE Department's expanding global engagements. For example, the past 18 months I have been engaged with Iraq representatives who want our assistance in starting a brand new PE program in Basra, Iraq. Last September I met with their group in Jordan, and this recent past June I met again with them in Bahrain. We are making good progress and moving forward in the early stages of providing our advice and assistance. Soon we should have a formal agreement under which we will help them establish both undergraduate and graduate-level curricula, facilities, procedures, best practices, et al. If things go the way we hope, we will have a long and healthy partnership with this new campus in Basra.



Craig with longtime friend and colleague, Professor Zolton Heiniman, Mining University of Leoben. He stepped down as Department Head also.

My first visit to Iraq was during the mid-1970's, a few years before I joined CSM. During my several trips to Iraq over a period of some years I had the pleasure of visiting Babylon, and making many new Iraqi friends who continue to this day, several of whom some of you know. The PE Department at Baghdad University and I have enjoyed a long association with mutual benefits for many years, going back to the mid-1970's. Their current Department Head is part of the group now providing input to the new Basra campus.

As a matter of fact, the northern Iraq Kurdish area also is requesting our assistance in developing new PE programs at new campuses. Several of these representatives and I first met in London in March at an international conference addressing the global PE needs of our industry and the education, training, and research offerings of a few of us internationally recognized university PE programs. Naturally, our CSM PE Program was among a very few such programs represented at the conference, and we received a lot of attention and invitations to join in new partnerships with universities, international oil companies, and national oil companies.

FACULTY LETTERS



Does it really look like me? - Ice sculpture at SPE

During this summer vacation, one of the Kurdish representatives visited me on campus to further clarify their needs and our capabilities. It is interesting that it appears Iraq is planning to have three PE campuses, a new one in the north, a new one in the south, and the existing one in Baghdad. There appears to be no conflict of coexistence, with plenty of work to do and students to serve.

On the topic of international engagements, I have been invited to attend an SPE Forum Series on Naturally Fractured Carbonate Reservoirs, to be held in October in Egypt. I plan to attend, but I haven't yet finalized all the arrangements.

Also, my long-standing ties to Saudi Aramco and ADNOC (and the Abu Dhabi Petroleum Institute campus) remain strong and active. Among the more interesting parts of these associations are two Aramco Ph.D. students on campus who are creating global supply and demand models for oil and gas. I enjoy representing PE on their committees, and iterating with our Aramco partners in these and other similar matters.

It continues to be my great pleasure to participate in so many of the worthwhile activities of CSM's PE Program, from

teaching through research and service. Frequent visits from alumni and emails and cards provide abundant satisfaction. Also, frequent visits from the news media, K-12 students and teachers, dignitaries, and many others provide a constant source of entertainment and satisfaction.

Another enjoyable event during the past year for me was the annual PE reception at the SPE Conference in Anaheim in November. As always, our CSM reception was very well attended, and I very much appreciated some of the kind words some of the alumni and others had to say about my service to CSM. I especially enjoyed seeing the current students intermingling with the alumni and sharing stories. Most especially, as always, I enjoyed just seeing and being with our CSM PE family.

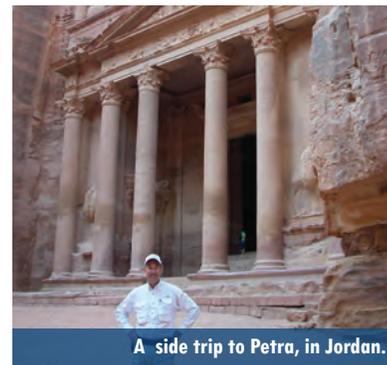
Our new building, Marquez Hall, continues to move forward with fund raising and architectural planning. These activities are just a small portion of the total of the opportunities which keep me busy. As I have said for many years, I'll rest when I get old.

I hope this bit of news from me makes you feel good. I feel very good. Please keep the cards and emails coming, they do provide us with support to keep on doing what we do.

Take Care,

Yours truly,

Craig Van Kirk



A side trip to Petra, in Jordan.

YU-SHU WU



Dr. Yu-Shu Wu

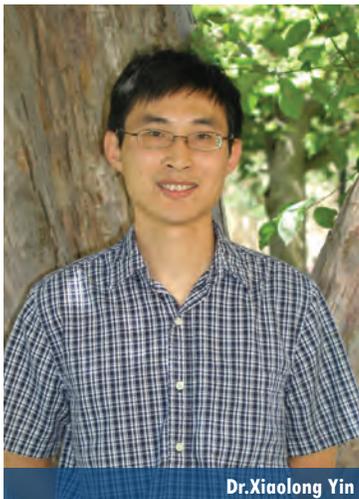
I am excited and looking forward to my first year as a faculty member of the Petroleum Engineering Department at CSM. I am so happy for the opportunity to work with our outstanding students as well as outstanding faculty and staff members of the Department. I was trained as a petroleum engineer and started my career as an instructor in reservoir engineering. Over the years, I have come to the realization: petroleum reservoir

engineering is what I love to do in my life.

My working experiences have been primarily in the area of flow and transport phenomena in rock and reservoir characterization. One of my goals as a faculty member at CSM is to bring my academic and industrial experiences to the teaching and research at Mines. As fewer new oil/gas reserves are being found worldwide, existing oil/gas reservoirs are being depleted in a faster rate. In addition, there are the growing demands for energy as well as environmental concerns and our industry is currently facing tremendous challenges. All of these also present us with excellent opportunities in both petroleum-engineering research and higher education for a better energy future. I am looking forward to the opportunities to participate in and contribute to teaching and research programs at the CSM Petroleum Engineering.

FACULTY LETTERS

XIAOLONG YIN



Dr. Xiaolong Yin

I am glad to use this newsletter as an opportunity to introduce myself to the friends and alumni of Colorado School of Mines Petroleum Engineering. I received a B.S. degree in Theoretical and Applied Mechanics from Peking (Beijing) University, an M.S. in Mechanical Engineering from Lehigh University, and a Ph.D. in Chemical Engineering from Cornell University. The past year has been a

great success for me, because after two years of postdocship at Princeton University Chemical Engineering, I was offered a job that I always want and worked very hard to get an assistant professor position, and in one of the best departments at the famous Colorado School of Mines!

Even though my official start date is January 2009, I already started “working”. I attended the three-week summer Super School and received an excellent education on Petroleum Engineering basics. During my stay in Denver, I also discovered several exciting interdisciplinary research opportunities, and I am very eager to start working on them.

Today, the over-100-year-old Petroleum Engineering discipline is facing many new challenges. As easily accessible hydrocarbon resource is no longer abundant, we need better technologies, better reservoir management skills, and better understanding of the fundamentals to ensure that our reserves meet the needs of human well-being in the many generations to come. My primary research interest is to develop reliable numerical methods to study pore-scale multiphase flow and transport phenomena in porous media. I am also interested in particle-laden flows and related practical applications such as fracturing, cutting transport, and erosion. Professor Eustes and I are also working together to initiate an experimental program on flowback water recycling.

PE FACULTY 2008



Erdal Ozkan, Bill Eustes, Ramona Graves, Yu-Shu Wu, Linda Battalora, Mark Miller, Dwayne Bourgoyne, Will Fleckenstein, Xiaoling Yin, Manika Prasad, Jennifer Miskimins, Al Sami, Craig Van Kirk, Hossein Kazemi

PE FACULTY 2008

AL SAMI



Al Sami

We, at PE Department of CSM are making things happen by utilizing all of our resources and knowledge to pay our dues and tributes to the industry by developing new methods and procedures. We are helping the industry to operate more intelligently and utilizing the resources more effectively and efficiently.

Our department is proud to be the first institute in the world who developed

a system that could demonstrate non-Darcy flow and publish the hard data for single phase and now is in the stage of experimenting multi phase non-Darcy flow. I've had the privilege to be directly involved in this project and have benefited from Dr. Miskimins knowledge and experience. Jennifer's contribution to the industry has opened a new era in the area of the well completion.

In the area of CO₂ flooding and MMP determination, the PE Department is adding state-of-the-art equipment as a new tool to teach the industry the unknown facts about wettability. This new feature is under the direction of Dr. Kazemi, one the few internationally distinguished professors who is a well known highlight in the oil industry. I have been honored to work with Dr. Kazemi in this project also. In this project I have a privilege to take advantage of Dr. Kazemi's wealth of knowledge and experience for expanding and developing new experiments toward industry's interest.

A new scanning microscope that has been brought to the department by Dr. Prasad has enabled our department to extend the study of the formation mineralogy for more intelligent operations in the area of stimulation including demineralization for enhancing the production.

These are just a few examples of our department's contribution to the industry under the new leadership. However, it will be very difficult to outline the accomplishments and contributions of every individual faculty and staff in PE Department. If not us, who? If not now, when?

PE OFFICE STAFF 2008



L to R Patti Hassen, Denise Winn-Bower, Terri Snyder

It is a pleasure to work in the Petroleum Engineering Department. Our students contribute so much to our daily lives by keeping us active and youthful! We see students come from great distances to be here with us, and we consider it a wonderful opportunity to get to know them. The School of Mines has really impacted the lives of so many in the most positive manner, and turned these young students into professional men and women of the future.

MARQUEZ HALL

Marquez Hall Fundraising – 19 Million Dollars and Counting!

In just one year, we expect to be breaking ground on Marquez Hall, a new, state-of-the-art home for Petroleum Engineering at Mines. Plans for the building, to be located just east of Alderson Hall, include a visualization center as well as numerous laboratories and classrooms equipped with the technology we need to keep our students and researchers on the cutting edge.

We are well on our way to raising \$10 million to match Tim and Bernie Marquez's exceptional \$10 million challenge gift. EnCanaled corporate contributions with a \$2 million gift early in the campaign and many alumni, friends and other corporations have since stepped up to the challenge with gifts and commitments totaling more than \$9.2 million (as of press time). Several areas within the building will be named for donors who make contributions of \$100,000 or more.



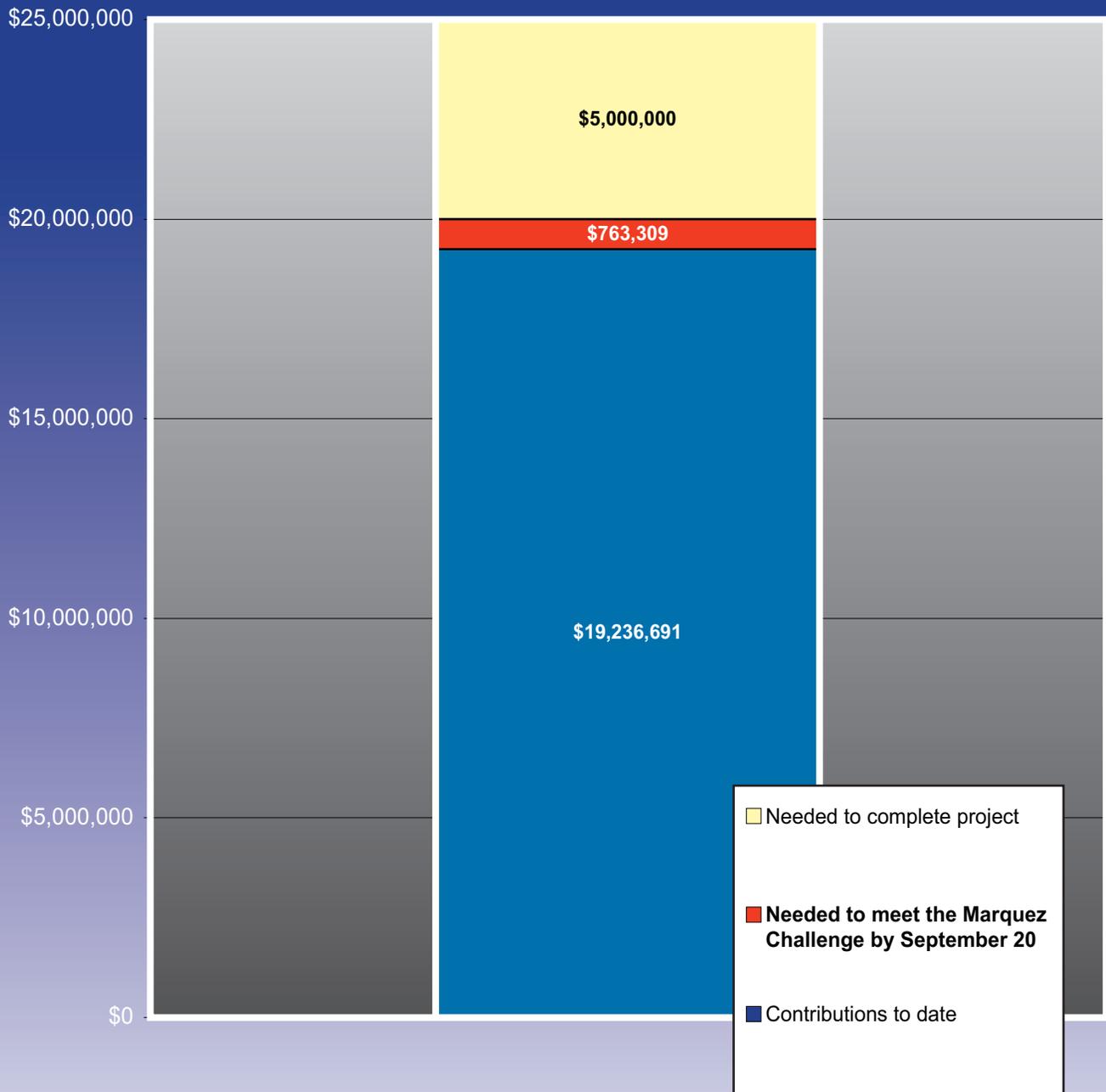
The deadline to fulfill the Marquez challenge is fast approaching. By September 20, we need to raise \$763,309 more to receive the \$10 million match. On top of that, we require an additional \$5 million in order to complete the \$25 million building.

Adjunct professor and Mines graduate Will Fleckenstein is among a number of individuals who have given generously to the Marquez Hall project. "As an adjunct faculty member I can see firsthand the need for a first class building like Marquez Hall to educate the swelling number of students desiring to join our industry," he notes. He observes that the quality of the building will be determined by how much money we can raise before breaking ground. "I gave \$50,000 to commemorate my late father's inspiration and help with my education, and to give the next several generations of engineers a chance at an education even better than what I received," Will says. "This is a once-in-a-lifetime chance to contribute."

Have you made your gift to Marquez Hall? There is still plenty of time for you to contribute to this exciting project. The new facility will help us ensure a bright future for our students, new opportunities for our faculty, and continued progress for the energy industry.

If your employer offers a matching gift program, you may be able to double or even triple your gift! Contact your human resources office to find out how.

Marquez Hall - A \$25 Million Facility for PE – Fundraising Progress –



To make a contribution or obtain more information on the project please contact:

Molly Williams
Vice President for University Advancement
303.273.3139
molly.Williams@is.mines.edu

or

Ramona Graves
Interim Petroleum Engineering Department Head
303.273.3746
rgraves@mines.edu

STUDENT ORGANIZATIONS

SOCIETY OF PETROLEUM ENGINEERS



Drew Huck

Hello, my name is Drew Huck and I am the current President of the student chapter of the Society of Petroleum Engineers for the Colorado School of Mines. Our SPE chapter continues to be strong, with a focus on introducing CSM students to the petroleum industry and providing opportunities to interact with industry representatives. We have lunch meetings almost every week with technical presentations from industry

presenters, providing a great opportunity for students to learn about specific companies and the exciting work that these companies are doing. We also are generously hosted by the Denver Section of SPE at lunch meetings once a month with distinguished presenters.

Our chapter is strongly supported by almost two hundred members. We also enjoy the support of many sponsors, our

petroleum department, and the SPE Denver Section. This year, we had a very successful Joint Session with the SPE Denver Section, hosting Mr. Robert Bryce of the Energy Tribune based in Austin, Texas. We also have the honor of being the student host chapter for the Annual Technical Conference in September. We will have the privilege of hearing our very own CSM President and Petroleum Engineer Research Professor, Dr. Bill Scoggins, speak about "Petroleum Engineering: The Road Ahead" at this event.

For the future, I hope to increase partnership between our chapter and the SPE Denver Section, which has given us tremendous support. I would like to thank them for this support, and thank all of our sponsors and our department as well. We would not be so successful without the tremendous amount of help we receive.

If you are interested in learning more about the Colorado School of Mines SPE chapter, please e-mail me at ahuck@mines.edu.

Regards,
Drew Huck

PI EPSILON TAU by: Linda Mohammad



Linda Mohammad

Greetings to all! My name is Linda Mohammad and I am the current Initiation Officer of Pi Epsilon Tau, the honorary Society of Petroleum Engineers. On behalf of the Pi Epsilon Tau society, I will be wearing the writer's hat while the society is waiting for our new committee members' election coming up in Fall semester.

Pi Epsilon Tau (PET) recognizes students from the Petroleum Engineering

Department for their outstanding excellence in leadership and academics. This society was created to foster loyalty, fellowship, and cooperation for the petroleum industry. Our main objectives through this society are to create a closer bond between its student members and industry, to broaden the scope of activities of members, and to maintain the high ideals and standards of the engineering profession. Membership of this society is based upon an invitation by PET

where academic achievement and exceptional characteristics are the keys to eligibility. Minimum cumulative GPA of 3.00 is required for the undergraduate students and 3.25 for the graduate students.

Along with the Society of Petroleum Engineers (SPE) and American Association of Drilling Engineers (AADE) chapters at Mines, PET also participates in the Petroleum Engineering Department's activities such as giving department tours in relation to Discover CSM event held for prospective Mines students and Race For the Cure event in Denver.



Top to Bottom - L to R, Indar Singh, Chelsea Womble, Dr. Ramona Graves, Darcy Souta, Mandi Schulte, Joshua Wilcox and Linda Mohammad.

STUDENT ORGANIZATIONS

PI EPSILON TAU CONT.

Our latest initiation was held in April 2008 where 34 new members were initiated. In May 2008 graduation, 36 of our members from the senior class and graduate level earned their degrees from this department. For the upcoming school years, PET is looking forward to another great run with the department. With the guidance from our very well-experienced advisor, Dr. Ramona Graves and the leadership of the new committee, we are ready to dedicate our time to make positive impact in the community and on Mines campus. As a returning officer, I would be glad to help out with any inquiries or suggestions for service projects involving Pi Epsilon Tau chapter at Mines (email me at nmohamma@mines.edu).



PET members at the Spring 08 Initiation.

AMERICAN ASSOCIATION OF DRILLING ENGINEERS by: Levi Harris



Levi Harris in Farmington NM
Workover Rig Lifted.

Hello and welcome back to what is sure to be another great school year here at Colorado School of Mines. My name is Levi Harris and I am the President of the student section of the American Association of Drilling Engineers (AADE). AADE has grown to be a great resource for young engineers in training to become involved in the industry through one on one contact with practicing engineers. This past semester I was fortunate

enough to be able to attend the AADE joint session and meet some of our new colleagues from Wyoming University and Montana Tech, as well as all the industry professionals. The meeting was a big success with nearly thirty students from CSM attending and an additional twenty or so from the other schools. Having so many students attend pays tribute to the fast pace growth in Petroleum Engineering discipline.

In order to keep up with this growth the CSM section of AADE has been making plans for the upcoming semester and we now have several great ideas for community service projects and conference trips to further not only our education but the education of the community. We hope to reach out and begin to teach our local high school students about

the oil industry and press the idea that oil and gas is helping to fuel this economy and the world in more ways than gas in our cars. We hope to spark interest in these soon to be college students to choose a path of an engineering discipline in their collegiate careers. The idea is to entertain the young minds of the community with the prospect of an engineering degree, hopefully Petroleum Engineering.

The chapter, along with encouragement from Dr. Eustes, has decided to raise money to attend the Premier Drilling Fluids Conference in New Orleans, LA this next coming spring. We already have T-Shirts made and ready to sell. Only \$12.00 dollars and you can find them in the PE office. We hope to raise enough money to subsidize 10 students. These funds would pay for transportation as well as room and board while attending the conference. The students selected to go would partake in a poster session during the conference. Although the choice of topic would be theirs, I would hope the students would try to share something about our department at Mines with the rest of the industry.

So, as you can see we have big plans made for our small chapter. However, we are going to need some help. I encourage all students interested to join up and help us on our way. Membership can be obtained through the PE office or you can contact me, lharris@mines.edu. Dues are \$30.00 and this includes our national dues being paid by the downtown professional chapter. I hope to see many of you at Celebration of Mines and the upcoming ATCE conference. Good luck this year and remember if you live like no one else now, later you can live like no one else.

FIELD SESSIONS

PEGN315 FIELD SESSION IN CALIFORNIA

by: Linda Battalora, Photos compliments of Jeff Brown, Lacy Tayler & Basak Kurtoglu

Professors Al Sami, Erdal Ozkan and I would like to thank the many individuals and companies that made the 2008 PEGN 315 Field Session in California a success. Starting in Golden, Colorado, we would like to acknowledge the tremendous effort and countless hours given by our PE Department Administrative Assistants Terri Snyder and Patti Hassen who made our departure from Colorado a reality. With seventy-two students, eight TA's including Professor Ozkan's wife, Alev, we left Denver on Monday, May 12, 2008 with high expectations for the next two weeks. Thanks to the alums of Southern California and Bakersfield we were not disappointed!

and throughout the trip, the California Field Session would not have been possible. That evening, we drove to Bakersfield and joined Professor Ozkan's group in the sweltering heat. Just our luck, Bakersfield experienced unseasonable temperatures over 100° F during our stay. Dave let us know later that the heat spell broke just as we left Bakersfield.



Our first day in Ventura was spent offshore on Venoco Inc.'s Platform Grace. Due to Venoco's safety regulations regarding facial hair, Professors Sami and Ozkan remained on the boat while the rest of us experienced the personnel basket and the hospitality of the Platform Grace crew. The experience was heightened for the students when they learned that Tim Marquez, President of Venoco, is a 1980 graduate of the PE Department. Many students remarked that the offshore experience "on Tim's platform" gave them incentive to study more next semester! The weather couldn't have been better, and the boat ride back was much smoother and faster than the ride out. That evening, Professor Ozkan's group trekked to Bakersfield for a tour the next day of Aera's office and Belridge Field.

On Thursday, Al's and my group visited Aera's office and Belridge Field. Erdal's group donned their geology gear and visited outcrops along the west side of the San Joaquin Valley focusing on the Midway Sunset and McKittrick oilfields. A special thanks to Chevron and their geologists Tim Elam and Mike Ponak for leading an interesting field trip.

Meanwhile, Al's and my group had a relaxing evening in Ventura and time to unpack our beach sandals, sunglasses and suntan lotion for our Geology field trip the next day. (When you are the trip organizer, you get to "cherry pick" a little bit). We are grateful to Aera's geologist, Jon Schwalbach for teaching us geology from the outcrops along the beach in Santa Barbara. A good and sunny time was had by all. Dave Mayer of Aera joined us for the field trip and without his assistance in planning and logistics prior to leaving Golden



FIELD SESSIONS

CALIFORNIA CONTINUED

Al's and my group on Friday. We enjoyed Lonnie's presentation and the tour of the Arroyo Grande lease and field and the diatomite steam fracs. We would also like to thank Mike Starzer and Bonanza Creek for once again hosting one of our groups with presentations, lunch and tour of the Midway Sunset oilfield. During the weekend, many students opted for a return to the beach while a number of students sought the shade of the trees in Sequoia National Park. Other students decided to stay in, do laundry, write home and to rest up for the next exciting week.



Group Photo of Helicopter pad, Venoco Inc.'s offshore platform, Grace.

Our last three days in Bakersfield were action packed. We were granted a special tour of the Kern County Museum - Black Gold Exhibit. By that time, we had been in Bakersfield for six days and the news media had heard of us. A reporter and a cameraman were waiting for us when we began the museum tour. Several of our students were interviewed for the evening news. They sounded very intelligent, articulate and gave nice overviews of their purpose in Bakersfield and the field trip. The museum tour was truly a highlight of the trip. Our tour guides were former oil company employees with lots of history and stories to share with us. We experienced an additional treat that afternoon as the Museum opened their transportation museum especially for us.



Aera Geology Field Trip, Santa Barbara.

Both groups toured Schlumberger, Core Lab and Halliburton facilities in Bakersfield. We are appreciative that these companies were able to include us in their busy schedule.



Aera Geology Field Trip, Santa Barbara.

We would especially like to thank Halliburton and its many company representatives including Carl Glatz, Rafael Hernandez, Paul Smith and Ron Mckelvey who provided the student tours, sponsored the Alumni Picnic, and cooked the good food! The alumni picnic was well attended and the students enjoyed visiting with the alums. We would like to thank Tiffany Brewster, the coordinator of the alumni event, Lonnie Kerley, who lined up Halliburton, and Dave Mayer and Joe Nahama, who reserved the location at the park.



Chevron Geology Field Trip, Bakersfield.

Before leaving Bakersfield for Long Beach, we spent most of the day at Chevron's Kern River Field facilities. A special thank you to Lynn Ayers for accommodating both groups at the same time. The students enjoyed the presentations by the recent CSM graduates as well as other company representatives. We also enjoyed the intricate tour of the facilities and the lunch spread which included many of the food groups including vegetables.

FIELD SESSIONS

CALIFORNIA CONTINUED



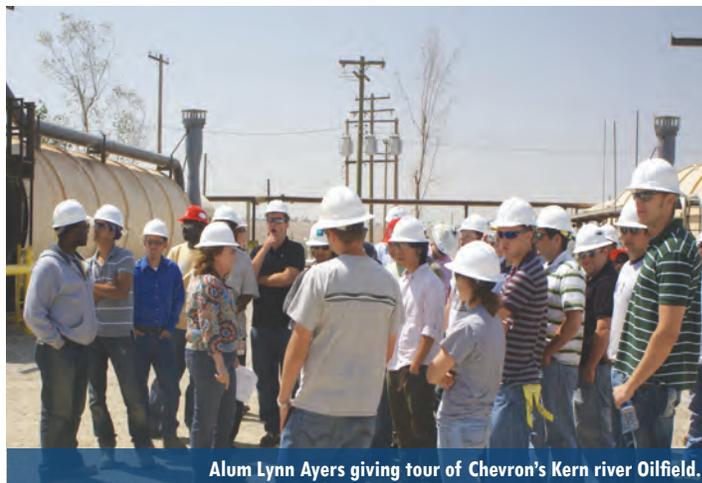
Chevron Geology Field Trip, Bakersfield.

Our last full day was spent with OXY and on THUMS island. We would like to thank Candra Janova and his OXY colleagues for accommodating both groups for presentations, a quiz bowl with prizes, lunch and a tour of THUMS island. Additionally, in the evening in Long Beach the students, TAs and Faculty attended a Young Professionals Society of Petroleum Engineers (YPSPE) of Los Angeles Basin Section Social and Networking event. The next day, one group toured Venoco's Beverly Hills Oilfield and both groups flew back to Denver.



Oil Seep

We would like to thank all of the alums who played a role in making the 2008 California Field Session not only a success, but a fun time! We had many invitations from alums to tour facilities, and we wish we could have spent another week in Southern California to see them all. A special thank you goes to Andrew Prestridge of DCOR and his colleagues who were waiting in the wings in case we had an unforeseeable gap in our itinerary.



Alum Lynn Ayers giving tour of Chevron's Kern river Oilfield.

Finally, now that the substance of the trip has been reported, Al and I believe we would be remiss if we didn't mention the Emergency Room visit, the Urgent Care visit, the broken hotel toilet tank (note "tank" not "seat") (it's still a mystery), the "rockin' vans" at the gas station, the hundreds of wrong turns (in spite of the GPS'), Al's ability to drive two vans because he has two driver's licenses and many more vignettes that make field session memorable. We had a great time with the students, all of our hosts and alums, and we look forward to bringing a group to Southern California again next summer!



Alumni Picnic

FIELD SESSIONS

CALIFORNIA CONTINUED



OXY tour of THUMS Island.



Kern River Oil Field in the San Joaquin Valley.



Drilling Rig in Bakersfield.



Alumni Picnic. Halliburton serving great food!



Area Geology Field Trip (Santa Barbara) by David Mayer.

FIELD SESSIONS

PEGN315 FIELD SESSION IN THE ROCKIES by: Mark Miller

Bill Eustes planned a great Rocky Mountain trip for over thirty students, teaching assistants, and myself. The students saw many different aspects of the petroleum industry. They saw first hand what career opportunities exist out in the oil patch. EOR, CBM, and other acronyms were not just learned as part of textbook jargon, but experienced first hand. While the California group got an offshore experience, the companies we visited continually told us about how they were applying offshore technology in onshore locations. Because of the generosity of the companies we visited, the students were treated to lunch most days.

Safety first! As always, we began field session with an orientation about class expectations. We then showed a couple of movies about the petroleum industry. Dennis Heagney donated a copy of "Remember Charlie" several years ago. We show this film at the start of each field session to emphasis safety as the students go out into the field. Many of them have never seen an oilwell, much less a drilling rig. The film emphasizes that lack of concern about safety can have dire consequences both to the individual and those around them. Students say that the film has a big impact on their view of safety.

Pioneer was the first company we visited. Neal Dannemiller and Karyn Powell led a geologic field trip of the Raton Basin in the morning. The students got to see coal and igneous dikes intermixed, the Cretaceous-Tertiary boundary, and did an exercise on what logs look like in different lithologies. Vince Santistevan and Jack Wiseman took over in the afternoon. He showed us what wellsites and compressor station facilities look like. Unlike the rest of the summer, field session started out rainy and cold.

David Veltri of El Paso was our leader for the next visit. We were very fortunate to visit El Paso's operations on the Vermejo Park Ranch. The 590,823 acre ranch is home to wildlife, wildlife, and more wildlife. El Paso's operations are de-

signed to minimize the impact on the ranch. In fact, except at designated stops, operations were practically invisible. The students saw their first drilling rig at El Paso. This was the first of six different ones. By the end of the trip, the students had seen big rigs, small rigs, techno-dependent rigs, techno-independent rigs, etc. This is what you get when the drilling professor designs the trip. Ask the California group how many drilling rigs they saw. Unfortunately, afternoon rain and sleet turned the roads into slippery goop. This prevented us from going to some sites that El Paso had planned for us. It also demonstrated that some drivers are much better in mud than others.



Alum, Chase Downs giving a tour at Anadarko's Salt Creek Field.

Thursday found us traveling from southern Colorado to the middle of Wyoming. Other than a note to self (never stay at a particular motel again), there is not much to report.



Going Mudding!

FIELD SESSIONS

ROCKIES CONT.

Anadarko hosted us at their Salt Creek operation on Friday. Chase Downs, Trayce Rauscher, Brandon VanderVoort, BJ Jackson, and Fran Smith hosted our students. It was interesting to see the CO₂ injection operations and their development over the last several years. Anadarko has taken a marginal field that relied on artificial lift and converted it into a field that has well that once again are flowing, with appreciable oil cuts.

In the afternoon, we were able to go to Roundtop Pump and Supply. Skip Harvey, Martin Stegman, and Jeff Johnston gave us a great presentation on the operation of beam pumps. They tore one down, showed what the internals looked like, and gave the students a head start towards understanding beam pumps. Students really enjoyed seeing the equipment first hand.

The weekend found us moving through the northwestern part of the Wyoming, towards Pinedale. Of course, why not see Thermopolis, Cody, Yellowstone Park, and Jackson Hole on the way? Geothermal resources and solar radiation were intensely studied in Thermopolis. Cody brought some nice meals and hotel rooms. Yellowstone found us chatting with a Ranger. Jackson was very scenic, but too brief a stop.



Here's the one thing more wild than the students.



Questar operations in Pindale, CO.

Questar gave us a very informative tour on Monday. Like El Paso's Vermejo Park operations, their operations are heavily influenced by environmental concerns. Kevin Williams, accompanied by Cheyenne Scharf, led our group through Questar's drilling and production operations. Because of all of the constraints, the engineering operational challenges were very interesting to the students. Jon Gent helped led the group on tours of the largest drilling rig we saw on the trip.



Rocky Spring, Halliburton camp

Karen Mills, Justin Slaugh, and John Gibbens helped led our group through Halliburton's Rock Springs yard on Tuesday. This is another stop that was particularly enjoyed by the students. They enjoyed seeing the large equipment and the laboratory facilities. Climbing on the mixer, seeing gel mixed in the lab, and hearing about service company operations contributed to a great learning experience.

Devon was the next stop. Tom Jantz, Derek Ridgway, and Robert Workman gave us an overview of their Utah operations. The students were amazed by the properties of the crude. Even though the API gravity is relatively high, the crude is solid at room temperatures. After an overview of the field, they took us out and showed us the line heaters and equipment needed to produce such a field.

Mike Guinn gave us a memorable presentation about Newfield's operations. He rewarded the students who paid attention to his talk with tee shirts and water bottles. Like Devon, Newfield's crude is solid at room temperatures. After

the presentation, he, Reed Abegglen, and Reed Durfey gave us a tour of the field. One of the unique aspects of the tour was a stop at a gas processing plant. Newfield knew that we had seen some field operations already and tailored our visit to incorporate a few unique stops.

A stop at Weatherford in Grand Junction allowed us to see how wellheads are put together. Rick Davis, who helps our completion's class, and Leroy Dickinson demonstrated the in's and out's of wellhead components. Aside from these practical details, students were acquainted with the relationship between operators and service companies. Rick gave the point of view of the service company.

Finally, our last day was with Williams. Susan Alvillar graciously led our group through a morning of tours. She was joined by Roger Decker for a tour of William's Parachute gas plant. Robert Caughlin and Jarvis Abbey helped the group on a tour of a FlexRig. The joystick control of the rig is something that the college crowd really likes.



Artificial lift-beam pumping unit at Devon's Utah operation

FIELD SESSIONS

PEGN 316 FIELD SESSION by: Jennifer Miskimins

Greetings from Massadona! I'm writing this article while out at camp which may or may not be a good idea – it definitely helps to capture the feel of the place but if I tell you things are going well, I might jinx it!! Oh well, if something major happens later on, I'll add a postscript to this article. So this year, we are running 107 students through the Massadona field camp. This number exceeded our camp's capacity and many of our hosts' also, so we had to make a major change on how the camp was run by offering two two-week sessions instead of just one. The first two-week session was comprised of 65 students while the second one is slightly smaller at 42 students.

As usual, we ran several exercises during each session including geologic mapping, various depositional environment studies (including eolian, marine, fluvial, and lacustrine), natural fractures, and drilling on Skull Creek just to name a few. The weather during the first session was not kind and included snow, sleet, rain, hail, and any other kind of precipitation that you can think of. So far, the second session has been much kinder to us with a lot more sunshine and mid-70's °F temperatures.

To manage such a large camp, I had an equally large staff to help run things. Donna Anderson from the Geology Department co-instructed once again, and we were joined by Manika Prasad whose personal write-up you can find in this newsletter. We also had eleven teaching assistants (TA's) that came and went during various days and sessions, although four of them braved all four weeks with me including Garrett Elsener, Linda Mohammad, Emily Ruyle, and Darcy Souta. Others that joined us included Jay Skinner, Brandon Binford, Raffaello Sacerdoti, Trevor Stroker, Nate Gilbertson, Amanda Rebol, and Natalie Naeve. I'd like to thank the following companies for generously supplying three of the TA's directly from their working staffs including Berry Petroleum (Natalie Naeve), BP (Amanda Rebol), and Newfield Rocky Mountains (Nate Gilbertson). If you're interested in spending some time in Massadona once again and TA'ing field session next year, please let me know and we'll see if we can work something out. For all you recruiters out there, this is a great opportunity to "infiltrate" the students and get to know them in a more relaxed setting.



Session A Class, the largest field session group in Massadona

FIELD SESSIONS

PEGN 316 FIELD SESSION CONT.

While planning for this year's sessions, I called our usual company hosts and asked them about sponsoring us again this year but also said "before you answer, would you consider doing it twice, once for each session?" Not one even hesitated before saying "yes". So, I would truly like to thank the following companies and company representatives for their generosity in hosting us: Anadarko and Steve McPherson; Questar and Russ Griffin; Chevron and Andy Walla; and Production Logging Services and Craig Stratton. We can't make this field session fly without all of you, so thanks again!!

So, reporting from Day 24 in Massadona, Colorado, with four more days to go, I'll close this article for now. As I said, if anything exciting happens, I'll include a postscript, but for now, it's just the same old Massadona dust everywhere, nightly trips to the Massadona Tavern, a few random mice or lizards in the cabins, a snake or two, and geology, geology, geology!!



Session B Class.

FIELD SESSIONS

PEGN 316 FIELD SESSION II MASSADONA

A First Timers Perspective
by Manika Prasad

Massadona – I hear there are legends and myths about it! I went on my first PE field camp there. I had been doing field camps in the geophysics and so this was a first. Of course, everything you say about Massadona is correct



Here are a few pictures of the camp to help you remember:
Note:

- The outcrop is behind the group.
- Everyone is busy drawing
- Only one person is actually looking at the outcrop – or is he responding to a buddy?
- They are helping each other
- But, most importantly, remember the beauty of the place!



Also remember that the TAs had the sticks. But, they could be bribed with adequate fluids!



Field camp without a storm – not possible! I was out in the second part of the camp. This one was considered a weeny little stürmle - the first group had some real weather – reminded me of picking up geophones in cold and fog. Snowed overnight. Next morning, our pickup truck with geophones was covered with snow!



In this one you can almost hear the river. Yes, we rafted the Green River at Split Mountain – another first for me and it was gorgeous!

Alumni Reception at SPE ATCE

To Our Alumni:

Your attendance is requested at the Colorado School of Mines, Petroleum Engineering Alumni Reception to be held during the SPE Technical Conference and Exhibition in Denver, Colorado **September 21 through 24, 2008.**

The Alumni Reception will be held on **Tuesday evening, September 23rd** at the Hyatt Regency Denver at Colorado Convention Center, **5:30 to 7:00 pm.**

Cost \$30

As always, there will be plenty of food with a cash bar.

All are welcome to attend this reception, regardless of attendance at ATCE.

RSVP (tsnyder@mines.edu) preferred but not required.



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