

COLORADO SCHOOL OF MINES
PETROLEUM ENGINEERING DEPARTMENT

NEWSLETTER

Greetings from Craig Van Kirk

It is my pleasure to report to you on the status of the Petroleum Engineering Department here at the Colorado School of Mines and to share some of my own personal notes. Our PE program is doing very well, and its future looks bright. Details in a moment.

On the home front, my family and I are doing quite well even though my wife, Denice, is undergoing chemotherapy as part of her treatment for breast cancer. In mid-June Denice underwent bilateral mastectomy surgery and then began 12 months of chemo treatments in early July. The prognosis is very good for her complete recovery; the cancer was caught early and appeared to be small and localized. Also, her hair will almost certainly grow back, whereas mine will almost certainly not.

Our daughter Connie and son-in-law Tom are expecting their first child during the week after Thanksgiving; and our son Sam and daughter-in-law Amy are expecting their third baby during the same week. What a joy our 4 kids have been, and what a joy 2 more grandchildren will bring in addition to 2-year old Grace and 4-year old Gus.

Denice and I truly feel very fortunate to have enjoyed

our family and friends for so long, and we look forward to many more happy years, more grandchildren, and new friends. Thank you for your cards, your good wishes, and your support. We appreciate them very much, so please keep the cards and letters coming.



At the Permian Basin Oil Museum Rig

Most of you have probably heard of the recent retirement of CSM President Ted Bickart, effective this past summer. During this period of an official search for CSM's next president, the Interim President is John Trefny. John has been Vice President of Academic Affairs for some years, and CSM is in very good hands in his care.

In our 1999 Newsletter last September we reported to you about the proposal we submitted to the National Science Foundation (NSF) to establish a National Engineering Research Center (ERC) here at CSM, called the Center for Multidimensional Engineered Earth Systems, incorporating VisionDome technology for 4-D viewing of the earth's subsurface. Unfortunately, in late October the NSF notified us that they would not be providing any funding. But they did offer

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**by completing
and mailing the enclosed
Alumni Survey**

encouragement that our proposed center looks very exciting and should be successful. The interest and support which we did receive was quite significant and satisfying; from private industry, US government agencies, State of Colorado, alumni, the National Geographic Society, et al. This area of visualization technology is a natural component for CSM and should be pursued.

Our students are doing very well in every respect. The graduating classes for May and December of 1999 totaled 30 BS degrees and for the May and December events during this year of 2000 we expect approximately 38 BS graduates. Class sizes are near optimum, and the job market has been quite strong. The May 2000 graduating seniors enjoyed an employment rate exceeding 90 percent before graduation day, and during the following 2 months all those students seeking employment had found jobs. Average starting annual salaries exceeded \$50,000.

Our graduate program is very healthy also, with our Masters and Doctoral student enrollments growing faster than any other program on campus. Total graduate student enrollment is approximately 60, with 50 percent of the students being US citizens, and the other 50 percent representing numerous countries from all over the world. This diversity helps make our program very exciting, interesting, and strong.

CSM's PE Department is one of only approximately 10 universities in the U.S. which offer Bachelors, Masters, and Doctoral degrees.

The undergraduate program is one of the oldest and largest in the world. The enclosed figure shows the historical number of undergraduate degrees granted



Craig Van Kirk

and the fluctuations responding to petroleum industry cycles and international crises. The future graduating classes are forecasted to grow annually from the current level over the next few years.

The faculty remains strong, healthy, and lean. No changes during the past year. Each one is active at both the undergraduate and graduate levels.

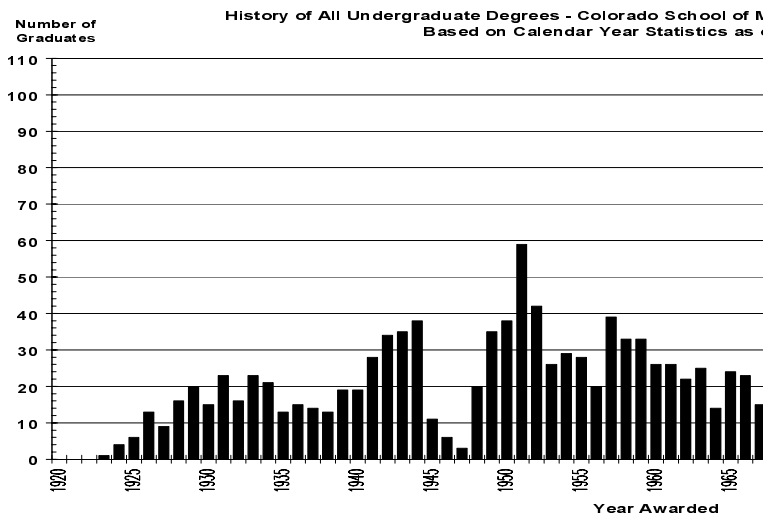
The professors and our students enjoy the full support of our capable classified staff. Dee and Chris and Bill have a combined total of 43 years with

the PE Department and provide essential ingredients for our continuing strength and successes.

- Bill Robbins,
Instrument Maker/Fabricator, 20 years
- Dee Brown
Program Assistant I, 16 years
- Christine Cardwell
Administrative Assistant III, 7 years

This Fall in mid-October CSM will be visited and reviewed for accreditation by the Accreditation Board for Engineering and Technology (ABET). Our PE undergraduate program, along with the other CSM engineering programs, will be evaluated over a 2 to 3-day period to determine if we are to be accredited for another 6 years, as we have been in the past.

This will be the fourth ABET review I have been associated with in the Department Head capacity, and I expect a positive review and report. The entire faculty and staff have been thoroughly involved in preparing for



Undergraduate Degree History at the Colorado School of Mines

our ABET review in October, submitting our ABET report at the end of June, and continually working to improve and assess the quality of our program. Feedback to us from alumni and employers is very helpful and very much appreciated, so please keep us informed of your opinions relative to our education program.

The mission of the Petroleum Engineering Department has evolved naturally over time in response to the needs of the graduates, in concert with the Colorado School of Mines Institutional Mission Statement and the Profile of the Future Graduate, and in recognition of accreditation requirements. The PE Department's Mission Statement enjoys a healthy relationship with CSM's Mission Statement, there are no apparent areas of disagreement.

Specifically, the PE Department's Mission is stated as follows:

To educate engineers for the worldwide petroleum industry on the undergraduate and graduate levels, perform research that enhances the state-of-the-art in petroleum technology, and to serve the industry and public good through professional societies and public service. This mission is achieved through proactive leadership in providing a solid foundation for both the undergraduate and graduate programs. Students are well prepared for life-long learning, an international and diverse career, further education, and public service. The program emphasizes integrated and multidisciplinary teamwork in classroom instruction and in research, and actively pursues interdisciplinary activities with many other CSM departments, particularly the Earth Science/Engineering Programs.

The PE Department strives to be the premier program in interdepartmental teaching and integrated, multidisciplinary research. It will play a leading role in educating future custodians of subsurface fluid resources.

One final comment on the Mission Statement above: The measure of the value of the stated mission 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.

The Petroleum Engineering Program's mission, goals, objectives, and assessment and feedback programs are available on our website at the following address: <http://www.mines.edu/Academic/petroleum/assessment/>. The Program's specific educational goals and related objectives are the following:

Goal 1: Broad education, based on

- 1.1 CSM systems and design courses
- 1.2 Effective communication
- 1.3 Skills necessary for diverse and international professional career
- 1.4 Recognition of need and ability to engage in lifelong learning

Goal 2: Solid foundation in engineering principles and practices, based on

- 2.1 Society of Petroleum Engineers' ABET Guidelines
- 2.2 Strong petroleum engineering faculty with diverse backgrounds
- 2.3 Technical seminars, field trips, and field sessions

Goal 3: Applied problem solving skills, as demonstrated by

- 3.1 Designing and conducting experiments
- 3.2 Analyzing and interpreting data
- 3.3 Problem solving skills in engineering practice
- 3.4 Working real world problems

Goal 4: An understanding of ethical, social, environmental, and professional responsibilities, as demonstrated by

- 4.1 Following established Department and Colorado School of Mines honor codes
- 4.2 Integrating ethical and environmental issues into real world problems
- 4.3 Awareness of health and safety issues

Goal 5: Multidisciplinary team skills, as demonstrated by

- 5.1 Integrating information and data from multiple sources
- 5.2 Critical team skills

The PE Department wants to develop a program that extends beyond the traditional focus on hydrocarbon reservoirs. The expanded program would focus on the prudent management of all subsurface fluid resources on earth, with appropriate extensions of applications into outer space (e.g., Lunar, Martian, et al.).

Our PE Department plans to continue our focus to address the needs of the petroleum industry first

To our Petroleum Engineering 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 Dallas, Tx, October 1-3, 2000. The Alumni Reception will be held on Tuesday evening, at the conference headquarters, Wyndham Anatole Hotel, the Miro Room, 5:00 – 7:30 p.m. The charge is \$20. As always there will be plenty of food with a cash bar.

HOW TO REGISTER: Phone Kathy Breit, Program Director of CSM's Alumni Office, at (303) 273-3290, or e-mail, kbreit@mines.edu or phone the Petroleum Engineering Office (303) 273-3740, or e-mail dbrown@mines.edu, prior to **SEPTEMBER 28, 2000**. Just check in at the reception.

CANCELLATIONS REQUIRED (Prior to September 28, 2000).

and foremost. In addition, the past successes of our students in professional careers in the environmental arena, law, business, and a wide variety of others demonstrate the strength and flexibility of their education. We intend that our students be prepared for a wide range of career choices, but we have not fully developed public awareness. This is an area of needed further expansion, that is, to better advertise that our PE expertise has a wide range of application outside the petroleum industry.

The recent institutional curriculum review and reform project has been coordinated with PE's curriculum. The curricular changes being adopted campus-wide are being fully integrated into PE's new curriculum, without serious difficulty. Our undergraduate curriculum requires our students to take more credit hours outside the PE option than any other CSM department, and more than any other PE Department in the U.S. We have always required a broad-based education for our students and will continue to do so. We expect to continue to require approximately 145 to 148 hours for the B.S. degree with the new curriculum.

For many years the PE Department has attracted the largest number of international students on campus, both in absolute numbers and in percent of total students in our program. We purposely manage this number and mix to ensure a high quality experience in diversity for all students.

The PE Department is among a small handful of CSM departments leading the way into the future. We have developed three new distance delivery courses, one in reservoir characterization, one in reservoir simulation, and one in enhanced oil recovery. The reservoir characterization course is being coordinated with the GE and GP Departments to dovetail with their new DL courses, and the reservoir simulation course is a "hands on" course using a test-software package that enhances student participation.

This Fall semester on September 21 and 22 we will host our Department's Visiting Committee, com-

posed of professionals representing a wide spectrum of the petroleum industry. The last previous meeting was held during the Spring semester of 1998. The Committee provides invaluable advice and forecasts for us to incorporate into the program.

Don't forget the upcoming SPE Conference in Dallas in early October. All of the professors will be there, and as usual we will sponsor at least 50 percent of the student costs for those who can get away from CSM for the 3 to 4 days. We expect approximately 60 of our students to go, usually the largest group from any university. Our sponsorship of the students is one of the many ways we invest funds which we receive as donations from alumni and industrial partners.

In closing, I want to thank so many of you for supporting CSM's PE Department, in so many ways. Your letters and cards are appreciated, whether they are short and sweet or otherwise.

Other support in the form of guest speakers, or hosting our students and faculty, or cash donations are essential to our continuing health. Typically, annually we receive several hundred thousand dollars in donations, grants, and gifts which we invest with the goal of the best quality program possible. Thank you for your interest and investments in CSM's PE program.

Please keep in touch and come and visit whenever you can.

My Very Best Regards to You,
Craig

Jon Carlson

One of my highlights last year was attending the SPE Forum on “Frac Pack Completions and Novel Sand Control Methods”. This was held in Phuket, Thailand and was made possible by *PERFORM* consortium funding and a Scholarship from SPE. I was able to discuss the potential productivity improvements by using permeable cement for sand control as well as CSM’s progress on making permeable cement with adequate strength. The forum provided many new ideas and contacts which were useful for updating and improving my graduate course on Soft Rock Completions (mostly sand control). This course is taught spring semester and has been well received.

While industry support of *PERFORM* has continued to shrink, the prospect of government funding has improved. *PERFORM* continues to provide some form of support for six graduate students.

The cannon has been removed from the lab downstairs, so that has freed up some excellent lab space. With additional funding, there are several good well completion and stimulation experiments that could be set up.

Richard Christiansen

While on sabbatical this past year, I wrote a text on relative permeability and capillary pressure, emphasizing an integrated assessment of the measurements of these properties. This text is among the most comprehensive discussions of relative permeability and capillary pressure relationships available. It

includes an overview of relative permeability and capillary pressure relationships from the literature, descriptions of two-phase flow with and without the effects of gradients of capillary pressure, summaries of methods for measuring both of these properties, and an introduction to numerical analysis for simulating two-phase displacements. The text is supplemented with many Excel workbooks with Visual Basic modules



Jon Carlson



Richard Christiansen

for hands-on learning of the principles.

The scope of the text ranges from undergraduate to graduate topics. For example, Chapter Two guides an undergraduate reader through fundamentals of Buckley-Leverett-Welge analysis for one-dimensional displacements. By the end of the chapter, the reader is equipped to use an Excel workbook for estimating oil recovery by waterflooding. He can vary the relative permeabilities, the viscosities, and flooding rate, and many other parameters to explore their effects on recovery.

At the graduate level, Chapter Seven leads the reader through the simplest of finite-difference routines for analysis of two-phase displacements with capillary effects. Excel workbooks with Visual Basic modules allow the reader to simulate different methods for measuring relative permeabilities. Using these workbooks, the reader can assess the quality of relative permeability data for any reservoir. My experience with these assessments has uncovered many poor-quality data sets.

The book should benefit anyone who seeks to understand fluid flow in oil and gas reservoirs. Of course, the text also applies to ground-water analysis and soil remediation. Soon, I will begin distributing the 250-page text as a three-ring binder accompanied by a CD for the Excel workbooks. If you are interested, please contact me at rchristi@mines.edu. By the time you read this, I will have taught a five-day course on the text to engineers at the Japan National Oil Company. I hope to teach several such short-courses in the coming year.

As mentioned above, I spent the last year on sabbatical. Many of my friends outside the academic community have asked me, “What is a sabbatical?” Having just experienced one, I have some answers. First, it is quite a change from normal life. My CSM salary dropped by 50%. That meant quite a bit of adjustment in the family budget. Fortunately, I arranged for some other employment to help with finances. I worked for two months at the Littleton office of Marathon Oil Company. And, I received some support from Saudi Aramco. And, I made some withdrawals from the ol’ nest egg.

Second, it is a process for recharging the reservoir of thoughts and ideas. In preparation for writing the text highlighted earlier, I spent countless hours studying 60 years of papers. Many times, I was surprised at the insights offered in the 1940s and 1950s. Also, I spent a lot of time working on numerical examples, doing the same sort of things that I expect students to do in my courses: finding bugs, improving logic, correcting errors, finding other bugs, and so on.

Third, it is an opportunity for focussing attention. A professor’s life can be quite hectic, with lectures and other course demands, with student advising, with

proposal writing. There are few chances for long-term consideration of a single issue. But, on sabbatical, I focussed my efforts toward studying, testing of ideas, and organizing for the book. Sometimes, the duration of required devotion to the task was excessive - it challenged my commitment.

Finally, it is a time for family. Although I spent too many hours in my basement office, I was able to break away for some family vacation. For the first time in many years, I accompanied my wife and children on Spring break - the CSM Spring break always falls in a different week than my children's Spring break. I also spent more time in the vegetable garden - it has not produced so well for many summers.

As I write this article, classes are about to begin for the 2000 Fall semester. There will be new course duties, new undergrad and grad students, and many meetings. Adjusting back to that commotion will be difficult. But, I hope to balance the demands on my time much better than ever before.

Alfred William (Bill) Eustes III

This newsletter is the fifth one I have written and edited. It doesn't seem like I have been a faculty member for that long. Yet, I have been on four field sessions (PEGN 315), six beginning drilling classes (PEGN 311), five advanced drilling engineering classes (PEGN 428), four freshman success seminar (CSM 101), and countless graduate and independent study classes. I will eventually figure out how to do this!

This summer, I had the pleasure of practicing what I preach. I spent half of my summer working for Sklar Exploration in Shreveport, Louisiana. I spent my time planning a couple of complex wells for them. I enjoyed everything but the heat and humidity! It was interesting to be working on "real" wells for an exploration company. I didn't quite realize the effects of recent economic trends in drilling. I also marveled at the connectedness of the Mines alumni. I couldn't make a phone call to somebody without running into an alum or someone who knew an alum. I think I spent half my time on the phone talking about Mines.

Well, last year, I was talking about the excitement about Antarctic drilling. I had submitted a five-year, 9.7 million-dollar proposal to manage all of the National Science Foundation's ice coring and drilling activities. We are batting zero with the NSF. The

NSF informed me in April that our proposal was not accepted. Instead, it went to the University of Wisconsin in Madison (Christiansen's alma mater).

Actually, this appears to be a blessing in disguise. Those folks were hammered by the NSF in that they were given the contract in July and had to deploy equipment for Antarctic operations in August. And the bad news was, half of their equipment was still on the ice in Antarctica! I wish them good luck.

None-the-less, CSM still has an ice connection. I was asked to be on the Scientific Advisory Board for Ice Drilling and Coring Services for the NSF. My first meeting is in mid September in Madison.

The Martian drilling research program at CSM is still in progress. Recent events at the Jet Propulsion Laboratory (you know what I mean) have changed the scheduling of many of the exploration projects. However, recent discoveries of potential water and the ALH84001 meteorite findings have increased NASA's desire to poke holes in various planets. Our project is one of many being funded by NASA. This year, our task is to determine the bit shape best suited for the internal percussive mechanism envisioned by the JPL. We are in the process of setting up a drilling lab in the old "cannon lab" room and hope to have experiments running by the time the Space Resources Utilization Roundtable II starts up on Nov. 8th here at CSM.

I have other irons in the research fire but none of them have come to pass, yet.

One of the items I like to write about in these newsletters is the field session I have led for the past three years. This year, we went to west and south Texas. As usual, I had my trusted co-pilot, Mark Miller, riding shotgun with me. As my teaching assistants, I had Carol Edwards-Knight and Eric Shivey. There was a total of 23 students.

We started out on Monday at home visiting the folks at Marathon's research laboratory in Littleton with Dr. Hossein Kazemi, no stranger to Mines, and Mike Hirsch. This was a good visit that primed us for our next stop. Tuesday, we left Denver for San Antonio on United. I will have more to say about United later! We drove to Ozona, Texas and stayed for the night. I rather liked the town as there were no bars.

Wednesday, we spent at Marathon's historic Yates field with Brad Hutchinson, Carrie Rustad, and about twenty other people. We saw just about everything old and new under the sun. In addition, the field was a real treat for me as I am an oilfield history buff. We drove on to Carlsbad, New Mexico where we were welcomed by our motel.

The next day, we spent on geology. We visited the Guadeloupe National Park looking at geology from the outside and Carlsbad Caverns looking at geology from the inside. Thanks go to the National Park Service. That night, we stayed in Hobbs, New Mexico. This town has sentimental value to me. It was the



Bill Eustes



At the discovery well of Marathon's Yates field



Talking with rangers at Padre Island National Seashore

very first oilfield town I started my petroleum career in. It was my first time back since 1980. It has changed somewhat.

The next day we spent with Chevron hosted by C.J. Affeld, Aimee Edwards, Dwayne Duncan, and many others near Eunice. The very first rig I ever set foot on was drilling about five miles away from Eunice. We visited three service companies in Hobbs that afternoon including Weatherford Artificial Lift Systems with and Halliburton. We drove on to Midland, Texas that evening.

We spent our Saturday in Midland visiting Don-Nan Oilfield Pumps hosted by Mark Adkins and James Curfew, Smith International in Odessa hosted by Bob Nohejl, and



A Carlsbad Welcome!

at the Permian Basin Oil Museum, a must see in Midland. That evening, we spent at an Alumni function hosted by the John Gould and the Midland alumni chapter. I don't know how we managed to get temperatures in the lower 70's for the picnic. I understand that was the last time they saw that so far this year.

Sunday was a long drive day to Victoria, Texas. There, we spent Monday with Schlumberger wireline with Dale Zankl, Ronny Walling, and their teams of engineers and at Dowell with Jon Smith and his team of engineers looking at the world from a service company viewpoint. Onward to Corpus Christi for the next stop.

Tuesday morning was spent on Padre Island National Seashore. It



Filters at Chevron's Eunice Monument South Unit



On the floor of the Permian Basin Oil Museum's rig



Eating well on the Discoverer Spirit

isn't what you think. Ken McMullen and Darrell Echols of the National Park Service hosted us as we studied the impact of oil and gas operations on the environment and the various ways to mitigate the impact. On the way out of the National Seashore, we stopped by and toured Unit #34 drilling literally right behind the first row of dunes just outside the National Seashore. Then we took the afternoon off to unwind.

Wednesday was another day of various tours. The first stop was at Helmerrich and Payne #157. This was hosted by J.T. Dohm of H&P. Then we visited Integrity Industries with Max Duncan and Lone Star Mud with Steve Disharoon. We finished the day with Steve Wilder of the Wood Groups in Corpus Christi looking at wellheads.

The next day we visited the Discoverer Spirit being built at Ingleside. Dennis Heagney, vice president of the Americas and Asia for Transocean Sedco Forex and the crew of the Spirit hosted us. Last year, we visited the Discoverer Enterprise and were amazed by the size and technology. This ship is just as spec-



Thruster for the Discoverer Spirit

tacular! They even had Blue Bell ice cream on-board.

We left Corpus Christi for San Antonio after the Spirit visit. This is where things get interesting. We were due to leave on Friday at 2:00 PM. At 9:00 AM that morning, one of our students, formerly a airline employee and apparently a clairvoyant, called United and found out that our flight was canceled because of "weather" related problems. United must have been extra sensitive to weather as no other airline had problems with the weather. Well, here we are in San Antonio stranded with 23 students, 2 TA's, 1 professor, and 1 very irate professor. Four of the students managed to figure a way out of town that night, but the rest of us had an impromptu overnight stay in San Antonio. And no, United did not so much as offer to pay us for our inconvenience. The next morning, we did leave on a 7:00 AM flight (that left at 10:30 AM) to get back home. And I will never eat another sausage breakfast burrito for the rest of my life.

John Fanchi

This past academic year was a busy year. We are continuing to refine the content of the integrated classes that are jointly taught by PE, geology and geophysics faculty. The courses are focusing on topics, such as reservoir heterogeneity, that are important to each discipline. Students from outside PE have been welcome additions to my senior reservoir engineering class. I have revised the second edition of my reservoir simulation book to accommodate the growing interest in the subject by people in disciplines outside of PE, and to make a smoother transition with the first semester course in reservoir engineering. The senior seminar in PE has changed from primarily oral communication to oral and written communication on topics of importance to the PE profession, including energy, ethics and lifelong learning.



John Fanchi

In addition to teaching, I have spent a great deal of time fund raising and presenting papers around the world. Last summer and fall we were hopeful that CSM would be awarded funding for a National Engineering Research Center, but learned before winter that we would not. We have since prepared a proposal to begin a Consortium for Integrated Flow Modeling.

Routine integration of modern reservoir characterization techniques into the reservoir management process is hampered by gaps in technology that slow the

transfer of data from one discipline to another. Model-centric methods based upon computer-generated 3-D representations of the earth are changing the way subsurface resources are characterized. The Consortium for Integrated Flow Modeling (CIFM) has been established to develop an understanding of the processes and interactions that are needed in a model-centric system.

There is growing curiosity in the industry about integrated flow modeling as an alternative to sequential flow modeling and forward modeling. I have had the opportunity to discuss integrated flow modeling in Houston, Tulsa, Rome, Ahmedabad (India), and Rio de Janeiro. Elsevier is scheduled to publish my book entitled **Integrated Flow Modeling** later this year.

The understanding of model-centric systems developed by CIFM will facilitate the integration of multidisciplinary skills and improve the ability of CIFM members to visualize, characterize, and predict the behavior of an integrated flow system. The development effort is designed to create an integrated flow model system that will benefit from attention to algorithm development, database expansion, software validation, ergonomic visualization, and timely applications. In addition to the knowledge developed by the Consortium, which may be incorporated into your existing software, Sponsors receive a prototype integrated flow model and associated visualization software. The integrated flow model is a flow model with a petrophysical algorithm. Students participating in CIFM receive valuable training that can benefit future employers.

We are looking for CIFM Sponsors. The progress of this work will be accelerated if it receives financial support. Funding is needed to support the students who will develop the technology and apply it in industry. If you know someone who might be interested in reviewing the CIFM proposal, please let me know.

Ramona Graves

Hi All – CWVK told me because I did not write an article, just to put my picture in to show I am still here. School going great, life is good also, Jacob moving to Durango and Lacey is in San Francisco. Old dog Sevarg died; young dog (the biter) is still around. Laser drilling and perforating still going strong. Just got a grant from DOE and some industry commitment. Love to you all. Ramona



Ramona Graves

Mark Miller

It was a good year. Students paid fees. Computers got faster. Monitors got bigger. Software was updated. Yes, it was a good year.

In addition to teaching undergraduate production and a graduate Visual Basic programming class, I was appointed to serve on CSM's technology fee committee. The committee is responsible for deciding where to spend

the technology fee collected from students and administration matching funds. The committee receives proposals from various campus organizations. After a question and answer session, each proposal is discussed and evaluated. We look at how many students the funds will effect as well as the impact the proposal will have. Some of the proposals are funded in full, some are partially funded, while others are rejected. I look forward to one more year of service on this committee.

Our department has done well. All of our recent proposals have been funded in some way. We have been able to improve our network wiring, obtain new computers, and improve the computers we have. Thanks to donations from individuals and companies, our department can often match what the technology fee will fund, increasing the likelihood that our proposals will be selected for funding. Another large part of our success is that we have shown the committee that we will invest the resources necessary for the operation and maintenance of these computing resources. The department funds the administration, repair, and maintenance of over 100 computers.

While computers duties were never far away, this summer was filled with interesting activities. To start with, I helped Bill Eustes with an enjoyable summer field session. As usual, Bill's planning kept us busy. Photos and more description can be found in Bill Eustes' section. Bad UAL, bad. I also spent a few days playing with a cement compressive strength tester. We have been trying to clean out some storage areas and the tester was an unknown. It turns out, after a heaping helping of hydraulic fluid, that the tester seems to work. It crushes aluminum cans flat. We are incorporating it into our undergraduate labs and research. Winding up the summer was our Petroleum SuperSchool. I taught production one day and led a field trip another day. HS Resources, BJ Services, and Caza Drilling all were gracious enough to



Mark Miller

allow our students to visit their sites. Thanks to all of you for your help.

Erdal Ozkan

After another wonderful year, I am starting my third year at the CSM. When I look back, however, it feels like I have always been here. The last year was as busy as the one before. I enjoyed teaching my favorite subjects: Well Testing and horizontal wells. We had an excellent undergraduate well testing class (PE 414). I had the opportunity to teach two graduate well testing classes (many PE departments cannot find enough students to teach just one well testing class these days) and I enjoyed talking about the recent developments in the area of multilateral technology in my horizontal well class. I must also mention the PE 316 field trip. This was my second year with Robert Thompson in Massadona and we enjoyed it. Because students never change (!), it must be us who are improving their skills to deal with students in a camping environment.



Erdal Ozkan

At the home front, we had some changes. After living in an apartment for two years, we finally settled in a house in Highlands Ranch. Now, I am now enjoying shoveling the snow during the winter and mowing the grass during the summer (and, everybody still tells me that it was the right decision). Our son, Sarp, is 11 years old and a six grader now. Changing four schools, three cities, and two countries in the last three years, he has become a survivor. I think, he can make it anywhere now. He and my wife, Aysin, spent their entire summer vacation in Turkey. I joined them for three weeks in July. It was excellent and we are already looking forward to the next summer.

I did not, however, spend my entire summer on vacation. I worked on some technical papers and solicited funding for the Optimization of Horizontal Well Completion project. We have been working on this project since 1997. It is a joint industry project supported by the DOE, Chevron, Phillips, Texaco, and Unocal. In February 2000, we completed the first phase of the project and launched the second phase that will last two years. We are collaborating with The University of Tulsa and The Pennsylvania State University in this project. We have good signs that some new members from abroad are considering joining the project in the coming days.

I am sure I have forgotten many interesting and

important things that have happened since the last newsletter. But, I am happy to have this opportunity to say hi to you and let you know that I am here and well. Hoping to see you in Dallas in October.

Robert Thompson

Everything is fine in the Thompson household. My daughter, Katy, is a junior in the business program at the University of Colorado at Boulder. My wife, Geri, is teaching homebound students in the Jefferson County School district.



Robert Thompson

I am putting the finishing touches on my doctoral dissertation in Education at the University of Colorado at Denver with a target graduation in December 2000. I would especially like to thank the students from the Spring 2000 class of the multidisciplinary petroleum design course (PEGN 439) for providing a rich data set for my research.

I would also like to thank you, our Alumni, for your response to our first annual alumni survey. Last year we focused on the Accreditation Board for Engineering and Technology (ABET) requirement that we “demonstrate that our students have the “recognition of need and ability to engage in lifelong learning.” Over 250 responded to our survey questionnaire last year. We have included a brief questionnaire again this year. Thanks again for your help and support.

I look forward to seeing everyone at the alumni reception Tuesday evening.

Cheers. Robert

Society of Petroleum Engineering - Kelda McFee, President

The SPE student chapter at Mines is looking forward to another great year! All of the officers got together last week to get a jump start on the year with planning events and meetings. With almost all new faces on the board, there are many fresh ideas for recruiting and creating more active club members. We hope to start out the year with a joint recruiting BBQ with AADE to get students involved in both organizations. It will also be a good opportunity to get to



Kelda McFee

know the students in the different classes within the Petroleum department. The officers also hope to have more social events in addition to our regularly scheduled lunch and learn meetings.

The main goals for SPE this year include continuing to provide a link between the students and industry, fundraising, and recognition as an outstanding school chapter. At this time, we are planning for another large turnout of about 50 students at the SPE Annual Technical Conference in Dallas this fall. As some of you may know, we were unable to host our golf tournament in the spring due to lack of industry participation. We hope to continue with other fundraising activities this year, but we would also like to try once more to have a golf tournament in the spring. The officers have been getting some advice from some Texas Tech students who raised a large amount of money at their golf tournament this past spring, and we hope that this will help us to put on a tournament more intriguing to the Denver area petroleum industry. Joint Session is already being set up, and we hope to have the International SPE President as the key speaker at that event. Our chapter plans to host guest speakers every first and third Thursdays of each month, ranging from technical to not as technical, to cover the interests of underclassmen to graduate students. We also plan to have several representatives at the Denver SPE Chapter's monthly meetings to encourage good student/industry relations.

Please take part in our activities from Joint Session to the Golf Tournament. Also if you or your colleagues are in the Denver area and have time to share your experiences or knowledge with us, please e-mail our vice president/program chair, Larry Hartman, at lhartman@mines.edu. We are looking forward to an exciting year, and we hope you will join us!!

American Assoc. of Drilling Engineers - Khris Kircher, President

The American Association of Drilling Engineers (AADE) is a professional organization that has a mission to provide a forum for the dissemination of practical drilling technology to those employed or interested in the drilling industry. The vision is to set a forum for the exchange of drilling practices and technology, with the values to promote professionalism and respect within the drilling industry, the community, and the environment.



Khris Kircher

The majority of the members of the AADE are either directly or indirectly involved in the petroleum industry. Currently, the Colorado School of Mines has the only



AADE visiting Caza #5 one fine Colorado spring day

student chapter of the AADE in the nation. The primary goal for the student chapter of the AADE is to promote student interaction with the professional members of the drilling industry through education. In the past this has been achieved by hosting "lunch and learn" sessions throughout the academic year. Annually, the student chapter hosts a joint session with the local Chapter of the AADE. Last year's joint session was held at the Denver Athletic Club, and the Denver AADE chapter awarded four academic scholarships for \$1000 to four student members of the AADE.

This year the Student Chapter is going to work hard to continue to facilitate a forum to enhance the interaction between the Colorado School of Mines student body and the different aspects of the drilling industry by continuing the lunch and learn sessions and inviting professionals to campus to talk about the state of the industry. If you are interested in attending one of our meetings please contact Khris Kircher at kkircher@mines.edu.

Pi Epsilon Tau - Mark Beiriger, President

Pi Epsilon Tau is the Honor Society of Petroleum Engineering. It is an organization created for engineers associated with the petroleum industry who have a sincere desire to foster an organization of loyalty, good fellowship, and mutual cooperation. The objectives of Pi Epsilon Tau are to nurture a closer bond between its members and the petroleum industry, to broaden the scope of activities of its members, and to maintain the



Mark Beiriger

high ideals and standards of the engineering profession. Active members are chosen on the basis of their scholastic accomplishments, leadership, and sociability. Eligible undergraduate candidates for membership must have a cumulative grade point average of at least 3.0 while graduate candidates are required to have a minimum 3.25 cumulative GPA. Honorary membership is available for those who have proved themselves to be worthy of membership in Pi Epsilon Tau by their technical accomplishments in the field of petroleum engineering.

The Colorado School of Mines Chapter of Pi Epsilon Tau has an active membership consisting of more than twenty undergraduate and graduate students from the CSM Petroleum Engineering Department. In April, we held our officer elections for the 2000-2001 academic year electing Mark Beiriger as President, Justin Stolte as Vice President, Larry Hartman as Treasurer, and Eric Miller as Secretary. The officers of Pi Epsilon Tau, along with our advisor Dr. Ramona Graves, look forward to a year of defining the Colorado School of Mines chapter as the strongest in the nation.

In September we will hold our first chapter meeting of the academic year. Plans will be made for a service project and dates set for our semester's activities. Also in September, we will identify eligible candidates for induction into Pi Epsilon Tau. A formal ceremony for those chosen will take place in early October. Focus will be made this year on members of Pi Epsilon Tau distinguishing themselves on campus. As some of the best and brightest students at CSM, we realize we have the responsibility of not only giving



Pi Epsilon Tau Initiates for 1999

back to the PE department, but also to the students of this great institution. Through active peer mentoring, we look to better enable other students to attain their personal and professional goals.

On the national level, the CSM chapter of Pi Epsilon Tau will take part in a national meeting to be held during the SPE Convention in Dallas. Throughout the year we will continue to work along side the national organization to facilitate interaction among university chapters and strive to better fulfill our mission. This is going to be an exciting year for those involved with the organization. We here at CSM look forward to the challenges and rewards that lie ahead. If you should have any comments or would like additional information about our organization, please feel free to contact our President at mbeirige@mines.edu.



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