

Volume 5, Issue 1

March 2006

## From the Chairman...

Welcome to another issue of the Petroleum Engineering Newsletter. Over the past year we have continued to flourish, with increased recruiting activities by industry and increased undergraduate enrollment.

As some of you already know, Tanya Pyke has left us to become a manager at a local bank. We wish her well in her new career. In her place, we are extremely fortunate to have hired Karen Balch, and welcome her to the program. She is a definite asset to us.

One of our major efforts this year is to commit time and effort to solicit support for endowments to the program. Both the Industry Advisory Board and Petroleum Engineering faculty are working collaboratively towards this goal. As many of you know, the Petroleum Engineering Program includes the Langdon B. Taylor Endowed Chair, the sole endowed position on campus for years. This endowed position was made possible by the generous support of the alumni.

It is time to expand our endowed positions to secure Petroleum Engineering's position as a top research and teaching program for the future. We are soliciting funding for additional endowed positions for the Petroleum Engineering program, allowing us to recruit and retain additional highly qualified faculty. With support from you and/or your company, we can reach this goal. If you are aware of company matching programs or are willing to contribute to this effort please contact me for more information.

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*A recently purchased display case holds unique items donated by students from around the world. The display case is located in the conference room.*



## Inside the Petroleum Department

In October 2005, the Department welcomed a new face. Karen Balch became the new Administrative Department Secretary. Although she is new to the department, she is no stranger to Tech.

“My first exposure to Tech started in Admissions four years ago. The biggest communication link was to outside prospective and new incoming students. I also contacted Tech Alumni when we needed reps in various areas of the U.S. to help recruit at college fairs.”

Since her arrival to the Department, communication has extended to working with faculty, staff, Administration, and the students in the Program. She still contacts Alumni, but she also gets to send out Department updates and other news.

“I love it. It’s great working with everyone here in the Department and the Alumni out there.”



## AROUND CAMPUS

If you haven’t been on campus lately, or in quite some time, you will discover some changes happening. It no longer takes you a few minutes to walk from Weir to MSEC. Since the infamous 2004 hail storm, most buildings have received a new roof. It’s a long and steady progression, with several buildings remaining for roof completion.

Cramer Hall was completely gutted and is being newly renovated, with two additional wings. The estimated finish date is June 2006.

Many offices are anxiously waiting for the new Joseph A. Fidel Center to open. Comprised of three floors, it will have a new cafeteria with different food stations, a salad bar, Starbucks Coffee and other features. There will also be a new bookstore and Post Office. Offices such as the Registrar, Admissions and Student Accounts are moving out of Brown Hall and into the building.

If you plan on attending this year’s banquet, take some extra time to walk around campus.



Cramer



The new “SUB”

## LANGDON B. TAYLOR BANQUET



2005 Graduates at last year’s banquet.

The 2006 Langdon Taylor Banquet is being held at a new location this year- Macey Center.

On Saturday, April 29, 2006, this year’s banquet is being held in the Galena Room from 6pm-10pm.

Invitations have gone out in the mail. If you did not receive one, or if you prefer to receive it via email, please contact Karen at

**(505) 835-5412** or email: [kmbalch@nmt.edu](mailto:kmbalch@nmt.edu).

	<u>Time</u>	
6:00	Cocktails	
7:00	Dinner	
8:00	Guest Speaker	
	Awards to follow.	
	<u>Cost</u>	
\$6.00	Students with SPE membership	
\$12.00	Students without SPE membership and/or guests	
\$20.00	at the door	
	Raffle ticket drawing held.	

### Awards

**F. David Martin:** Outstanding freshman student

**Langdon B. Taylor:** Outstanding undergraduate student who committed time and effort to the SPE student chapter

**Joe Taber:** Outstanding graduate student who committed time and effort to the SPE student chapter.

**Distinguished Faculty:** for their support of the SPE chapter

## ***NEW MEXICO TECH SPE***



The New Mexico Tech SPE Chapter has had a variety of activities since Fall 2005- proving to be on its toes for the remainder of the year.

The Fall 2005 semester kicked off with the traditional Welcome Party at Dr. Chen's house. The party was fun and a lot of students attended. It was a time to relax before a tough semester began.

In September, student members of SPE took a couple days off from classes to head to SPE's Annual Technical Conference and Exhibition (ATCE) in Dallas. ATCE is perhaps the most significant annual gathering of petroleum professionals anywhere in the world. Through presentations of some 350 highly relevant and timely technical papers, ATCE delivers the technology that fuels today's upstream oil and gas industry. The trip was a success. Students got to interact with professionals in the field as well as research job opportunities with many companies exhibiting their assets. Associate Professor of the Petroleum Engineering Department, Dr. Chen, was outstanding with his paper presentation on "Horizontal-W Productivity Equations With Both Uniform-Flux and Uniform-Pressure Wellbore Models".

For the Annual Gold Rush Golf Tournament, students volunteered to support the traditional tournament that took place during the legendary 49ers weekend celebration in October. The tournament was a scramble competition with 2-person teams. 1st, 2nd, and 3rd places were awarded. The money raised was part of the fund raising program towards the SPE Chapter. During the tournament, two small competitions were held at the golf course— closest to the pin and hole-in-one, giving golfers a chance to show their skill at driving.

The Fall semester ended with two successful pot lucks organized by Karen and others. The first was a Thanksgiving celebration with a wonderful traditional feast, followed by the second potluck at the end of the semester. At the latter, food was donated by students and faculty to charity and door prizes were given.

This spring, we are holding our annual raffle ticket drawing, where you can have a chance to win an Apple i-pod or a Sony Digital Camera. Raffle tickets will be included in the invitations to the Langdon Taylor Banquet (see details on opposite page). If you would like more tickets, please contact the office.



Hafa and Sandros helping at the 3rd Annual Golf Rush Golf Scramble, sponsored by the SPE. October 2005.



Dr. Chen's Welcome Party.  
Pictured are Dr. Chen and Bonn.

## STUDENT NEWS-AWARDS

### ConocoPhillips Fellowship

James Matthew Herrin is this year's recipient of the ConocoPhillips Rod Boade Memorial Fellowship in Petroleum-Related Rock Mechanics. Matt has received this Ph.D. Fellowship for the past three years. His research has focused on characterization and fluid-flow simulation of naturally-fractured tight-gas reservoirs. He used stochastic-discrete-fracture-network models to characterize subsurface fracture systems and simulate reservoir production. An important aspect of his work incorporated the coupled geomechanics deformation and fluid-flow behavior of natural fractures. Following the successful defense of his dissertation in November, Matt accepted a post-doctoral position with McGill University in Canada, and is working on a cooperative project with ConocoPhillips in Calgary, Alberta.

### Chevron continues to support New Mexico Tech.

A significant fraction of gas potential resides in low-permeability, poor reservoir quality sands. Historically, these zones were ignored or missed in favor of the better sands in the well. However, today's improvements in reservoir characterization and stimulation have led to a re-evaluation of these zones as potentially productive. A particular interest is producing from these bypassed zones in existing wells, thus obtaining an economic benefit as well as minimizing the environmental impact of adding more boreholes.

One of the technical challenges is effectively stimulating bypassed zones that exist between previously producing formations. As an example, in the San Juan Basin, the Menefee Formation is bound by the Cliff House Sand above and the Point Lookout Sand below. Both sands have been primary targets of development for years. Thus, the goal is to evaluate the impact of the depletion of these bounding layers on the performance of the Menefee layer. John W. Moreno, a graduate student from Colombia, has been developing a 3D, numerical model to address this question. His work couples a hydraulic fracturing propagation model with production performance. Also included is a proppant transport model, in order to determine the proper permeability distribution as a function of embedment and closure pressure. The model is intended to evaluate how significant the impact of the depleted bounding layers (or primary targets) is on the performance of a secondary target.

This work was funded through the generous support of the Chevron Fellowship program.



## SPRING 2006

### Dr. Chen Classic

Dr. Chen's Classic Golf Tournament is being held on April 29, 2006.

Spend the day, before the banquet, basking in the sun, playing golf and enjoy catching up with old Alumni, new Alumni, students and faculty.

Lunch is at 11:00 am

Tee time is 12 Noon

The fee is \$25 and includes lunch, green fees, and a golf cart.

You can send in your payment or bring it with you the day of the Tournament.

Checks & credit cards accepted-please do not send cash.



Chen Classic Professors Team-2005  
Pictured left to right are- Dr. Robert  
Bretz, Dr. Her-Yuan Chen and  
Dr. J. Michael Kelly.

## TECH NEWS

### San Juan Basin Data

A PRRC research team led by PI Martha Cather of PRRC's Industrial Services and Outreach Group (ISOG) was recently awarded a U.S. Department of Energy (DOE) research grant for approximately \$600,000 for their project, "Petrophysical Analysis and Geographic Information System for San Juan Basin Tight Gas Reservoirs." This project entails the creation of a database system that compiles accumulated data from northwestern New Mexico's San Juan Basin gas and oil wells.

The co-PIs are Tom Engler, PRRC Research Engineer and Associate Professor of Petroleum Engineering at NMT, and Robert Balch, Research Scientist and head of PRRC's REACT Group.

This 24-month project will result in a database system that contains data on oil and gas wells in the San Juan Basin, as well as information about special core analyses performed on specific wells in the basin. The primary goal of this project is to increase the availability and ease of access to critical data on the Mesaverde and Dakota tight gas reservoirs of the San Juan Basin. A relational GIS will be created to archive this data and the information will be analyzed to fine-tune regional well log interpretations, improve pay zone recognition, determine permeability ratios, and analyze water chemistries and compatibilities within the study area.

This project started as a data recovery mission. Over the years, a large amount of paper data on the San Juan Basin has been collected and stored in a number of public repositories, including the New Mexico Bureau of Geology and Mineral Resources, another research division at New Mexico Tech. Researchers plan to compile this data into a useful and useable database.

This project is expected to have several positive impacts on SJB production. A significant increase in availability of critical information that producers can choose to utilize in their own work processes, such as regional permeability trends and ratios, will help them make better decisions on placement of infill wells. Identifying and quantifying bypassed pay zones in existing wells should increase the rate of development and improve the efficiency of recovering natural gas from these low-permeability formations.

The project team is now assessing the status of San Juan Basin data available in the public domain, and asking industry and researchers what information would be most relevant and useful to have in the new database. The kickoff meeting for this project will take place in Farmington, in February 2006.

*(Taken from the PRRC Newsletter, Vol 21, No 1, Winter 2005-06)*

## Attention Alumni...

In early fall, the office computer crashed and some information was lost. The biggest concern was the Alumni Database and how accurate it was, after the information was restored.

Since October, we have been diligently trying to get an updated list and discovered some information was so old, we lost means of contact with some of our Alumni. We still need your help in keeping our database up-to-date.

The best way to keep our information current is with your help by calling or sending us an email to let us know of any address, phone or email changes. Although we do not mail to International countries, we do send the same information via email. With the technology available to us today, email is proving to be efficient in cutting down postage costs and allows us to get the information to you faster. If you prefer to be contacted via email, please contact us and let us know. Any information you give us is kept confidential.

The Office of Alumni doesn't keep a list as extensive as ours and we would like to be able to share your information with them. However, if you request that it not be shared we will honor such request and will keep your information confidential. Contrary to popular belief, the Alumni Office is not always seeking donations from Alumni; they like to keep in touch and put any announcements in *Gold Pan*, a publication the Office for Advancement and Alumni compile and mail out to all Alumni. One big event they have is the Gold (50-year) and Silver (25-year) Reunion every year the Friday just before Commencement. This year, they are only planning a weekend event and everyone is invited. For more information, contact Rose Baca at (505) 835-5525 or email her at [rbaca@admin.nmt.edu](mailto:rbaca@admin.nmt.edu).

## Looking Ahead...

Throughout the course of the academic year, we hold seminars for students. In the past, some Alumni, from various companies, have visited to give a seminar. The fall is our busiest semester with seminars, but we welcome anyone who would also like to come in the spring. If you are interested in visiting for the upcoming 2006-07 year, please contact us early.

Interested in being a guest speaker for next year's banquet or any in the future? Feel free to contact us.

If you ever find yourself on campus, feel free to stop by and say hello.

Thank you for all of your past and continued support!

## General Information:

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**Alumni web page:** <http://infohost.nmt.edu/mainpage/alumni/list.html>

**Gold Pan:** [http://www.nmt.edu/alum\\_fr/gpan.html](http://www.nmt.edu/alum_fr/gpan.html)

**Services for Alumni:** [http://www.nmt.edu/alum\\_fr/services.html](http://www.nmt.edu/alum_fr/services.html)



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