

Institute for Energy and the Environment

Dr. Joseph M. Suflita
Characteristics of Anaerobic Microbial Communities by DGGE and Evaluation of Their Potential for Biodegradation. Theoretical and Practical Molecular Approaches for In-Situ Biodegradation US-EC Summer Course, Rutgers University, June 1999
The Relevance of Nitrate Application to Control Sulfide Formation in Oklahoma Oil Fields (with I. Davidova) *Anaerobic Biodegradation of Benzene and Toluene in Gas Condensate-Contaminated Sediments* (with L.M. Grieg & G.A. Ulrich) *Use of 13 C-NMR to Probe the Anaerobic Biodegradation Pathway for Toluene* (with M.A. Nanny & M.E. Caldwell) 5th International Petroleum Environmental Conference, Albuquerque, NM October 1999

Dr. Lee Krumholz
Krumholz, L.R., Harris, S.H, Tay, S.T. and J.M. Suflita. 1999. *Characterization of two subsurface H2-utilizing bacteria: Acetobacterium psammolithicum and their ecological roles.* App. Enviro. Microbiol. 65:2300-2306
Tay, S.T.-L., H.F. Hemond, M.F. Polz, C.M. Cavanaugh and L.R. Krumholz. 1999. "Importance of Xanthobacter autotrophicus in toluene biodegradation within a contaminated stream" Syst. Appl. Microbiol. 22:113-118.

Anaerobic Microbial Activities in Deep Gulf Coastal Sediments (with Sonal Patel, Ralph S. Tanner, Dwayne Elias and David B. Carson) International Symposium on Subsurface Microbiology, Vail, CO. August 1999

Energy Institute of the Americas Ambassador Edwin G. Corr

Benefits to the Private Sector of a Hemispheric Energy Business, Forum Roundtable, 4th Hemispheric Energy Ministers Conference, New Orleans, La. July 1999
Energy Integration: A Critical Path for the Development of the Americas, PDVSA's International Center for Education and Development (CIED) Annual Conference, Caracas.
M. W. Downey and E. G. Corr, *Politics and Exploration*, in D. Felio, T. O'Conner and G. Kronman, editors, *The International Business of Exploration*, American Association of Petroleum Geologist. October 1999
M.G. Manwaring & E.G. Corr, *Beyond Declaring Victory and Going Home and Some Final Thoughts*, in Anthony Jones, editor, *Beyond Declaring Victory and Coming Home: The Challenges of Peace and Stability Operations*, Westport, CT.: Greenwood Publishing Group, Inc. 1999
K.L. Fishel and E.G. Corr, *UN Peace Operations in El Salvador: The Manwaring Paradigm in a Traditional Setting*, in John T. Fishel,

editor, *The Savage Wars of Peace: Toward a New Paradigm of Peace Operations*, Boulder, CO: Westview Press, 1999.

Institute for Gas Utilization Technologies

Dr. Richard G. Mallinson
Supergas Natural Gas Vehicle Technology, Gas Naturale, S.A., Bogota, Colombia and ICP, Ecopetrol, Bucaramanga, Colombia. June 1999
Methane Conversion to Higher Value Products in Low Temperature Plasmas, Chulalongkorn University, Bangkok, Thailand. July 1999
Natural Gas Utilization Research at the University of Oklahoma, Petrovietnam, Ho Chi Minh City, Vietnam. July 1999
Novel Technique for the Production of Hydrogen Using Plasma Reactors (with T.A. Caldwell, C.L. Gordon, P.J. Howard and L.L. Loban), American Chemical Society National Meeting, New Orleans, La. August 1999
Natural Gas Conversion Technologies, Total/Fina/ELF/REPSOL, Brussels, Belgium. September 1999

Institute for Energy Economics and Policy

Dr. Dennis J. O'Brien
Panelist, Asia Rural Energy Infrastructure, RISE, Pacific Economic Cooperation Council, St. Louis, MO. May 1999
Annual lecture on Asia Energy Economics to Petroleum Executive

Management Program, Institute Petrole du Francais, Paris, France. July 1999
Energy and Weather: A Convergence of Forecasts for the Winter Season, 1999-2000, Conference on World Energy Prices, London. Sept. 1999
Global Energy Outlook, Royalty Conference, PDI/NTSU, Houston, TX. October 1999

Dr. Boyko Nitzov

Presentation on Methods of Corporate Planning and Project Evaluation by Using Modern IT Solutions, Kazakhoil, Almaty, Kazakhstan. May 1999
Political Stability in the Caspian: Potential Impact on Oil and Gas, Dallas Committee on Foreign Relations.
The Northeast Asian Gas Pipeline: Focusing Transparency and Harmonization, 5th Annual Northeast Asian Gas and Pipeline Forum, Asian Pipeline Research Society of Japan. Yakutsk, Sakha, Russia. July 1999
Energy Services and GATS: A Case Study of the Balkans, 20th North American Conference of USAEE and IAEE, "The Structure of the Energy Industries: The Only Constant is Change," Orlando, FL. Sept. 1999



**The Link
Between
the Petroleum
Research
Community &
Industry**

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THE UNIVERSITY OF OKLAHOMA

**SARKEYS ENERGY CENTER
CONNECTIO N**

FALL 1999

**Sarkeys Recognized Internationally
By TDA Funding For Kazakhstan Information
Systems Project**

There is an old Asian legend, that somewhere in the Altay Mountains, which straddle Kazakhstan's southern borders, is Shambhala—the paradise that will someday reveal itself. But for now, Kazakhstan struggles with the realities of post-communism. A vast, sparsely populated country, endowed with talented, well-educated people, a strong industrial base and plenty of fertile land, much of Kazakhstan still looks much the way it must have when Genghis Kahn and his hordes ventured across its countryside.

However, Kazakhstan's paradise may not come in the form of tropical visions, but in wealth from some of the largest producing oil reserves in the world. Its oil and gas reserves alone potentially make it one of the richest republics in the Central Asian region. According to the Republic of Kazakhstan's Analysis and Strategic Research Center, there have been nearly 160 deposits of oil and gas discovered to date which are approximately equal to present

day resources of the entire Western European continent. These oil and gas fields contain approximately 20 billion barrels of oil and 700 million tons of gas condensate.

With all of these valuable natural resources at the country's disposal, the shortage of an efficient and technologically-advanced petroleum information system hinders Kazakhstan from cashing in on its good fortune.

To aid Kazakhstan in reaching its full potential, the U.S. Trade Development Agency (TDA) has approved a Sarkeys Energy Center's Institute for Energy Economics and Policy (IEEP) proposal for \$756,000. The grant is funding a feasibility study which will design an oil and gas information management system for exploration and production data, and transportation of oil and gas in Kazakhstan. The system will also help Kazakhoil, the state's oil and gas company, and international

(continued on page seven)



Sarkeys Energy Center director Gus Gertsch and Kazakh colleagues in the western Kazakhstan city of Atyrau on the Caspian Sea.

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Message From The Director

The Ivory Coast, China, Turkmenistan, Vietnam, Azerbaijan, Senegal, Morocco and Kazakhstan—What do these places have in common with Norman and the University of Oklahoma?

As several articles in this issue illustrate, they are all places where the Sarkeys Energy Center has increasing research and training collaborations. The business strategy for us is simple. As "Deep Throat" advised Bob Woodward of *The Washington Post* at the time of the Watergate affair: "Follow the Money." Such regions of the world, faced with the need to modernize their energy industry and competing more and more in a global marketplace, are eager to embrace Western partners, not only Western operating partners, but also Western educational and research collaborators. Hence, these regions are becoming an important market for those of us in the Energy Center.

As industry and government officials in these countries come to learn more about the University of Oklahoma and our long tradition and affiliation with the oil and gas industries, they often make the decision to sponsor degree and training programs for both their current employees and for younger people pursuing undergraduate and graduate degrees. These students will comprise the next generation of leadership in their respective countries and in the energy industries of those countries. OU will leave its mark on these students forever.

OU alums who, over the years, have assumed positions of technical and business leadership in the international energy industry have planted the flag. Their efforts are responsible for our position of leadership in the world. And as some of the articles in this issue illustrate, they help us perpetuate this position of leadership by providing scholarships and training programs available to nationals of every country. We owe these alums a huge debt.



Dr. W.D. "Gus" Gertsch

"We owe our alums a huge debt"

Nitzov Participates In USAID Program In Azerbaijan

Dr. Boyko Nitzov, Senior Research Associate for the Institute for Energy Economics and Policy, recently completed a two-week visit to Azerbaijan as part of a program developed by the U.S. Agency for International Development and administered by the Academy of Educational Development.

"The program provides lectures on decision making, the petroleum industry, financial planning, and how to deal with non-renewable resources and the dangers of a mono-export economy," said Nitzov. "It provides participants an avenue for discussion regarding information for establishing a national economy to compete in today's global marketplace."

The Sarkeys Energy Center participates in the program by providing lecturers, information on design of the country's economic development, and logistical help for participants in Azerbaijan. Currently, constituents from Azerbaijan are on the OU campus participating in additional training sessions.

"It has been an excellent opportunity to provide valuable information to those individuals who are involved in the progress of Azerbaijan," added Nitzov. "We have also been able to make contacts and form positive relationships with the Academy of Sciences of Azerbaijan, high ranking government officials, politicians and the president of Baku State University."

DeGolyer Presidential Fellowship Awarded to Geophysics Graduate Student

The Sarkeys Energy Center is pleased to announce that Lindsay Poth, a geophysics graduate student, has been awarded the DeGolyer Presidential Fellowship. Poth is advised by Dr. John P. Castagna, Director of the Institute for Exploration and Development Sciences.

Poth, originally from Pleasanton, Tx., completed her B.S. in geophysics, a minor in geology and graduated Cum Laude from Texas A&M. Since coming to OU, she has served as a geoscience internship for two summers with Texaco Exploration and Production based in New Orleans. Poth completed a regional mapping project in South Texas, incorporating 2D seismic lines, numerous well logs and paleo data during the summer of 1998. She was involved in a 4D and AVO modeling project in the Gulf of Mexico this past summer.

Poth's plans are to pursue a career in oil and gas exploration upon completion of her master's degree.

"The Energy Center is very pleased to be a participant in this scholarship program which honors a pioneer scientist in the energy industry," said Dr. Gus Gertsch, Sarkeys Energy Center director. "Lindsay, because of her substantial preparation and her career goals, is a deserving recipient of the Sarkeys Energy Center's first DeGolyer award."

The DeGolyer Presidential Fellowship program was established by OU President David L. Boren to honor OU alumnus and donor Everett L. DeGolyer. His purpose is to recognize DeGolyer's affiliation with and substantial contribution to the School of Geology and Geophysics and the History of Science collections at the University of Oklahoma. The fellowship is awarded to a graduate student involved in the research institutes of the Sarkeys Energy Center, a graduate student in the School of Geology and Geophysics and a graduate student in the Department of the History of Science. Each student receives \$5,000 to augment their graduate assistant stipend.

This fellowship program will help meet the goals of the University of Oklahoma's Reach for Excellence campaign, the Sarkeys Energy Center's strategic plan and the School of Geology and Geophysics' Second Century Plan. ■



Lindsay Poth

Kazakhstan Information Systems Project (cont. from page one)

companies optimize production, evaluate investment opportunities and provide a more effective plan of operations.

"Information technology is very important to Kazakhstan, and this feasibility study will chart the path to its success," said Dr. Dennis O'Brien, director of IEEP. "It will help to develop information and data that will provide the government of Kazakhstan valuable assistance when dealing with the international world of investment, operations and management."

Today, petroleum data exists mostly in hard copy and limited digital formats. This type of storage makes it difficult to create, retrieve and analyze information. The data is also often stored at different locations making the transmission and dissemination of data, even for such routine operations as monitoring the flow of wells and output of fields, inefficient and nearly impossible.

Based on the current methods of collecting and storing data, the Energy

Center's project has two major aspects: The improvement of the operation, management and decision making processes within Kazakhoil; and the improvement of data storage and processing and dissemination capabilities for the oil and gas industry. The ultimate goal is to establish a more informative and effective means for the Kazakhstan government and international investors to evaluate risks and recognize potential opportunities.

"We believe the introduction of a modern information system would bring immediate benefits in the form of better field and project management. This would eliminate the current time-absorbing routines and establish a more effective means to utilize their human resources," said Dr. Boyko Nitzov, IEEP's associate director. "The results of the study will help Kazakhoil emerge as a more competitive entity in today's world of globalization and provide the government with the means to make informed business decisions."

The impact of the TDA funding is not only significant to Kazakhstan's future, but to Sarkeys Energy Center and the University of Oklahoma. "This is the first for the Energy Center and the IEEP of several possible TDA-funded projects that will be coming down the road," explained O'Brien. "This project has opened some very important doors in the World Bank lending community, in addition to providing us with a valuable learning experience in the area of non-traditional training opportunities. It's a step in the right direction to establish the Sarkeys Energy Center and IEEP as a 'Center of Excellence' in this subject area and to the creation of high-tech and intellectual-property based businesses in Oklahoma."

The project also includes Computational Geosciences, a Norman-based company headed by Ken Nixon. Mark Stern is the project manager and Dr. O'Brien heads the study. ■

Vanco Energy Company Establishes Scholarship Program — West African Nations To Benefit

The Sarkeys Energy Center and Vanco Energy Company, of Houston, Texas, is pleased to announce the establishment of the Vanco Scholarship program to train oil and gas professionals of the Ivory Coast and other West African countries where Vanco has exploration and production commitments. The initial gift will range from \$250,000 (during exploration) to \$600,000 (during exploitation) per year for Ivorian nationals.

"Mr. Gene Van Dyke, like so many alumni prominent in the global energy industry, is making the University of Oklahoma the beneficiary of his company's obligation to support education and training programs for Ivorian nationals," said Dr. Gus Gertsch, Sarkeys Energy Center director. "The program scope that Mr. Van Dyke has negotiated with the Ivory Coast government includes petroleum-related degree programs at OU as well as short courses and other training activities conducted by our faculty at locations in the Ivory Coast."

Primary recipients of the Vanco Scholarships will be members of Petroci, the state-affiliated petroleum company of Cote d'Ivoire. Scholarships will also be extended to Petrosen, the state-affiliated petroleum company of Senegal, where Vanco has recently acquired deepwater offshore acreage and an exploration commitment. In addition, ONAREP, the state-affiliated petroleum company of Morocco, is invited to participate in

Sarkeys Energy Center programs under the Vanco Scholarship in accord with Vanco's exploration activity offshore Morocco. Recipients can either choose to take professional enhancement training courses or complete any level of petroleum-related degrees or research.

Training will be conducted in Norman, Okla., Cote d'Ivoire and at Sarkeys Energy Center-affiliated labs and institutes in the U.S.. In the next several months, two training sessions will be conducted that include exploration geophysics and a coring, core handling and analysis training program that will be conducted by the Rock Mechanics Institute (RMI) and TerraTek Inc., a member of RMI's consortium, in Salt Lake City.

Gene Van Dyke, an OU alumnus ('50) who founded Vanco Energy Company, is a pioneer in the field of offshore exploration and deepwater drilling. Upon completing his degree in geological engineering, Van Dyke briefly worked for Kerr McGee before establishing himself as an independent producer in 1952.

Van Dyke's initial focus was onshore oil exploration in North Texas, the Texas Gulf Coast and South Louisiana. However, in 1972, he ceased onshore domestic exploration to pursue the offshore frontiers of the world. Van Dyke's choice would prove to be a valuable one, because over the next 25 years, Vanco and its predecessor companies (Van Dyke



Gene Van Dyke

Oil Company and Van Dyke Energy Company) have been responsible for many offshore oil discoveries.

Following a study of the major basins of the world in 1996, Van Dyke led his company to explore deep waters off the shore of West Africa. In just three years, Vanco has become the leader in deepwater acreage holdings in West Africa with 20 million gross acres combined in Gabon, Morocco, Cote d'Ivoire and Senegal. In addition, Vanco is developing offshore prospects in The Netherlands and in the South Pacific.

"All of us at the University are grateful to Gene and to Vanco for including us in this landmark partnership," added Gertsch. ■

New Graduate Program To Be Established in Natural Gas Technology and Management

Initiatives are currently underway, in collaboration with the Sarkeys Energy Center's Institute for Gas Utilization Technologies and its Institute for Energy Economics and Policy, to establish a cross-disciplinary educational program at the University of Oklahoma by creating a graduate degree program in Natural Gas Technology and Management. The academic program is a collaborative effort being led by the School of Petroleum Engineering with the School of Chemical Engineering, Department of Economics, and the OU Price College of Business.

This program will give graduate engineers the opportunity to merge the full chain of natural gas from the resource to its use considering both the business and technology of natural gas. Participation from business and economics students will be beneficial in exposing them to the technological factors involved in the energy industry. Courses are under development in which interdisciplinary teams of engineers, business and economics students will bring their respective expertise together to solve case study type problems.

"The cross-disciplinary approach involving faculty from predominately engineering, business and economics, will provide a unique educational opportunity to afford engineers with a better business and economic foundation, and business and economics students with a better understanding of the technological issues," explains Dr. Richard Mallinson, Director of the Energy Center's Institute for Gas Utilization and professor in the School of Chemical Engineering and Materials Science. "This will benefit undergraduate students as well through electives and project participation."

A proposal for funding from the Department of Energy's Experimental Program to Stimulate Competitive Research (EPSCoR) initiative has been assembled to bring program development funds into the

Institute and new degree program through a core cluster research program.

The funding would go toward a research program that will encompass this interdisciplinary approach, entitled "Optimization of Process and Project Development for Natural Gas Conversion To Chemicals and Fuels." The results of this collaboration, if funding is approved, will be more rapid development, wider implementation and efficient utilization of natural gas resources in the United States and globally. The benefit would include decreased dependence on imported energy (and chemical) supplies, lower environmental impact of chemical and fuel production and use, and increased economic development. The development of processes for gas conversion has received increasing importance in the Department of Energy strategic plan in recent years.

In addition, faculty and students from Oklahoma State University and the University of Tulsa are also represented in the new research program.

"The development of the academic program is already underway and funding from DOE/EPSCoR would help build the infrastructure to support both the academic and research program's future," Mallinson added. "These two initiatives will build upon the existing reputation and expertise Oklahoma universities have in energy research and knowledge.

"The technology and knowledge transfer of the results of the research cluster will make the program the international center for knowledge of gas utilization technologies and allow companies and governments to monetize their resources in the most efficient and environmentally benign way."

This program will also be a leader in economic development for the state, made possible in part by the new laws passed last fall that enable the state's universities to develop businesses from their knowledge, rather than simply export the knowledge. ■

O'Meara Heads New Center for Reservoir Engineering In School of Petroleum & Geological Engineering

The directors of the Sarkeys Energy Center and the School of Petroleum and Geological Engineering (PGE) take great pleasure in announcing the newly established Center for Reservoir Engineering. The creation of the new Center within PGE is of great significance to OU students pursuing energy-related degrees and represents a historical milestone for the Energy Center and the OU College of Engineering.

The new Center will be headed by Dr. Dan O'Meara, current director of the Energy Center's Institute for Reservoir Characterization. The new associate director for the Center for Reservoir Engineering and the Institute of Reservoir Characterization will be Dr. Faruk Civan, a 16-year faculty member of PGE. Dr. Roy Knapp and Dr. Richard Hughes, both PGE faculty, will also be involved in the new Center's operations.

This merger of complementary strengths will position OU among the world's leading educational and research institutions in the area of reservoir engineering and management. The new leadership's focus will be to reinvigorate the undergraduate and graduate programs in reservoir engineering and to gradually add additional talent to the program through adjunct faculty from industry and post-doctoral appointments.

The quality of the team's educational and research efforts, in addition to the value-added for OU students, will be enhanced by the department's interactions with the Sarkeys Energy Center's Institute for Exploration and Development Geosciences, headed by Dr. John P. Castagna, and by the staff and facilities of the Integrated Core Characterization facility in Tulsa. ■



Dr. John P. Castagna

Castagna Concludes Term On SEG Executive Committee

Dr. John P. Castagna, McCollough Chair Professor and Director of the Institute for Exploration and Development Geosciences, is concluding his term in November as first vice-president of the 1998-99 executive committee for the Society of Exploration Geophysicists.

"I am extremely pleased with the accomplishments the committee and SEG have made over the past year," said Castagna. "We have addressed many strategic issues and the budget's altruistic expenditures. There has also been a movement toward endowing more scholarships and the membership expanding from its concentration in the domestic U.S. to a more global member base."

Based in Tulsa, Oklahoma, the Society promotes the science and education of exploration geophysicists. It fosters the expert and ethical practice of geophysicists in the exploration and development of natural resources, in characterizing the near surface, and in mitigating earth hazards. SEG has more than 15,000 members working in 110 countries. ■

Upcoming Events

SEC Board of Directors Meeting
"Sooner Saturday"
EIA Conference
International Energy Conference

Nov. 5, 1999
Nov. 13, 1999
Dec. 2-3, 1999
Dec. 9, 1999

Robert C. Thomas/ Tenneco Energy Scholarship Recipients Announced

The Sarkeys Energy Center is pleased to announce three University of Oklahoma students have been selected to receive the Robert C. Thomas/Tenneco Energy Scholarship. The students, two graduate and one undergraduate, are planning careers in the oil and gas industry.

"These students reflect not only the global nature of the energy industry, but also the prominence and prestige that OU enjoys in this industry worldwide," said Dr. Gus Gertsch, Director of the Sarkeys Energy Center. "It is a fitting testimony to the impact that business leaders such as Bob Thomas and other OU energy alumni have had in this global industry."

Recipients are selected based on their outstanding academic achievements and interest in energy-related studies in the engineering, science or business disciplines.

Huy Le, Phuong Thanh Nguyen, and He Chen, will each receive \$4,000 for the 1999-2000 academic year.

Originally from Ha Noi Vietnam, Le is currently working as a student research assistant in the fields of chemical engineering and natural gas. He is currently working on a group project entitled "Methane Plasma Conversion."

Nguyen, who is also from Ha Noi, came to the U.S. under a program sponsored by PetroVietnam, the state-owned oil and gas corporation in Vietnam. She graduated a year ahead of schedule with a degree in finance and is now pursuing an MBA.

Chen completed a BS degree in Geophysics and MS degree in Geology at the University of Petroleum in China prior to his eight years as a petroleum geologist with the China National Offshore Oil Corporation. He is working under the supervision of Dr. John P. Castagna on a doctorate in Geophysics with an emphasis on seismic reflection.

The scholarships are financed by the Robert C. Thomas Tenneco Energy Scholarship Fund, which was endowed by Tenneco Gas (now part of El Paso Energy Company) in 1995 to honor the company's immediate past chairman and chief executive officer. Thomas is currently Chairman of the Board of Directors of the Sarkeys Energy Center. This is the fourth year that the scholarships have been awarded. ■

Renowned Expert On Asia Energy Issues Scheduled To Speak At OU on Nov 12 & 15

Dr. Hoesung Lee, President of the International Association for Energy Economics, is scheduled to speak at the University of Oklahoma's Norman campus on Nov. 12 and 15. The lecture is sponsored by the Energy Center's Institute for Energy Economics and Policy, the Department of Economics, the College of Geosciences, the College of Engineering, the Michael F. Price College of Business, and the School of Petroleum and Geological Engineering.

"The Economic Crisis in Asia and World Energy Demand" will be Dr. Lee's topic on Nov. 12. He will also speak on "Political and Economic Change in Korea: Domestic Realities and International Perceptions" at the International Programs Center on Nov. 15.

Dr. Lee is renown globally as one of the foremost authorities on Asian energy issues. He is the brother of Hoi-chiang Lee, president of the Grand National Party (GNP) and leader of the opposition in the Korean Parliament. Hoi-chiang Lee ran against President Kim in the Korean presidential election in 1998, and lost. President Kim, who was once imprisoned by the GNP, has waged what some label an "all-out-war" against the opposition Grand National Party in the rough and tumble world of Korean politics.

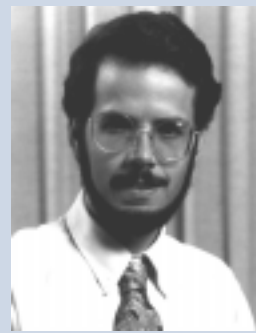
Dr. Hoesung Lee is a major victim of the wrath of President Kim. He was first accused of improper contacts with North Korea in October 1998, resulting in the cancellation of his passport in order to prevent him from speaking at the APEC Energy Ministers Meeting in Okinawa, Japan. In December 1998, he was placed under arrest for campaign finance violations relating to the campaign of his brother for the Presidency of Korea against Kim. Dr. Lee was released and cleared of all charges in May 1999.

A global effort for his release was undertaken by his friends and colleagues, which ultimately resulted in petitions, diplomatic initiatives, public statements critical of the Kim regime, and increased public awareness internationally of the vindictive policies of President Kim.

Dr. Lee is the current President of the International Association for Energy Economics, a global organization with national chapters in fifty-seven countries and over 3,500 members world wide. The United States Association for Energy Economics is a part of the IAEE and has over 800 members. In addition, Dr. Lee is past president of the Korea Energy Economics Institute (1986-96) and a former economist with EXXON Corporation.

Dr. Dennis O'Brien, Director for the Institute for Energy Economics and Policy, will host Dr. Lee during his visit to Norman.

For more information please call or email the Institute for Energy Economics and Policy (IEEP), Sarkeys Energy Center at (405) 325-3821 or email dobrien@ou.edu. ■



Dr. Mark A.
Nanny

SEC Welcomes
Dr. Mark Nanny

The Sarkeys Energy Center is pleased to welcome Dr. Mark Nanny to a joint appointment with the SEC and the College of Engineering. He has been at the University of Oklahoma since 1996, and is an assistant professor of environmental chemistry in the

School of Civil Engineering and Environmental Science, as well as an adjunct assistant professor in the Department of Chemistry and Biochemistry.

Dr. Nanny's research interests focus on elucidating the environmental chemistry of natural organic matter and anthropogenic organic compounds using innovative Nuclear Magnetic Resonance (NMR) techniques and methods. He has been involved with NMR research for nearly 10 years and is co-editor of "Nuclear Magnetic Resonance Spectroscopy in Environmental Chemistry." Dr. Nanny is also a recent recipient of a prestigious NSF Young Investigators Award.

He received his B.S. from Wayne State University in Detroit, Mich. and his M.S. and Ph.D. from the University of Illinois. He is affiliated with the SEC's Institute for Energy and the Environment with Dr. Joseph Suflita. ■

EIA Announces List of Outstanding Panelists For December 1999 Oil & Gas Conference

The Sarkeys Energy Center's Energy Institute of the Americas and the OU College of Continuing Education are now taking registrations for "Success in the Oil and Gas Industry: New Rules, New Roles, New Technologies, and New Opportunities," set for Dec. 2-3 on the Norman campus. The conference is sponsored by OU, the Kerr Foundation, Conoco Inc., and the Charles and Lynn Schusterman Family Foundation.

The focus of the conference will be helping those in the oil and gas industry to make a profit in their current operations. Valuable networking opportunities with EIA officials from Venezuela, Brazil, Canada, Colombia and Mexico for possible business ventures also will be provided. The two-day event will consist of four panels representing views of the government, scientists, businessmen and economists on the oil and gas industry. There will be an additional 15 break-out sessions on technology, business and opportunities for investment in the Western hemisphere.

"The focus of the conference is to provide oil and gas industry professionals and executives in this region with new and provocative ideas in the areas of technology, business operations and business expansion," said EIA director, Ambassador Edwin G. Corr. "Conference participants will also be provided invaluable networking opportunities and possible business contacts in the Western hemisphere."

Speakers who have been confirmed are: U.S. Senator Don Nickles, assistant majority leader; U.S. Congressman J.C.

Watts, chairman, Republican Leadership Conference; John Kemp, president of Conoco's Exploration Production Americas; Mike Smith, Oklahoma secretary of energy; Robert Gee, Department of Energy, assistant secretary for Fossil Energy; Denise Bode, commissioner, Oklahoma Corporation Commission; J. Dewey Bartlett, president, Keener Oil and Gas, and president of the OIPA; Charles Schusterman, Samson Investment Co.; Marlan Downey, president-elect, American Association of Petroleum Geologists (AAPG) and former president of ARCO International; Robert Dauffenbach, director, OU Center for Economic Management and Research; W. Darrell "Gus" Gertsch, director, Sarkeys Energy Center; and Sergio da Fontoura, EIA executive director, Pontifical Catholic University of Rio de Janeiro, Brazil, to name only a few.

"This conference is also a way in which we can give back to those in the energy sector who have so generously supported OU, the Sarkeys Energy Center and EIA," added Corr. "We are offering them a program which will provide value to their businesses and to the energy industry in general."

The two-day conference registration fee is \$295/person with corporate tables/sponsorship still available. To either register or receive more information, please call the EIA Director's Office at (405) 325-4787 or the OU College of Continuing Education at (405) 325-2248. ■

DOE Grant Awarded For Research On "In-Situ Mechanisms For The Survival of Sulfate-Reducing Bacteria in Polluted Sediments"

The United States Department of Energy has announced its approval of Dr. Lee Krumholz's research application entitled, "In-Situ Survival Mechanisms of Sulfate-Reducing Bacteria in Polluted Sediments." The three-year grant is valued at \$709,000.

Other investigators on this project include: Dr. Joseph Suflita, Director of the Institute for Energy and the Environment; Dr. Jimmy Ballard, Department of Botany and Microbiology; and Dr. Judy Wall, University of Missouri.

"The funding of this research project will enable us to understand these organisms and how they function in their natural environment," said Krumholz, who is with the Energy Center's Institute for Energy and the Environment. "The work that has been completed has been conducted in a laboratory setting, which isn't indicative of how sulfate-reducing bacteria operate in the environment."

The grant will fund research to identify genes, and ultimately physiological activi-

ties, that are expressed under in-situ conditions that are critical to the function of anaerobic bacteria. "Our hypothesis is that sediment dwelling micro-organisms have unique functions encoded at the genetic level that are manifest only during exposure to conditions in contaminated environments," explained Krumholz. "Currently these activities are missed using traditional laboratory incubations."

The question to be answered by the findings of the research is, "What genes are needed for survival of these important microorganisms in natural systems contaminated with uranium?" The research will focus on bacteria living in samples retrieved from locations where uranium is present due to environmental pollution from the process of mining uranium for nuclear energy and weapons. The sites have been cleared of all visible pollutants, but the uranium is still present. The rationale explores the fact that sulfate reducers reduce uranium when studied in-vitro in laboratory studies, but it is not clear how or why cells in natural

systems live in the presence of relatively high levels of uranium. It is also not clear if uranium is a positive or a negative factor in the growth of sulfate reducers in natural systems.

"The findings of our research will provide a huge potential in understanding the organisms as they function in their natural systems by conducting our research in sediments," summed Krumholz. "We've predicted that sulfate-reducing bacteria have functions not needed in a lab, but we don't know anything about them in the environment."

This study will also be relevant to the oil and gas industry because the sulfate-reducing bacteria are important microorganisms in natural environments and are critical members of microbial communities involved in bioremediation of petroleum contaminated aquifers, and other environments. Sulfate reducers are also known to be catalysts for the corrosion of steel pipes used for transport of oil and gas. ■