During the BP Deepwater Horizon oil spill, Kinner was sought after for her expertise by hundreds of national media outlets, she testified before federal lawmakers three times, and she convened several high-level meetings among spill responders, scientists, and other stakeholders in the Gulf of Mexico spill region.

Recipients of the University Professorships are expected to have attained international stature in their discipline because of their significant contributions to the advancement of knowledge or aesthetic understandings. They will have received other widely recognized honors such as international prizes, fellowships, or appointments.

University Professorships are the highest form of recognition at the university and are available to no more than four individuals at any one time. The position is held as long as the individual is employed by the university.

Written by Beth Potter, UNH Media Relations

Kinner Named University Professor

Nancy Kinner — professor of civil and environmental engineering, oil spill expert, chief faculty marshal — has another title to add to her list. Kinner has been honored for outstanding contributions to her field and to the university community with a University Professorship, announced provost John Aber, himself a University Professor.

University Professorships are supported through the generosity of the UNH Foundation and awarded to full professors who have demonstrated the highest levels of excellence in teaching, scholarship (including the creative arts), and service during an extended period of tenure at UNH.

“Dr. Kinner embodies so much that is special about UNH,” says Aber. “She is passionate about teaching, sets very high standards, and is always available to her students. Her research is timely and rigorous, and very relevant to national needs, as evidenced by her role in the response to the BP Gulf oil spill. She reaches out to aspiring young engineers in middle schools and high schools, who in turn come out to hear her on-campus presentations. She has touched many and changed many lives. She leads UNH by example and by action in so many ways, not the least of which is her annual role in organizing and leading the platform party at commencement, and, of course, her annual rendition of ‘Happy Trails.’”

On the UNH faculty since 1983, Kinner is a sought-after and respected teacher and mentor. She has been co-director of the Coastal Response Research Center, a partnership between UNH and the National Oceanic and Atmospheric Administration (NOAA), since 2004. The center, part of the Environmental Research Group at UNH, is focused on developing new approaches to oil spill response and restoration in marine and estuarine environments through research and synthesis of information.

Written by Beth Potter, UNH Media Relations

Dr. Nancy Kinner, professor of civil and environmental engineering, accepts the framed letter from CEPS Dean Samuel Mukasa commemorating Dr. Kinner being named University Professor.
“Look at how the Legos that I made with the 3-D prototype machine fit together.” “The animation sequence for that one second took me fifteen minutes to configure.” “So, if I add these hydrogen molecules the ball will bounce higher.”

Current undergraduates in CEPs programs did not make these comments; they were from 12-16 year old campers at UNH Tech Camp in July. UNH offers two camps for middle and high school students.

The newest is called Engineeristas: Girls and Engineering, for girls entering grades 6 and 7. This program is a weeklong introduction to numerous areas of engineering presented by female practicing professionals from UNH and various New Hampshire corporations. Campers spend a half day involved in hands-on problem solving activities such as, materials science, electrical engineering, civil engineering, environmental engineering, animation, and mechanical dissection.

The camps generally have 20 and 50 campers respectively with approximately 50% of the campers residing on campus. Dining in Holloway Commons is a highlight of the camp and the key feature always mentioned to parents in the first texts home.

Many campers have returned for 2-4 summers and three are current undergraduates. The camp is always looking for presenters who can create exciting and engaging projects for the campers. Each summer we also put together a great staff for day and overnight counselors.

Sponsored by UNH College of Engineering and Physical Sciences, the goal has been to keep costs affordable to enable greater accessibility. Additional support for camp scholarships has come from NH EPS GoR, Liberty Mutual, Portsmouth Naval Shipyard, UNH InterOperability Lab, Whelen Engineering, Inc., S.A.M.E., PSNH, BAE, grants from AAW and others. If you are interested in becoming involved with or supporting Engineeristas or UNH Tech Camp please contact Michele Munson, Camp Director at Michele.munson@unh.edu.

UNH Tech Camp is a coed two week camp for campers entering grades 7-10 and has been running for five summers. During the first week, the campers are introduced to numerous programs such as animation, 3-D prototyping, building an underwater ROV, GIS/GPS, Environmental Engineering, Materials Science, solar print making and many more over the past summers. During the second week, campers select an area and work in small groups to create an in-depth project to present to the campers and their families.

MECHANICAL ENGINEER SELECTED AS CEPs 2012 DISTINGUISHED ALUMNUS

John H. “Jack” Smith ’50 of Scarborough, Maine, has an impressive record of commitment to his alma mater. Jack founded the College of Engineering & Physical Sciences (CEPS) Alumni Society and served as its president from 2003 to 2012. On September 20, 2012 Jack received the CEPS Alumni Society Distinguished Alumni Award – the college’s most prestigious award. Along with his dedicated service to the CEPS Alumni Society, Jack has served on the Class of 1950 reunion committee, the UNH Alumni Association’s general awards committee, and the UNH Foundation President’s Council. He is a member of the Milne Society – an esteemed group of donors who have contributed more than $1 million to UNH. The list of his contributions and volunteer efforts are endless—and so is his enthusiasm and support for the University.

Jack began his academic career at Dartmouth College where he played football and lacrosse, and graduated with a BFS degree in Forest Sciences. Jack then went on to serve in the U.S. Navy in the Pacific during WWII as a gunnery officer aboard a destroyer minesweeper. After serving his country in the Navy, Jack came back to New Hampshire to pursue a degree in Mechanical Engineering at UNH. Because Jack already had a degree from another university, he was not eligible to play varsity sports at UNH. Instead, he coached the freshman football and lacrosse teams.

Upon graduation, Jack began his career as a development engineer, experimenting with high end and liquid propellant rocket engines at Curtis-Wright and Thiokol Chemical Corp., developing the powerplants for the Republic XF-103, the Lockheed X-7, and the North American X-15 aircrafts. He later became a chief engineer at a division of Gulf + Western in South Portland. In 1973, Jack founded his own company, Portland Valve Incorporated, a business designing and manufacturing valves for nuclear submarines. After decades of business success, he retired in 1985 to spend time with his family traveling and sailing.

Jack became closer to UNH and the UNH Foundation in 1999 when, in anticipation of his 50th reunion, he established the John H. Smith ’50 Scholarship Fund. This endowed scholarship provides financial support to deserving students in the College of Engineering and Physical Sciences. An avid fan of UNH Athletics, Jack established two endowed scholarship funds supporting student-athletes. Jack has also been an advocate and generous supporter of UNH’s Northeast Passage: a program that empowers individuals with disabilities to pursue therapeutic recreation and adaptive sports.

In 2003, Jack supported the Kingsbury Hall Renovation Project, and the University recognized his support by naming two rooms in his honor: the John H. Smith ’50 Student Project Lab, and the John H. Smith ’50 Computer Room. About the project and UNH he said, “My education at the University of New Hampshire paved the way for a challenging and rewarding career. It is a pleasure and an honor to be able to give something back at this time of my life. The College of Engineering and Physical Sciences has always been known for the quality of its programs, the distinction of its faculty, and the caliber of its research. I’m happy to contribute to the revitalization of Kingsbury Hall and to play a part in providing up-to-date facilities for future generations of engineering students.”
Quoyan Yu, Assistant Professor, has submitted the final version of her book with P. Ampadu entitled, “Transient and Permanent Error Control for Networks-On-Chip” and continues to work with Professor Miller of the Chemistry Department to measure the current-voltage characteristic of flexible transistors produced by Mill-
ner’s research group.

Mathematics and Statistics

The arrival of the Fall 2012 academic term see the Department of Mathematics and Statistics welcoming with pleasure new lectur-
ers Dr. Steven Flores, Dr. Veronica Hupper and Dr. Liang Kong, who will be teaching courses in the department statistics, finite mathematics and calculus sequence offerings. We said goodbye last spring to lecturers Drs. Alexei Davidov, Jeremy Brazas and Avishneel Mallick, who each went on to tenure-track jobs elsewhere. Depart-
ment faculty are returning from a summer period of scholarship and research projects. Most recently in this regard, Professor Mani-
a Shaub has been awarded a three-year NSF grant for the study of “Flutter Analysis and Control for Elastic Structure in Axial Air Flow” and Professor Dmitri Nikyshob has been awarded a grant from the National Security Agency for a research project in the area of categorical algebra and representation theory.

The recent activities of our undergraduate and graduate students have been particularly numerous, prominent and successful. Math-
ematics Education Ph.D. student Hyung Kim was invited to pres-
t a paper (co-authored with two department faculty members) at the International Congress of Mathematics Education in Seoul this past July; to be invited to participate in this quadrennial confer-
ence is quite an honor. In addition, graduate students Gillian Galie, Kyle Gray, Sarah Berube, Vinc Motoesu, Anel Janjaroor and Eyob Demele have, singly and jointly, recently presented in national conferences in the United States. Their work has included a field trip to UNH.

Research Professor Toni Galvin and Professor Lynn Kistler have received a 4.67 M$ award for the continued development of the Heavy Ion Sensor for the Solar Orbiter space mission.

Graduate Brad Cannon worked as a summer intern at JPL, studying plasma waves in the heliosphere. His internship was funded through the NH Space Grant.

Professor (and Chair) Matt McConnell and Research Professor Toni Galvin were lecturers for the Stellar Science Symposium 2012, a week-long workshop for K-12 educators hosted by the McAu-
liffe-Shepard Discovery Center (Concord, NH). The workshop in-
duded a field trip to UNH.

Center for Coastal and Ocean Mapping (CCOM)

In May, Dr. James V. Gardner received the Francis P. Shepard Med-
als for recognition in excellence in marine geology from the Society for Sedimentary Geology.

The NOAA Ship Ferdinand R. Hassler, a federal research vessel that will help update nautical charts on the East Coast, was com-
misioned in June, doubling the size of the Atlantic mapping fleet. The Hassler will be home ported in New Castle, NH, next spring.

The 2012 Hydrographic Field Course has completed a remarkable survey off the coast of Grettis Island in Maine. To see the poster they created with their results visit http://ccom.unh.edu/sites/de-

Associate Professor Per Berglund was on hand at CERN when the discovery of the long-anticipated Higgs boson was announced on July 4.

Professor (and EOS Director) Harlan Spence is one of many UNH researchers preparing for the launch of NASA’s Radiation Belt Storm Probes (RBSP). The two spacecraft were scheduled for launch on August 23rd, carrying instruments from UNH designed to study the Van Allen radiation belts. Others involved with RBSP include Professors Lynn Kistler and Roy Torbert, Research Profes-

sor Chuck Smith, and a large contingent of staff and students.

Related to the gender imbalances described above, the University System of New Hampshire (UNH) and Community College System of New Hampshire (CCSNH) committed in May 2012 to double the number of STEM-educated graduates by 2025 – a mere 13 years from now.

I previously reported to you about the remarkable calibre of fac-
ulty UNH is attracting into our engineering and physical sci-
ences departments. Many are winning national recognition for their work, and a few have received CAREER awards from the National Science Foundation (NSF), which are considered to be the most prestigious accolade NSF can bestow on an early-career faculty member. We also have lost several college-going students to internal awards for mentoring, didactic teaching, and research. The latest exciting news to share in this regard is that Professor Nancy Kinner in the Department of Civil Engineering has been awarded a University Professorship in recognition of her illustri-

ous scholarly contributions. According to the Provost’s website, “University Professorships are … awarded to full professors who have demonstrated the highest levels of excellence in teaching, scholarship, and service over an extended period of tenure at the University of New Hampshire.” Only four faculty members at UNH can hold this title at any one time. This is a much-deserved recognition because besides her gifts as an educator, and calming public face of environmental spills and their mitigation, Professor Kinner has continued to conduct world-class research on a vari-

ety of projects, which I am certain you will keep reading about.

With leadership from several CEPS and WSBE faculty – and par-

icularly Professor Karen Graham in the Department of Math-
ematics and Statistics – UNH was recently awarded a five-year ADVANCE Institutional Transformation (IT) grant of $3.47 million by NSF to address the acute gender imbalances among faculty in STEM (science, technology, engineering and math-
ematics) disciplines. These imbalances are not unique to UNH or only to faculty ranks. Nationwide, the number of women choos-
ing to major in a STEM discipline continues to be small. In the UNH engineering departments, for example, only 14.9 percent of the undergraduate students and only 17 percent of the faculty are women. Yet UNH as whole now has an undergraduate popu-
lation that is 60 percent female. Clearly, there is some urgency to tackling these gender imbalances. NBC News reported last year (and other news outlets have subsequently made the same obser-
vation) that there are approximately 3 million jobs nationwide – many of them in STEM – that continue to go unfilled because employers can’t find qualified candidates to do the work. Accord-
ing to the state’s Business and Industry Association (BIA), the number in the state of New Hampshire is approximately 5,000.

This number is likely to grow considering that a number of compa-
nies that have recently built a strong presence in the state are already projecting need in the hundreds for STEM graduates. One sobering fact is that while the national unemployment rate hovered around 8 percent throughout much of 2012, the rate among engineers was less than 2 percent. This is definitely an opportunity for CEPS graduates today and for the foreseeable future.

Center of Excellence for Partnership Studies (CEPS)

Greetings from our beautiful UNH campus in Durham! As I write this, we are zeroing in on the end of yet another sem-

ester, which often offers a quickened pace in the scholar-

ly activities being pursued by both faculty and students. One fall tradition in CEPS – also repeated in the spring – is for the Dean to give a “State of the College” address. After three consecutive addresses focused on the impact of the econom-
ic downturn and severe cuts in state appropriations on our academic programs, this fall I decided to deliver an address with only good news. It was so exhilarating I ask for your indulgence to repeat it here. I aimed my “State of the College” remarks on faculty recognition for their teaching and research achievements, an award of $3.47 million to UNH by the National Science Foundation for institutional transformation, approval from the Provost to hire new faculty in theme-based clusters, increasing faculty success with grantmanship, and the commitment made by the University System of New Hampshire (USNH) and Community College System of New Hampshire (CCSNH) in May 2012 to double the number of STEM-educat-
ed graduates by 2025 – a mere 13 years from now.

While this is no doubt going to be a monumental challenge, I put it in the good news category because of the tremendous oppor-
tunity it presents for our students. In the coming weeks, many of you will no doubt get involved in discussions about strategies and tactics to help UNH double the size of its STEM-educated class by 2025 without necessarily doubling the amount of teaching and research space or the number of faculty. One helpful and “good news” development in this regard is the recent approval by the Provost to hire new faculty in theme-based clusters in the areas of advanced manufacturing, bioengineering and cybersecurity. I ask that you partner with CEPS to provide experiences that will allow our graduates to compete at the highest levels and serve as pillars for the economy of the state and the nation.

Here is to wishing you all a happy holiday season, and as always we hope to hear from you.

Warmest Regards,

Samuel B. Mukasa

Dean
Chemical Engineering
Dr. P.T. Vasudevan, Professor and Chair of the Department of Chemical Engineering, has been named Associate Dean for Academic Affairs in the College of Engineering and Physical Sciences. In this role, Dr. Vasudevan will oversee academic programs, student learning, student advising, program accreditations, outreach initiatives, and industry collaborations, and international initiatives like the CEPs study-abroad programs. Dr. Russell Cart, Professor of Chemical Engineering, will be the new Department Chair. Both appointments are effective August 20, 2012.

In faculty news, Professors Dale Barkey (PI) and Xiaowei Teng (Co-PI) are the recipients of a NSF GOALI grant titled “Silver Nano-Particle Fabrication for Printable Conductive Media.” The GOALI designation refers to a program under which the university partners with a company, in this case Conductive Compounds LLC in Hudson NH. This is a three-year $450,000 award. A primary application of the technology is in the manufacture of solar panels.

Prof. Xiaowei Teng is the recipient of 2 NSF grants. The first one is titled, “Iridium-Based Alloys as Alternative Catalysts for Ethanol Oxidation (CeJ Reaction).” This is a three-year $572,800 award and will involve collaborators from WPI and Yeshiva University. The second one titled, “Binary Palladium-Based Anode Catalysts for the Ethanol Oxidation Reaction in an Alkaline Medium” is a three-year $379,000 award and will involve collaborators from WPI.

If you would like to contribute to the Chemical Engineering Laboratory Fund, you can download a form at http://www.unh.edu/chemical-engineering/fundraiser.pdf. Also, please join the Chemical Engineering Alumni Group on LinkedIn. If you are interested, please send an email to Jennie Allen (jennie.allen@unh.edu) or Prof. Vasudevan (vasu@unh.edu). Alumni interested in giving a talk in our seminar series should contact Dr. Carr (rtc@unh.edu).

Chemistry
We were pleased to learn that the UNH Graduate School named Professor Ed Wong (now Emeritus) the recipient of the 2012 Grad- uate Faculty Mentor Award. The award is designed to honor a fac- ulty member whose commitment to excellence in graduate student training has contributed significantly to graduate students’ profes- sional development. On the basis of nominations by the Depart- ment of Chemistry and four strong supporting letters from former students of Professor Wong, he was recognized for his outstanding guidance and support of graduate education.

The renovation of Parsons Hall is nearing completion. The north wing of the building was completed in June, and many faculty offices and research laboratories can now be found in the newly renovated space. Completion of the final wing of the building is anticipated for December 2012. The department will be hosting a Parsons Hall Rededication Ceremony on May 31, 2013, and we hope many alumni and friends will be able to join us for the celebra- tion.

Alessi Artwood, Ph.D. 2012 (Advisor, Professor Meg Greenland) received the Outstanding Student Paper Award for her presenta- tion at the 2011 American Geophysical Union Fall Meeting for her presentation, “The Effects of Mineral Dust on the Hygroscopic and Optical Properties of Inorganic Salt Aerosols.”

Civil Engineering
CE faculty members have been awarded significant grants over the summer. A NSF grant of roughly $749,416 entitled “ICN-SEES: Engineering Research Collaboratory for Sustainable Infrastructure in a Changing Climate,” was awarded to Drs. Jennifer Jacobs, Jo Daniel, Jack Karter, Paul Kirshen, and Kathryn Hayhoe. They will create a multi-institution collaboratory to support the integra- tion of climate science and engineering research for sustainable transportation infrastructure (Infrastructure and Climate Network – ICNet). Dr. Paul Kirshen of CE, ERG and also EOS will start this fall on a new $684k grant from the NOAA National Estuarine Research Reserve (NERR) System Science Collaborative program. The grant is to use and test a collaborative planning process to de- velop a climate change adaptation plan for Exeter NH to not only benefit Exeter and the Great Bay NERR but also serve as model for the nation. Besides local partners, researchers and faculty from the UNH Stormwater Center, EOS, COLSA, CHHS, and the Casey Institute will also participate. A $175,000 NSF grant was awarded to Dr. Tat Fu that will enable him to investigate an integrative building technology that will improve building safety and energy efficiency simultaneously.

Numerous CE graduate students were active over the summer conducting research and presenting their results at national and international conferences. Jeff Senders, Ph.D. advisor of Dr. Robin Collins, presented his research at a RILEM (International Union of Laboratories & Experts in Construction Materials, Systems and Structures) con- ference in Europe.

Some changes in personnel in the department have taken place over the summer and fall. Michelle Mancini, the new administrative assistant, replaces Megan Meagher who left to work on special events and special projects. Congratulations and best wishes to you, Megan! Dr. Robert Henry has moved back into the department after serving 11 years as the Associate CEPS Dean. Cheryl Coviello, Veronica Thibodeau Carter and Justin Lowe have assisted the department with course coverages as former lecturers, Becky Gaudreau, transitioned back into private consult- ing. Dr. Rob Roseen will fall back to a part-time (20%) Affiliate Research Assistant Professor status as he transitions into private practice. Dr. Erin Bell is on sabbatical leave for the fall semester.

Lastly, the department graciously acknowledges a $25k gift from J. Edward Hamel for the establishment of the Hamel Group Scholarship Fund.

Computer Science
Congratulations to Dr. Wheeler Ruml who received the presti- gious Faculty Early Career Award from the NSF. Additionally, Dr. Ruml is the 2012 recipient of the university-wide Outstanding Assistant Professor award. Dr. Ruml has recently pro- moted to the rank of Associate Professor.

Dr. Bob Russell, in collaboration with the University of Virginia and the National Center for Atmospheric Research, received a $470,000 grant from the National Science Foundation Office of Cyber Infrastructure.

The department is pleased to announce the addition of Dr. Karen Jin as a new lecturer. Karen received her PhD from the Universi- ty of Windsor in 2010 and taught at Dalhousie University.

Two long-time members of the department, Dr. Brian Johnson and Dr. Ted Sparre have retired. Congratulations and special thanks to both for their dedicated service. We wish them the best during their retirement.

The Information Technology program graduated its first class of fifteen students this May.

The CS department proudly announces that three of our students received highly competitive Summer Undergraduate Research Fellowships: Chris Hebert, advisor Dr. Ruml; Scott Cyphers, advisor Dr. Hatcher; and Daniel Bolan, advisor Dr. Bergeron.

Congratulations to the Cyber Security Club for placing second in the Northeast Collegiate Cyber Defense Competition!

Many of our students from our new CS and IT senior project classes presented their projects at the Undergraduate Research Conference in April. Industry partners of many of the projects included our alumni. If you have an idea for a project that you would like to collaborate with our seniors in the next academic year, please contact Radim Bartos at rbaros@cs.unh.edu.

As a result of participation in the World IPv6 Launch Day, the department is pleased to announce that the IPv6 Center of Excellence in Electrical and Computer Engineering has been awarded a $750,000 grant from the National Science Foundation to establish the IPv6 Center of Excellence at the University of New Hampshire. The center will promote research and education in the field of IPv6, which is the next generation of the Internet protocol. UNH will be one of the first universities in the world to offer a full range of courses in IPv6, including a graduate-level course.

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Electrical and Computer Engineering
Through the team effort of Professor Michael Carter and Dr. Richard Messner, Kingsbury Hall has sprouted a new 70 foot antenna tower this summer, which will expand the capabilities of our Communication Systems Laboratory. In addition to making off-air digital communication signals, which are affect- ed by real-world propagation impairments and noise, available for integration and testing on the UNH campus, the new tower will host an experimental MIMO cellular base station to support Professor Nicholas Kirsh’s research efforts in femto-cell and MIMO communication systems. Professor Mes- sner will attach several internet-accessible cameras to the tower to support his research and instructional efforts in image processing. We anticipate that many senior design and graduate student re- search projects involving antenna design, software-defined radio, and remote operation of the radio equipment in the penthouse Antenna Room, will be enabled by this new facility.

Nicholas Kirsh, Assistant Professor, was awarded a STTR Phase I grant from NSF to investigate the feasibility of using a small controlled environment for over-the-air (OTA) testing and vali- dation of multiple antenna radio systems for next generation wireless networks. With the President of octoScope, he will investigate methods of reducing the physical dimensions of an anechoic chamber used for MIMO/OTA testing while still accu- rately emulating statistical properties of the radio channel.