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800-Year-Old Mummies Aid Current Cold Cases:

Research for Smithsonian Helps UNH Forensic Scientists Uncover Ground-Breaking DNA Extraction Method

WEST HAVEN, Conn., Oct. 19 /PRNewswire/ -- Dr. Heather Coyle and three forensic science graduate students at the University of New Haven have developed a new method for preparing certain skeletal remains for DNA extraction thanks to some 800-year-old mummies from Mongolia and the research the group is doing for the Smithsonian Institution. Obtaining DNA is often a crucial step in the identification of human remains. An assistant professor of forensic science at UNH, Coyle says that while DNA extraction is never an easy process it is sometimes impossible with bones and tissue that have been long buried. Coyle and her students have discovered that, in some cases, baking bones can aid in the extraction of DNA.

This summer Coyle's team was asked by the Smithsonian Institution to identify the gender of mummified remains-thought to possibly be members of a murdered native family-gathered from a cave in the Gobi Desert in Mongolia. In a separate case, while the Gobi research continued, the team tried unsuccessfully to extract DNA from skeletal remains that had been buried in the U.S. Then, Coyle remembered how readily the DNA was extracted from the remains dried for hundreds of years in the Gobi Desert. Theorizing that moisture and embalming preservatives in the U.S. bones might be an impediment to DNA extraction, she baked a bone sample at 70 degrees Celsius (158 degrees Fahrenheit) for 72 hours and again tried extracting a DNA sample. It worked.

Coyle and her students, Amanda Gare is, from San Francisco, California, Rachel Lang, from Dallas, Texas, and Richard Auclair, from Woonsocket, Rhode Island will present their findings at the annual meeting of the Northeastern Association of Forensic Scientists in Bolton Landing, New York in late October, and at the American Academy of Forensic Science in Washington, D.C. in February, 2008. Coyle notes that the results may have implications for forensic scientists around the globe. "In the U.S. alone, the remains of 40,000 missing persons are stored in various medical examiners' offices," she says. "If we can extract DNA through a new process, the possibilities could be tremendous and it raises the question of how far back in time we can stretch technology."

A leader in experiential education, the University of New Haven provides its students with a unique combination of solid liberal arts and real-world, hands-on professional training. A private University founded in 1920, UNH has a full-time undergraduate enrollment of more than 2,400 students-with 70 percent residing on its 80-acre main campus-and a graduate school enrollment that exceeds 1,700. The University offers more than 80 undergraduate degrees and more than 25 graduate degrees through its four colleges, in fields such as sports management, nutrition, forensic science, music and sound recording, engineering, computer science and criminal justice. University of New Haven students study abroad through a variety of distinctive programs.

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