DMS microbiologist Deborah Hogan, Ph.D., was one of only 15 researchers nationwide selected as a 2005 Pew Biomedical Scholar. She studies model systems for host-pathogen interactions.

Study explores Native surgical outcomes

American Indian and Alaska Native military veterans are more likely to die within 30 days of surgery than their Caucasian counterparts. That was the finding of a study by DMS surgeon Lori Alvord, M.D. The results—some of which are conflicting—contribute to a growing list of health disparities between Native peoples and the general U.S. population.

The study, which was published in the *Journal of the American College of Surgeons*, included 2,155 American Indian (AI) and Alaska Native (AN) male veterans and 2,264 Caucasian male veterans. Those are small numbers compared to many surgical studies, which often include hundreds of thousands of patients. Nevertheless, it "is the largest study of Native outcomes in surgery ever," says Alvord, who is herself a Navajo and DMS's associate dean for student and multicultural affairs.

Surprise: To compare postoperative mortality (deaths) and morbidity (complications) in the two groups, Alvord's team used data from the Veteran Affairs National Surgical Quality Improvement Program (NSQIP). They found that AI/ANs had a 50% greater risk of dying within 30 days of selected surgeries than the Caucasians. However, to their surprise, they saw no difference in morbidity between the two groups—a perplexing finding, given the difference in mortality.

"We may have a problem in the way that the study measures morbidity," explains Alvord. "The study measures morbidity basically by assigning a morbidity score if you have any one of 21 complications. It's a binomial distribution. There's 'no complications' and then the other category is 'one or more complications.'" Alvord and her colleagues chose this classification system because they modeled their study on a larger NSQIP study in which the binomial system had been validated. "It worked for a huge number of patients, like over 500,000," says Alvord, "but if you're working with only a couple thousand in each group, maybe some other things become more important."

Samples: For example, it's possible that the AI/AN patients had more severe complications. Or that their complications were not accurately assessed. Or, as with any study based on population samples, that the mortality disparity was due to chance. Or some combination of those factors. Alvord aims to find out the reasons for the inconsistency in her next study, by developing a more precise morbidity classification system and by adjusting for socioeconomic factors.

Alvord, who is relatively new to research, just completed a two-year fellowship through the National Institutes of Health and the University of Colorado that trains minorities to conduct research about minorities. The program seems to have launched Alvord as a researcher. She's begun a third study, too, on Native perceptions of surgery and their effect on outcomes. Alvord picked her topics because of DMS's strength in outcomes. "And because I am Native," she adds, "surgical outcomes in American Indians really made sense." Jennifer Durgin

JON GILBERT FOX

Alvord is studying comparative surgical outcomes.

Devilish mechanism

Two DMS researchers have revealed the insidious process by which a molecule called Smad7 helps pancreatic cancers grow out of control. Smad7—which is present in half of human pancreatic cancers— thwarts the usual checks and balances of cell growth and allows the proliferation of cells and blood vessels that feed tumors. "It's a devilish mechanism," says Murray Korc, M.D., chair of medicine at DMS and coauthor of the Smad7 paper for the *Journal of Biological Chemistry*. "Smad7 not only prevents TGF-beta molecules from slowing the cancer down, but enables them to multiply at a high rate, and thus gives the cancer another growth benefit."

Platelet parameters

The FDA currently allows platelets—blood cells that aid in clotting—to be stored no more than five days before being given to patients. But new research by DMS pathologist James AuBuchon, M.D., suggests that platelets could be stored for seven days with no significant effect on outcomes, thanks to new bacterial detection methods. "Extension of platelet storage and concomitant use of a bacterial detection system would provide logistical advantages by reducing outdating and improving patient care," wrote Aubuchon in the journal *Transfusion*.