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Research idea 'leaked,' UA prof complains

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Citizen Staff Writer

A University of Arizona engineering professor believes that the California Department of Transportation leaked information about earthquake-proofing bridges to his competitors for a research contract.

Mohammad R. Ehsani, an UA associate civil engineering professor, said that he and assistant professor Hamid Saadatmanesh

submitted a proposal to reinforce the remaining concrete pillars that support California's bridges by wrapping them with Kevlar, the material used in bulletproof vests.

Caltrans rejected their bid but accepted a similar proposal by a California-based firm with a subcontract to the University of California-San Diego.

"We think that they didn't want any part of this money to go out of state," Ehsani said.

Caltrans' call for help in strengthening

concrete pillars holding up bridges came shortly after the Loma Prieta earthquake that jolted San Francisco a year ago. Forty-two people died when the concrete pillars holding the upper level of the Nimitz Freeway collapsed, trapping those on the lower level in a concrete sandwich.

Caltrans called a number of universities requesting plans and ideas. Ehsani and Saadatmanesh responded by sending a short summary of their plan to strengthen the

pillars with strips of Kevlar.

"They solicited our ideas," Saadatmanesh said.

Caltrans informed the two that their idea was a finalist and they should present a detailed proposal and a bid for the research contract by Jan. 18.

Eshani and Saadatmanesh sent a 60-page proposal and a bid to do the research for

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\$270,000.

"We really poured our hearts out and told them everything about this method," Ehsani said. "We convinced them that this was a much better way to go."

Caltrans initially seemed enthusiastic about the project, but around January the tone changed, Ehsani said.

He received a call from the department saying that officials were very interested in the idea, but the University of California-San Diego had submitted a similar proposal, Ehsani said.

"We knew that this couldn't have been," Ehsani said. "We knew we were the only ones focusing on this method."

He said that he knew of fewer than five universities doing research on composite materials like Kevlar, and none of them was in the University of California system.

Worked on idea 3 years

The two civil engineers have been working with composite fiber materials for more than three years, Ehsani said.

Ehsani said that UCSD had submitted its proposal after the Jan. 18 deadline, and after the UA proposal was in. He said he believes that Caltrans wanted to keep the research money in the UC system.

The University of California-San Diego leads the state of California in Caltrans-funded research on column retrofitting.

Worried that Caltrans had leaked his idea to UCSD in an attempt to award it the contract, Ehsani faxed a letter to the department on April 10 requesting that his ideas be kept confidential.



Ehsani



Saadatmanesh

tioning both the UA and UCSD proposals. The letter went on to say: "Attached are portions of the universities' proposals and contact persons."

'Cat out of the bag'

Ehsani and Saadatmanesh were upset by this.

"We said, 'Oh my God, the cat is out of the bag,'" Ehsani said.

The information that was given to Fiber-Trench was nothing that had not already been in the public domain, Tinsling said.

He cited a Japanese study, done in 1987, on the use of carbon fibers to reinforce concrete columns.

Ehsani and Saadatmanesh say that their proposal is substantially different from the Japanese plan, which even the Japanese admit does not work well because the carbon filaments are brittle.

Kevlar is stronger and more ductile, Ehsani said. Also, the Japanese study loosely wrapped the carbon fibers around the column and used epoxy to glue them down, while the Kevlar is under tension and does not require adhesive.

Team up to make bid

In an effort to minimize their

losses and gain a California connection, Ehsani and Saadatmanesh teamed with Fiber-Trench to bid for the contract. They also joined forces with DuPont, the manufacturer of Kevlar.

Then, in May, Caltrans asked for new bids — this time, specifically related to using fiber composite materials for the retrofitting. They requested one- or two-page proposals.

"This was at a time when they already had a 60-page proposal sitting on their desk," Ehsani said.

A proposal was not submitted by UCSD, Ehsani said.

"This was strange," he said, noting that San Diego had the testing facilities and would have gotten a substantial amount of money for doing the research.

Californian gets pact

The contract was awarded to Fyfe Associates, a one-man operation in Del Mar, Calif., for \$42,000. Fyfe then subcontracted the research out to UCSD for an undisclosed sum.

Ehsani and Saadatmanesh are not just upset because they lost a \$270,000 contract. They are worried about their standing in the research community because they feel that now UCSD can lay claim to their idea.

"Now these guys can take credit for this, for something they really don't deserve at all," Ehsani said.

"It's that original thinking ... That's what really counts."

Caltrans denies all allegations of a leak.

"We don't operate that way," said public relations officer Jim Drago.

Drago said that once a proposal has been submitted to Caltrans it is government property and therefore public information.

Policy contrary to norm

Saadatmanesh said that no one told them of this policy and it runs contrary to the way the scientific community works when projects are up for bid. He said that usually it is understood that information about ideas will not be shared until after the contract has been awarded.

"Otherwise, it would be chaos," he said.

Drago said that the UA proposal was nothing new and that most of the points were covered in the 1987 Japanese study.

"We don't believe that we did anything at all improper," Drago said.

UA attorneys have filed a bid protest with Caltrans, Ehsani said. If the allegations are true, the contract will be canceled and rebid.

In September, UA attorneys also sent a letter to Caltrans requesting all proposals and correspondence from UCSD and Fyfe Associates since the Loma Prieta earthquake, and a copy of the Caltrans contract with Fyfe Associates and any subcontracts, figuring if the UA proposal is public domain, so is everything else, Ehsani said.

So far they have not received a reply.

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Their letter noted that they had originally planned to do some tests before sharing their idea and that "it was only due to the urgency of Caltrans' needs following the Loma Prieta earthquake that we decided to submit a proposal on this subject at this time."

UCSD proposal withdrawn

Shortly afterward, UCSD withdrew its proposal, Eshani said.

In the scientific community, an action like this is suspicious, Ehsani said. Many hours of research and preparation go into these proposals, and hundreds of thousands of dollars go to the proposal that is accepted.

Nicholas Tinling, a Caltrans attorney, said that Caltrans did not know why UCSD withdrew its proposal.

A representative from the UCSD engineering department could not be reached for comment.

In addition to this, the two UA researchers received a call from Fiber-Trench Inc., a Fremont, Calif.-based company that also had given Caltrans a bid to do the retrofitting research.

Fiber-Trench had gotten a letter from Caltrans dated April 13 men-