





## Tech professor studies art of falling down

By FRANCISCO RODRIGUEZ  
The University Daily

Tom Leamon, professor of industrial engineering, studies what makes people fall through funding provided by a \$300,000 grant from the U.S. Department of Health and Human Services' Injury in America Program.

Leamon, in his third year of researching the phenomenon, said he became interested in studying slips and falls when he found that thousands of lives are lost each year because of falls.

"Slipping and falling is an unbelievably large problem," he said. "Approximately 4,000 people a year will slip and die in public places in the United States. The way I look at that is that's one jumbo jet a month crashing and killing everyone on board. A total of 12,000 people will die a year from slips and falls, most of those at home. This is a major problem."

Leamon said research in the past has only focused on shoes and surfaces, but not on the actual slipping and falling or what materials are best suited for shoes.

"When we started to work on this research, we found there was almost no literature on the subject," he said. "That's probably because it's kind of hard to do experiments where you want people to fall."

Leamon said the experimenting was aided by a harness that suspends subjects and prevents them from hitting the ground.

"It's hard to get subjects to fall and hit the ground for you," he said. "So what we did is we build a laboratory where subjects are held by overhead suspensions. They walk around and around until they get used to the rig, and that's important. There has been some research done in Sweden and Australia where they have a very short overhead suspension, maybe 15 feet long. So the subject knows 'between here and there, I'm supposed to slip.' I think we should allow people to respond as natural as they can. We have a set-up where somebody walks for two hours until he or she is completely bored, just as if they had been out walking for that amount of time."

Leamon said the subjects' movements are constantly monitored

by high-speed cameras and computers recording their every move.

"While a subject walks around, we are monitoring his or her moves with the aid of small spheres covered with retroreflective tape placed in strategic part of his or her body — feet, ankles, knees, hips, etc. — and the special television cameras we have spot these and transmit them to a computer," he said. "What the computer does is work out where that sphere is in three-dimensional space. It does that at the rate of 200-cycles per second, throughout 32 points in the body. It takes about half a second for a subject to fall, so we have about 100 measures of three-dimensional coordinates."

Leamon said his research is aimed at prevention. He said although people cannot be trained to walk a certain way, something might be done to make them behave differently in certain situations.

"We pretty much are at the beginning of research," Leamon said. "One of the difficulties when there is very little research done already is that anything goes. It's interesting and difficult, trying to conceptualize what's going to happen. One of the things we thought might happen is that when people walk on a slippery surface they might do certain things to prevent slipping. When they are walking on a slippery surface, people are real keen to let their foot down as quick as they can after their heel touches the ground. The truth is people slip before their foot touches the ground. If you wear non-slip shoes, they are going to do nothing for you unless you have non-slip heels. They might help if a person is pushing an object, when the traction is needed on the sole. But by the time he or she realizes he or she is slipping, the sole has never touched the ground."

Leamon said that small slips — microslips — are common in everyone's walking habits. He said studying these is easier than waiting for the bigger slips to happen.

"What we have found is that people are almost always slipping," he said.

"If the slip is under two centimeters, they won't feel it. Between two and eight centimeters they feel it, but they do something about it, throwing their arms about or leaning forward. If the slip is more than eight centimeters,



Photo courtesy of University News and Publications

### OOPPS

Dal Ho Son, a graduate student, is caught by a fall prevention device as he loses his balance while walking on a slippery metal surface. Tech industrial engineering researchers use the rig to study slipping and falling behavior.

then they're on their way down. They can't recuperate. So what we're trying to do through research is figure how long you slip not how long you fall. A person older than 60 has about a one in three chance of falling every year of their life. That's enormous. Many elderly people die that way. On the other hand, it makes it hard for us to experiment if they only fall once a year. So what we're trying to do is measure changes in slips shorter than eight centimeters."

Leamon said hundreds of lives can be saved if people are made to react to surfaces differently.

"My personal interest in this research is looking for interventions," he said.

## Recycling drive to help fund for Masked Rider

By CHRIS BOBBITT  
The University Daily

A campus-wide recycling project began today to make students aware of the community need for recycling.

"Recycling, throughout the country, is a normal and everyday function. A lot of students, when they move off, are going to have to recycle," said Liz Toombs, graduate assistant in the Dean of Students office. "It is required by their state or their community. One of the reasons for the recycling project is that it can begin to get students aware of the need to recycle."

"What we want to do is educate people," Toombs said. "What surprises me is that we throw tons and tons of trash on this campus a day and that costs us money. Then we go and dump it in our community's landfills. By the year 2002, at the latest, that landfill in Lubbock will be completely full."

Recycling Awareness Day is sponsored by the Dean of Students office and the University Center programs for students to collect money for the Masked Rider Endowment Fund.

"People say that Tech brings a lot of things to the community, and that is true," Toombs said. "But Tech should also be an asset and not just rely upon the community by helping recycle aluminum cans."

Boxes for cans have been placed in many buildings around campus including all the residence halls. Most of the boxes are located near trash cans and in the hallways.

"I noticed the other day in the education building there is a box

down one of the halls and not just two feet from it there is a trash can full of cans that people threw in the trash can instead of the recycling box," she said. "If you have to walk two extra feet to deposit the cans, then do it."

The money that is collected from recycling goes toward student projects, including the Masked Rider Endowment Fund.

"Each can for an individual is not going to be much. But if each individual deposits the one can that they, on an average, probably drink a day, that is a heck of a lot of cans that this campus can make money on," Toombs said.

A committee called Tech Recycles Committee determines the methods that students or groups can apply for the money collected. The money can be used for special projects, endowment funds for existing program and other student projects.

The first goal of the committee is to pay for the endowment fund for the Masked Rider. The money that goes to the Masked Rider through student service fees will go back into the funds and be redispersed to other programs.

An international recycling corporation, ALCOA will have a display in the UC to help students understand the importance of recycling.

Organizations wanting to help out in recycling awareness or wanting to make their members more aware of the importance of recycling can call Liz Toombs at 742-2192. She can talk to students or organizations as well as arrange for speakers.

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## Tech, Aggies battle to break free of SWC logjam

By JEFF PARKER  
The University Daily

The Texas Tech women's basketball team will try and continue its upward surge through the tough Southwest Conference Tuesday night when the Red Raiders play host to the Texas A&M Lady Aggies at 7 p.m. in Lubbock Municipal Coliseum.

Marsha Sharp's Red Raider squad has won three straight SWC games after starting the season 1-3, while the Lady Aggies are coming off their biggest win of the year, upsetting Houston on their own court.

"A&M is playing good basketball right now," Sharp said at her weekly press conference Monday. "I really expect them to come in play-

ing well and it should be a good challenge for us."


Both squads enter the contest at 4-3 in conference play and are part of the third place logjam in the SWC standings. Besides Tech and Texas A&M, Houston and TCU own the same conference records.

"We needed to get on the winning side of the conference race and give ourselves a chance to finish in the top half and even as high as third," Sharp said Monday.

"I think we have put ourselves in a position to do that. We could stay in fifth if we lose it or go as high as third with a win. That's what kind of a race it is."

Historically, Tech is 10-1 against Texas A&M at home.

Tech is currently riding a three-game winning streak which equals



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(12-6, 4-3)

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**Texas Tech**  
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<p>↑ Hermer scored career-high 28 pts. in 86-67 upset of Houston Saturday.</p> <table border="1"> <tr><td>F-#31</td><td>Diane DeCree</td><td>6-0 Jr.</td><td>Avg. 6.1</td></tr> <tr><td>C-#30</td><td>Louise Madison</td><td>6-1 Jr.</td><td>Avg. 7.9</td></tr> <tr><td>G-#41</td><td>LaTonya Irving</td><td>5-9 So.</td><td>Avg. 4.4</td></tr> <tr><td>G-#24</td><td>Yvonne Hill</td><td>5-10 Jr.</td><td>Avg. 3.4</td></tr> <tr><td>G-#13</td><td>Lisa Hermer</td><td>5-6 Sr.</td><td>Avg. 2.5</td></tr> </table>	F-#31	Diane DeCree	6-0 Jr.	Avg. 6.1	C-#30	Louise Madison	6-1 Jr.	Avg. 7.9	G-#41	LaTonya Irving	5-9 So.	Avg. 4.4	G-#24	Yvonne Hill	5-10 Jr.	Avg. 3.4	G-#13	Lisa Hermer	5-6 Sr.	Avg. 2.5	<p>↑ Have won 3 straight SWC contests. Guard Karen Farst returns after two-game absence.</p> <table border="1"> <tr><td>F-#52</td><td>Reena Lynch</td><td>5-11 Sr.</td><td>Avg. 4.4</td></tr> <tr><td>F-#40</td><td>Tiffany Hobbs</td><td>6-0 So.</td><td>Avg. 11.2</td></tr> <tr><td>C-#54</td><td>Jennifer Buck</td><td>6-3 So.</td><td>Avg. 11.1</td></tr> <tr><td>G-#14</td><td>Tammy Walker</td><td>5-7 Jr.</td><td>Avg. 8.1</td></tr> <tr><td>G-#33</td><td>Kelly Schilling</td><td>5-10 Sr.</td><td>Avg. 4.4</td></tr> </table>	F-#52	Reena Lynch	5-11 Sr.	Avg. 4.4	F-#40	Tiffany Hobbs	6-0 So.	Avg. 11.2	C-#54	Jennifer Buck	6-3 So.	Avg. 11.1	G-#14	Tammy Walker	5-7 Jr.	Avg. 8.1	G-#33	Kelly Schilling	5-10 Sr.	Avg. 4.4
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its longest string of the season. Senior guard Karen Farst is expected to make her return to the

Raider lineup after missing the last two games because of deaths in her family.

## Raider netters face busy week for opening of dual-match play

By CAMERON MAUN AND WAYNE BARRINGER  
The University Daily

Dual match play begins Tuesday for the Texas Tech men's tennis team when the Red Raiders play host to Abilene Christian at 1:30 p.m. in the Athletic Training Center.

The Raiders have only competed in flighted tournaments in the fall and early spring, most recently in the Milwaukee Classic, Jan. 3-7.

Tech begins a tough stretch that will have the team play five matches in six days. Coach Ron Damron said that the schedule will be tough, but he thinks his team is ready.

"We're really playing a lot of matches the first week out," Damron said. "We've never done this at the beginning of the season before, so we're going to play nine players as much as we can."

Matt Jackson heads into the season as the No. 1 seed for Tech. Last year Jackson compiled a 17-9 mark for the Raiders.

Sophomore Fabio Walker is seeded No. 2 and returns with the best mark of any player coming back for Tech, (20-5).

Another sophomore, Michael



**Jackson Walker**

Slauson, will man the No. 3 position, while two transfer students and lone senior William Dopson Sr., are the fourth through sixth seeds.

"We're playing a real strong team in Abilene Christian for our first big match," Damron said. "We're starting the season in strong fashion because ACU is always tough."

In doubles play, Jackson and Walker are the No. 1 team. The Dopson twins (William and transfer brother Michael) will take over the second-team duties while redshirt Rick Baird and freshman Thomas Cook will fill in as the No. 3 seed.

"We are ready to play someone else for a change," Damron said. "Our confidence level is pretty good and we're in good health."

The remainder of the week will pit Tech against North Texas on Thursday.

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