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HEADLINE: Physics lecture on extra dimensions to be held at UC-Davis

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BODY:

Professor Lisa Randall of Harvard University will hold a lecture in the ARC Ballroom at UC Davis at 7:30 p.m. Tuesday Admission is free for UC-Davis students and \$7 for the general public.

She will primarily speak of her recently published book, *Warped Passages* and discuss the "extra dimensions of space and how they can exist and not see them, and what connections they can have to different properties of our universe and how they can be infinite in size."

Audience members shouldn't be intimidated by the scientific terms, however, as she said her book and lecture will appeal to "people interested and curious about the subject, but don't know much about physics."

Local professors are also eager to hear about what she has to say.

"This paper she wrote on warped extra dimensions was a fundamental paper with over 1,000 citations," said John Terning, associate professor of physics at UC Davis. "It has opened up a whole new area of research and we're actively working on it."

Usually lectures with guest speakers such as Lisa Randall are only open to graduate students and faculty, but this is a rare case in which the public is offered an extraordinary opportunity, Terning noted.

The warped extra dimensions Randall writes of can be explained in part by the analogy professor Terning provided in an interview.

"You have to imagine that there's a flat land and its creatures can only live on a flat surface and cannot imagine a third dimension in their perspective," Terning said. "A 3-dimensional object could form in their 2-dimensional world, but they wouldn't be able to recognize it. You have to imagine there's an extra spatial dimension, but we can't move in it. There are different possibilities for the existence of this extra dimension."

One extra dimension theorized by Randall is "possibly the weakness of gravity relative to other forces." In one of her publications, she questions how a paper clip can be attracted to a magnet with such a great force when the force of the gravitational pull should override the magnet. This is possibly an example of a warped extra dimension beyond our spatial capability.

Many people may think this kind of research is not relevant to their lives, but as Terning explains, it applies to everyone.

"It is relevant in the sense if you want to understand how the universe works," he said. "Over 100 years ago, researchers were experimenting with electrons in atoms. At the time, they thought it wouldn't be relevant in everyday life. The research led to electricity, circuits and eventually computer chips; it revolutionized society. The research physicists are doing now might possibly change everything. Today we have no idea what they would be."

Randall feels this experimentation is important because it will "radically change the way we view the world."

"It's really conceptually a different way to look at things. We'll know with [further research] if we're on the right track. We're trying to understand the world and if the extra dimensions exist, [it] will be an important component to research in the future. Who knows where we can go?"

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