

Visiting physicist speaks on Einstein's legacy

Even on the 100th anniversary of Albert Einstein's "miracle year," scientists still feel his theories' effects

BY EVA SYLWESTER
NEWS REPORTER

Spring break was no deterrent to the crowd of people who came to hear physicist Kip Thorne speak at the University on March 24. Thorne, the Feynman Professor of Theoretical Physics at the California Institute of Technology, gave a lecture titled "Einstein's Legacy in the Modern World: From Black Holes to Quantum Cryptography."

The United Nations declared 2005 the World Year of Physics, honoring

the 100th anniversary of Albert Einstein's "miracle year" in which he published five papers including one that introduced the theory of relativity.

"We are still exploring Einstein's legacy and will continue to do so for at least another century," Thorne said.

Thorne described two main revolutions in physics to which Einstein contributed: relativity and quantum mechanics. Scientific developments are still being made in both areas.

"Einstein was ahead of his time by amounts of time ranging from a few

years to more commonly 50 years to sometimes 150 years," Thorne said.

In the 200 years prior to Einstein publishing his paper on relativity, Isaac Newton's theories of space, time, forces and accelerations derived from everyday experience provided the framework for understanding the laws of nature.

"Einstein's framework has a much wider range of validity," Thorne said, explaining that in Einstein's framework, the laws of nature are the same in all frames of reference including situations in which time and space are warped.

Later scientists used Einstein's theory of relativity to predict the existence of black holes, which are made from the warping of space and time. In coming decades, Thorne said scientists plan to probe black holes by using a form of radiation made from the same material as black holes — gravitational waves, which Einstein predicted in 1916.

Thorne also explained the role of quantum mechanics, which describes intrinsic uncertainties in the physical qualities of particles such as position, speed and energy.

Thorne said quantum mechanics is a framework for the laws of nature just like relativity, although it is not yet understood how quantum mechanics and relativity fit together.

Thorne said future developments may include quantum computing, quantum cryptography and quantum communication.

"All of this great power arises because of the weirdness of quantum logic," Thorne said.

"We are still exploring Einstein's legacy and will continue to do so for at least another century."

KIP THORNE | Visiting professor

The lecture, originally scheduled to take place in 100 Willamette, had to be relocated to 150 Columbia at the last minute to accommodate a large crowd.

University math professor Jim Isenberg, who organized the event, said he was surprised by the turnout.

"I thought we'd be lucky to get around 200," he said. "We got around 500 ... It was very, very pleasing."

Junior physics major Anders

Hansen said attending the event was a "no-brainer" for him because of his interest in physics.

"I thought it was very interesting," he said. "I enjoyed it much."

Anita Gimre of Forest Grove attended the event with her two children Karsten and Karensa. She said Thorne is distantly related to her children.

"We've never met him," she said. "I thought we should meet him."

"I thought it was very interesting," Karensa Gimre said.

The University's celebration of the World Year of Physics will continue with two more events spring term. On April 30 at 3 p.m., University physics instructor Stan Micklavzina will present a science circus at the South Eugene High School auditorium, 400 E. 19th Ave., as "Dr. Stan the Science Man." A \$5 donation for event sponsor Ridgeline Montessori School is suggested. On May 19 at 7 p.m., University physicist Jim Brau will speak in 100 Willamette about recent developments in cosmology and particle physics.

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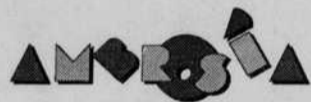
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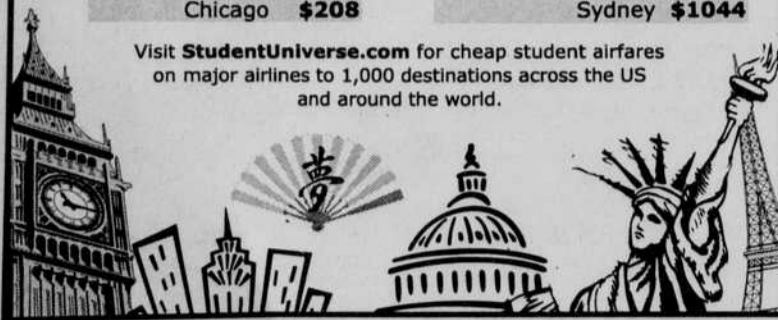
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Legislature agrees schools are priority, disagrees on funding

THE ASSOCIATED PRESS

SALEM — Several months into the legislative session, the public schools' budget is starting to take shape.

But lawmakers still have significant differences on what the priorities are within the education budget.

Spending on public schools is the largest piece of the state's budget pie. This year, schools are expected to receive somewhere between \$5 billion and \$5.4 billion in funding for the next two school years, depending on upcoming revenue forecasts.

Money is allocated to the state's 199 school districts based on student enrollment levels, and the special needs of certain students, like those in special education.

Most legislators working on the schools budget subcommittee agree that classroom instruction from pre-kindergarten to high school should

top the list of school spending.

But after that, things get murky.

Some lawmakers think student transportation is a clear priority, while others advocate for school nutrition programs, or programs for gifted and talented students.

Subcommittee chairman Richard Devlin, D-Tualatin, said a list of all the priorities will be forwarded to the Legislature's chief budget writers.

"All of the items have some degree of importance," he said. "The question is what degree of importance."

The co-chairmen of the Joint Ways and Means Committee will release their proposed \$12.4 billion spending blueprint April 4.

Rep. Gene Whisnant, R-Sunriver, who sits on the subcommittee, said lawmakers are taking the right approach by examining how well programs are working before dividing up money.

He said all existing education functions will get funded to some capacity. That includes computers and administration, which figure to rank lower on the list.

Ultimately, though, once the money goes to school districts, it's up to school board members to divvy it up.

Sen. David Nelson, R-Pendleton, said there's little interest in stepping on the toes of individual school districts, and there are few strings attached to the money even though lawmakers may want more accountability.

A separate bill introduced this year would let the Secretary of State's Office audit individual school districts.

Committee chairman Devlin said the results won't be an edict to individual schools, but will reinforce to school districts how lawmakers want them to spend the money.

PFC: Budget process received limited input

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groups' demands at the March 17 meeting, including a demand that the PFC put together an amended budget to be submitted during an emergency Senate meeting tonight. The demands also included setting up a "slush fund" that would allow an interim committee to disperse stipends to student groups and increasing communication between the PFC and the groups.

Hwang said PFC members agreed to create an amendment.

"It was our understanding that it would be ready on Monday," she said.

But PFC member Jael Anker-Lagos said the PFC agreed only to work on an amendment. She said the committee decided not to form an amendment after crunching numbers during the break.

The Senate is scheduled to hold an emergency meeting tonight to discuss a potential amendment. Hwang added that she and other student leaders didn't have adequate input in the PFC process.

"I feel it wasn't really done out in public," she said. "There was not

dialogue and no input from student leaders."

But PFC Chairwoman Persis Pohowalla said she hoped groups were informed about all of the PFC's earlier meetings at which stipends were discussed. She said group representatives only came to one meeting, adding that she sent an e-mail to student groups about the changes.

"Clearly not enough people were able to express their opinions about it," she said. "This input would have been so valuable at the time we were doing this."

She added that the PFC was "under a huge time crunch," prohibiting further work on the budget.

"It just feasibly can't happen," she said.

African Student Association member Haben Woldu said programming is important, but groups can't function without adequate leadership. She also said it isn't guaranteed that next year's Senate will address the stipends, so the current PFC should make changes now.

Pohowalla said that stipends have

been "really inconsistent for the past three to four years" and implementing the new stipend model creates a consistent budget.

According to an e-mail from ASUO Administrative Assistant Molly Bowling, a meeting will be held at 4 p.m. today in the EMU Walnut Room for students to learn about the stipend changes.

Hwang said she expected to learn about an amendment then, but Pohowalla said no amendment will be presented.

Some students previously expressed concerns that switching the stipends from payroll to scholarships would affect financial aid or be off-limits for international students. Anker-Lagos said the new stipends, in the form of resource aid from the Business Affairs Office, will not adversely affect international students. She said the new payment requires a Social Security number, but she will inquire today about the eligibility of international students.

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