

Daily Nebraskan

Wednesday

WEATHER:

Wednesday, partly cloudy and very warm with a 20 percent chance of thundershowers, high 85-90 with SE winds at 10-20 mph. Wednesday night, chance of thundershowers, low around 50. Thursday, partly sunny and not as warm with a 20 percent chance of thundershowers, high in the low to mid 70s.

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University of Nebraska-Lincoln

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Senators debate public, private priorities

By Chris Carroll
Senior Editor

State senators Tuesday debated whether private or public institutions should receive a higher percentage of State Student Incentive Grants.

Debate started in the Nebraska Legislature when Sen. Ron Withem of Papillion tried to amend LB812, which allocates funds for general state operations, postsecondary education and state aid.

Withem wanted to strike the bill's section 11, which would redistribute funds allocated to the state's SSIG program for the 1988-89 school year. The amendment was narrowly defeated 20-22 on a roll-call vote and

the bill advanced to final reading.

SSIGs are awarded to students displaying financial need. The federal government matches the state's contribution to this program. Nebraska institutions received \$1.3 million in SSIG grants in 1988-89.

Of the \$1.3 million, \$750,000 was contributed by the state. Section 11 would attempt to put this \$750,000 in a separate account in anticipation of changing the distribution formula.

Larry Scherer, legal counsel to the Education Committee, said some senators want to change the formula to favor public schools by not taking tuition into account as much. They cannot do so under the federal SSIG guidelines, however, so they want to set up the separate account.

Withem said that by attempting to reclassify funds already distributed under the SSIG program, "We're going back in an attempt to fool the federal government."

Scherer said Withem has asked Nebraska Attorney General Robert Spire to determine if section 11 is constitutional. Withem said it is ridiculous to reallocate funds that already have been spent.

Sen. Jerome Warner of Waverly said section 11 is a simple accounting maneuver intended to give the state leeway when distributing scholarship assistance.

Many of the senators opposing Withem's amendment support an SSIG distribution formula that would

give a higher percentage of financial aid to students at public institutions.

Withem said Nebraska's distribution formula for SSIGs currently discriminates against private colleges, as tuition costs are not considered.

He said guidelines that favor public institutions when distributing scholarship aid are outdated. Distribution formulas in almost every other state weigh tuition costs more heavily, Withem said.

Warner said South Dakota, New Hampshire and Tennessee use formulas similar to Nebraska's.

Sen. Gary Hannibal of Omaha said he favors a formula that primarily supports students at public institutions.

Sen. Sandra Scofield of Chadron

said the need for aid is high among students at public institutions.

Seventy-six percent of students attending public institutions come from families with incomes under \$20,000, compared to 54 percent of those enrolled in private institutions, she said.

"Our first obligation is to the poor students in the state," Scofield said.

Withem said students at public institutions already receive nearly all the money allocated by the Legislature to postsecondary schools.

"We spend a quarter of a billion dollars of tax money (each year) to support public institutions," he said.

Private institutions, he said, annually receive less than a quarter of a million dollars.

Measles update

No new cases diagnosed

By Brandon Loomis
Senior Reporter

Six days after university health officials diagnosed a male undergraduate as having the highly contagious rubeola measles, the health center has confirmed no further cases, the center's medical director said.

Dr. Gerald Fleischli said four students have reported symptoms after hearing of the case, but no more cases have been diagnosed. The students had rashes from other causes, he said, including hives and chigger bites.

He said it is not surprising that no additional students have come down with the disease yet, because the incubation period is 10 to 14 days.

"It's just at the beginning of where we expect to see more cases," Fleischli said.

Health center officials sent a blood sample from the original victim to the Mayo Clinic in Rochester, Minn., for confirmation, but Fleischli said the confirmation is only for technical purposes. He said there is no doubt the student has measles.

"It's the classic case," he said. Health officials will give free immunization shots in the Nebraska Union Centennial Ballroom and Cook Pavilion from 7 a.m. to 7 p.m. today. Thursday, they will give the shots at the same times at the Cook Pavilion and the Nebraska Union lobby.

Lists of 13,282 students who are not known to be adequately immunized are posted in the Nebraska unions, Love Library, the health center, the Reunion and residence hall cafeterias.

Students with last names starting with A-M should come for immunization today, Fleischli said, and N-Z students will be immunized Thursday.

Fleischli said the health center has enough doses to immunize 10,000 students, and that he expects to use much of it.

"I'm expecting to have good compliance," he said. "The students seem to be taking this responsibly."

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Peace institute studies U.S. goals

By Eric Pfanner
Staff Reporter

As a counterpart to military institutions that teach the strategies of war, the United States government has had a peace institute since 1984 dedicated to creating an "intellectual map of peacemaking."

Rev. Sidney Lovett, a member of the U.S. Peace Institute's board of directors, talked about the origins, role and long-range goals of the institute to political science faculty and students Tuesday in Oldfather Hall.

The institute is not a "swat team to bring peace to conflicted areas," he said, but rather a

group to study "long-range goals for a peaceful world."

To study these goals, the institute has a grant program. Of the institute's \$7 million budget, 25 percent goes for grants to scholars worldwide, Lovett said.

These scholars use the money, he said, to study the means by which peaceful solutions can be arrived at for specific crisis areas.

During the the 1960s and '70s, several peace groups supported the idea of a peace institute, he said. When support for such a group "sputtered," he said, the U.S. Congress took up the issue.

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Shaun Sartin/Daily Nebraskan

Pole position

Joni Johnson, a junior broadcasting major, and R.G. Burford, a junior accounting major, sit on the pole located in front of the Phi Gamma Delta fraternity house. Money raised from the philanthropy will benefit the Madonna Rehabilitation Center.

Engine invented in 1700s may help today

By Matt Everton
Staff Reporter

Two University of Nebraska-Lincoln engineering professors are among those hoping Congress will grant their request for \$7.5 million to create a consortium to perfect an 18th century engine with 20th century technology.

Peter Jenkins, chairman of mechanical engineering at UNL and director of the Center for Engine Technology, and William Splinter, UNL associate vice chancellor for research, recently appeared before the U.S. House of Representatives and Senate subcommittees to request funds for research of a Stirling engine.

Researchers from Mississippi State University and North Dakota State University, along with representatives from a Nebraska interest, Valmont Industries, also joined the group.

They are requesting the money to

research and eventually produce a working Stirling engine. The Stirling engine was invented by Robert Stirling in 1816, and uses a process called external combustion which allows the device to operate on a diverse range of fuels.

Experts believe a Stirling engine would allow farmers and other industries to substitute alternative fuels in their operations, thereby increasing their own savings and lessening U.S. dependency on foreign oils.

Jenkins said that if approved, the consortium would create a partnership between the University of Nebraska-Lincoln and the two other state universities to do research and develop a working Stirling engine.

Each school would receive an equal distribution of money to conduct their own independent research and produce their own designs and improvements. Eventually, the best aspects of each school's designs would be incorporated into a prototype to be manufactured by Valmont

Industries, he said.

Valmont, one of the two Fortune 500 companies in Nebraska, already has conducted \$9 million worth of research on the Stirling engine, Jenkins said. As the largest manufacturer of center-pivot irrigation systems in the U.S., Valmont hopes to incorporate the engine into their systems, but has not been able to come up with a completely workable design, he said.

Jenkins said each university would have designated problem areas of the engine to work on. Twelve faculty members from UNL would be involved in such research and 30 researchers from the three universities would be involved overall. UNL would be the principal investigator, Jenkins said, through the Center for Engine Technology, which he directs.

The Stirling engine uses a concept called external combustion to produce its power. Unlike a typical internal combustion engine that burns fuel inside the engine to power a piston,

the Stirling engine relies on an external fuel source.

A heat pipe inserted into an external combustion chamber is heated by the burning fuel and transfers thermal radiation to the internal working components of the engine. The gas produced from the heat pushes the piston back and forth which in turn moves a crankshaft that can be connected to whatever application is desired.

Jenkins said that since the heat necessary to power the engine is generated in a separate combustion chamber, any combustible fuel can be used. The only restriction, he said, is that the fuels are non-corrosive to the materials of the engine and compatible with the environment. Alternative fuels could include coal, corn stalks and stubble, wood waste, rice hulls and others.

"What makes this so good is that the Stirling cycle is theoretically one of the most efficient cycles attainable," Jenkins said.

Throughout this century, several companies have attempted to produce working models of the Stirling engine, including General Motors in 1958 and Ford in 1971, Jenkins said.

Although researchers through the years have not changed the basic concept behind the engine, technology has been unable to produce materials that would work in the engine. With the advent of better materials, such as those used in the space program, some of the engine's persistent problems now can be attacked, he said.

Jenkins said these problems include seal and ring life, problems with controlling the hot gasses and durability of the engine components.

A report prepared for Congress by the researchers outlines the benefits of the Stirling engine.

The consortium would plan to develop an engine with 100 net horsepower and 23-35 percent system efficiency.

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