



THE US AND CHINESE OLYMPIAD teams pose with their medals.

piad. Daniyar Nurgaliev of Russia beat out 305 other students to earn the highest score in this year's competition.

For the second year running, the Chinese team had the top total overall, winning four gold medals and one silver medal. The Russian, US, and Indian teams came in next—each won three gold and two silver medals.

The US golds were garnered by Andrew Lutomirski of Los Angeles; Willie Wong of Short Hills, New Jersey; and Brian Beck of Beachwood, Ohio. Daniel Peng of Colts Neck, New Jersey, and Vladimir Novakovski of Springfield, Virginia, won silver medals. The American Institute of Physics and the American Association of Physics Teachers were the primary sponsors of the US team.

Students competed in two five-hour exams during which, for example, they determined the gravitational constant with a rotating container of glycerin and a laser. This experimental task proved so popular, says organizer Sinan Bilikmen, that 30 countries' representatives bought the equipment for \$100 a set.

But that extra cash didn't do much to offset the cost of the ever-growing Olympiad. Thanks to an ailing Turkish economy, the voluntary contributions from participating countries stretched to cover almost half of the low \$450 000 tab for the competition. The Turkish government and a smattering of private sponsors paid for the rest.

Students took time out together to visit, among other things, an archaeological site, an old Roman theater, and Turkish bazaars. As Waldemar Gorzkowski, president of the International Physics Olympiads organization, said at this year's opening ceremony, "Those who make friends for life are the winners."

The 2002 Physics Olympiad will be held in Jakarta, Indonesia, in July.

LYNLEY HARGREAVES

Physicists' Pay Is Up

Salary increases for US physicists are well above inflation rates, according to the latest salary survey by the American Institute of Physics. The study, which looked at the incomes of physicists who belong to any of AIP's 10 member societies, found salaries had increased about 11% since 1998. PhD physicists earned a median salary of \$78 000 last year, and those with master's and bachelor's degrees received median salaries of \$63 800 and \$60 000, respectively.

Not all PhD physicists got pay boosts, however. The median salary of those at four-year colleges, who mostly work on 9- or 10-month contracts, was \$50 000 (see graph), essentially unchanged since 1998. Physicists working for federally funded R&D centers netted a \$12 800, or 15%, increase over 1998.

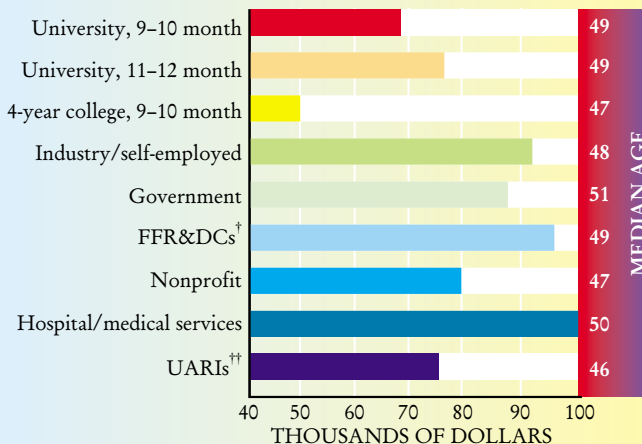
The graph doesn't show total income, however, because more than a third of the

PhD members who work full-time earn extra wages. Supplemental sources—usually consulting, summer research, or summer teaching—add, on average, \$11 000. Those on 9- or 10-month contracts at universities are most likely to do supplemental work, those in government, the least.

Unemployment remained under 1% for PhDs, although it's slightly higher for women, who make up 14% of employed member society membership. The salaries of men and women are comparable for full-time work, except for mid-career professors on 9- or 10-month contracts. There, surprisingly, women earn 10% more than men.

For additional salary and employment information, see *2000 Salaries: Society Membership Survey*. Single copies are \$15 and can be ordered on the Web at <https://webster.aip.org/forms.statorder.htm> or from the AIP Statistical Research Center, One Physics Ellipse, College Park, MD 20740-3842; e-mail: stats@aip.org.

Median PhD salaries by major employment sector, 2000.



† Federally funded research and development centers.

†† University-affiliated research institutes.

NEWS NOTES

Energy research report. The National Research Council, in a study released in mid-July, looked at \$22.3 billion spent by the US Department of Energy between 1978 and 2000 on energy efficiency and fossil energy research programs and asked, Was it worth it? The answer, according to the NRC, is yes, especially if more than direct economic benefits are counted.

The report, *Energy Research at DOE: Was It Worth It?*, said it is important to include "options for the future" and "knowledge benefits" when assessing the return on investment for DOE research programs. For example, the report said the feasibility of future energy technologies is better understood because of DOE research, although such research has

brought no monetary return.

In looking at "net realized economic benefits associated with the energy efficiency programs," the study said that about \$7 billion (1999 dollars) was spent over 22 years, resulting in about \$30 billion in savings. Fossil energy programs didn't fare as well, generating \$3.4 billion in return on \$6 billion spent between 1978 and 1986, and \$7.4 billion in benefits for \$4.5 billion in costs from 1986 to 2000.

Herschel telescope on view in US.

The 20-foot reflector telescope built by William Herschel in the 18th century to catalogue nebulae and star clusters is on loan to the Smithsonian Air and Space Museum in Washington, DC. The telescope, which usually resides at London's National Maritime Museum, is the centerpiece of *Explore the Universe*, a new exhibition on how our understanding of the skies has

evolved through the ages.

In addition to modern-day astronomical instruments, the displays include 900-year-old astrolabes, devices used to describe the night sky at a given time, a full-scale replica of Tycho Brahe's equatorial armillary, and a replica of Edwin Hubble's 1920s



equipment from the Mount Wilson 100-inch observing chamber. As they leave the exhibition, visitors can explore a typical astronomer's office with near-real-time access to the activities

of national observatories. The new permanent exhibition opens this month. More information is available on the Web at <http://www.nasm.edu/galleries/gal111/univ.htm>.

DIAMOND ring leader. Gerhard Materlik has been tapped as the first head of DIAMOND, a third-generation synchrotron light source near Oxford, England, and the largest scientific facility to be built in the UK in more than three decades (see PHYSICS TODAY, January 2000, page 50). "It's a really exciting opportunity to do

something new," says Materlik, who will take up the post on 15 October, moving from the German Electron Synchrotron facility (DESY) in Hamburg, where he has been the associate director of HASYLAB and coordinator of the

lab's x-ray free-electron laser project.

A joint project of the UK and French governments and the Wellcome Trust, the world's richest biomedical foundation, DIAMOND will come with a price tag of £195 million (\$278 million) and a 3-GeV electron storage ring, providing soft and hard x rays from 5 eV to 200 keV. The synchrotron is scheduled to come on line in 2006.

NSF education post. On 1 August, Judith Ramaley became NSF's assistant director for education and human resources. The job comes with an annual budget of more than \$800 million, or about a fifth of NSF's total funding. It covers all NSF programs in math and science education, from

Michigan Students Win Solar Road Race

Students from the University of Michigan are the surprise winners of this year's American Solar Challenge, a biannual motor race in which groups build and race cars that rely solely on sunlight for fuel.

The cross-country race runs along old Route 66 from Chicago, Illinois, to Claremont, California. M-Pulse, the Michigan team's solar car, was nearly wrecked in a pre-race crash. But it crossed the finish line a full hour and 20 minutes ahead of the

previous champions, the University of Missouri-Rolla, and set a new record time and speed for the event. M-Pulse averaged 40 miles per hour over the 2247-mile course.

"It's hard to believe this fantastic finish, considering the position we were in just four weeks ago," says Nader Shwayhat, an engineering student who helped lead the team that built M-Pulse.

The team plans to take on international competitors at the World Solar Challenge in Australia this November.

PAUL GUINNESSY



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kindergarten through the graduate level. Efforts range from system-wide school improvement programs and mentoring and education programs for underserved female and minority students to undergraduate research stipends and graduate fellowships.

A biologist who has been on the faculties of five universities and served as the president of two, Ramaley has an impressive track record on education issues. Most recently, as

president of the University of Vermont, she spearheaded an alliance with state colleges and education officials aimed at improving education from early childhood through advanced degrees, with a focus on distance learning and an eye to the state's workforce needs.

Ramaley succeeds Judith Sunley, who served in an interim capacity for two years and is now a senior adviser to NSF director Rita Colwell. ■

DESY



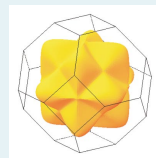
MATERLIK



Web Watch

<http://www.phy.tu-dresden.de/~fermisur/>

Using a method called linear combination of atomic orbitals, the University of Dresden's Claudia Lehmann has calculated the **Fermi Surfaces** of the metallic elements and collected them on a Web site. Thanks to a Java applet, the site lets you view the individual Fermi sheets of each element, as well as the Fermi velocity and orbital character of the electronic states.

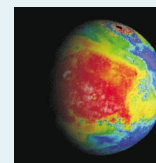


<http://www.engineergirl.org>

To encourage more girls to become engineers, the National Academy of Engineering has put together the **Engineer Girl!** Web site. Among the site's offerings are descriptions of notable engineering achievements and an online form that can be used to submit questions to professional engineers.

<http://tes.la.asu.edu>

In June, a giant dust storm began blowing over the surface of Mars. Within two weeks, the storm had blanketed the entire planet, raising the temperature of the Martian atmosphere by 30 K. You can see a movie of this event on the Web site of the **Thermal Emission Spectrometer (TES)**, one of the instruments on NASA's Mars Global Surveyor.



To suggest topics or sites for Web Watch, please e-mail us at ptwww@aip.org.

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