RANDOM SAMPLES

edited by CONSTANCE HOLDEN

NSF Official Pays Penalty

Luther Williams, the top education official at the National Science Foundation (NSF), has agreed to pay $24,900 for violating rules against accepting payment for outside activities connected to his job. The money is part of a settlement of a civil case brought by the Justice Department, which requires Williams to pay a $20,000 penalty to the government and repay $4900 in honoraria for four speeches dating back to 1993.

Williams keeps his job as head of NSF's Education and Human Resources directorate. But a letter of reprimand stipulates that for a year Williams must get advance written approval for all travel and for non–job-related income-generating activities. At the same time, the letter praises his "extraordinary skill and energy" and previously "impeccable" record.

"We accept the government's decision and NSF's reaction," says Williams's lawyer, Guy Petrillo, of the New York firm of Shereff, Friedman, Hoffman & Goodman. "There's no dispute that he accepted the honoraria" contrary to regulations, he says.

Among the honoraria pocketed by Williams was $2000 from Sigma Xi, the national scientific honor society. Deputy Director Evan Ferguson recalls his "surprise" when Williams assured the society that he could accept payment for a 1994 speech. "We thought we couldn't pay government officials," Ferguson says.

Williams declined to comment on the case, although sources say he might have pled extenuating circumstances had it gone to trial.

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Something in the air? Tagged bear with cubs and Derocher on the Barents Sea.

Polar Bears and PCBs

Scientists in Norway have discovered seven female polar bears bearing both female and male genitals near the island of Svalbard (Spitsbergen) in the Barents Sea. The researchers say their prime suspect is polychlorinated biphenyls (PCBs) that concentrate in the bears' fat.

Over the last 3 years, zoologists Andrew Derocher of the Norwegian Polar Institute in Tromsø and Oystein Wiig of the University of Oslo have captured some 450 polar bears and tagged them to study population dynamics and monitor toxicants in their bodies. The pseudohermaphrodites, they found, are genetic females—some have had cubs—but they also have small penises in front of their vaginas.

There may be "a perfectly natural explanation" for this, says Derocher, whose paper will appear in the *Journal of Wildlife Diseases*. In many species, for example, adrenal or ovarian tumors in females can trigger the formation of anomalous sex organs in fetuses. But such cases are rare. And PCBs are known to end up in the bears' fishy diet after traveling long distances and condensing in the cold air.

This is the latest in a string of reports implicating pollutants that mimic sex hormones in gender-bending effects on wildlife. Most of these reports have sparked considerable controversy. Although lab studies have shown that PCBs can interfere with sexual development in rats, they haven't led to the formation of coexisting male and female sex organs, says toxicologist Bram Brouwer of the Agricultural University in Wageningen, the Netherlands. Yet, he says, "it's not unreasonable to suppose something like that could happen" in other species, including bears. Brouwer adds that he wouldn't rule out some other member of the family of so-called persistent organic pollutants as the culprit.

Derocher has called in an endocrinologist for further investigations. One theory is that PCBs interfere with hormone-regulating enzymes called P450 cytochromes. Says Derocher: "We're hoping other researchers around the Arctic will start to examine their females as well."

Kyoto Prizes

Figuring out the shapes of proteins has long been a $64,000 question, but with the awarding of a prestigious Japanese prize to a Swiss structural biologist, it turns out there's a 50-million-yen ($350,000) answer. Kurt Wüthrich, at the Swiss Federal Institute of Technology in Zürich, has won this year's Kyoto Prize in Advanced Technology for his work using nuclear magnetic resonance to infer the three-dimensional structures of proteins and other macromolecules.

Another prize, for Basic Sciences, goes to mathematician Kiyosi Itô of Kyoto University. Itô is best known for inventing differential equations that can describe random motions of atoms or fluctuations in the stock market. Although Itô first outlined his theory in 1942 simply as a mathematical exercise, the "Itô calculus" is now widely used by engineers, financiers, and others to model complex systems.

The prizes, sponsored by Japan's Inamori Foundation, will be awarded at a ceremony in Kyoto in November.

Endocrine Disrupter Fever in Japan

After a series of alarming reports over the past year publicizing potential health threats from hormone-mimicking environmental chemicals, scientists in Japan are springing to action. Last week a group of researchers held the opening meeting of what they claim is the world's first scientific society dedicated to so-called endocrine disrupters.

Endocrine disrupters have become suspects in a variety of reproductive anomalies (such as hermaphroditic polar bears—see story at left) in recent years. The issue took to the front pages in Japan last year after an Environment Agency study identified 67 chemicals commonly found in the environment as possible endocrine disrupters. A recent study also found that in Japan, as elsewhere, men's sperm counts may be on the decline.

But scientists still have little data to link endocrine disrupters with observed health effects. "It is more of a social phenomenon than a scientific one" at this point, says Hideyuki Kobayashi of the Environment Agency. The agency plans this year to spend 4 billion yen ($28 million) to set up a center at the National Institute for Environmental Studies in Tsukuba to study, among other things, whether there is a correlation between the concentration of suspected endocrine disrupters in a man's body and the size of his testes. Other government organs are rushing to fund everything from wildlife surveys to basic molecular studies.

The new Japan Endocrine Disrupters Society wants to provide a forum for interested parties and set the agenda for this emerging research field. The society and the Environment Agency are planning an international conference on endocrine disrupters to be held in Kyoto in December (details to be posted next month at mx.eic.or.jp/eanet/index-e.html).