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Semiconductor solution
Most semiconductors are highly covalent, nonmolecular solids, and crystals of these materials are usually grown under high-temperature conditions, either from the melt or the vapor phase. Trentler et al. (p. 1791) report a lower temperature route (at or below about 200°C) for growing crystals of III-V materials, such as gallium arsenide, from reagents in organic solvents. These crystals form as thin whiskers up to several micrometers in length.

Aldolase antibody
The aldol condensation couples a ketone to an aldehyde and is one of the most basic carbon-carbon bond-forming reactions in organic chemistry. Many methods exist to facilitate this reaction, but they often require stoichiometric reagents and the use of protective groups. Wagner et al. (p. 1797) have generated catalytic antibodies based on class I aldolases that can couple a wide variety of aldehydes and ketones through this reaction. These antibodies were generated by immunization with a reactive compound, a method detailed in a Research Article by Wirsching et al. (p. 1775).

Supernova shock
The OH maser line emission is thought to trace shock activity associated with supernovas. Yusef-Zadeh et al. (p. 1801; see the Perspective by Fukui, p. 1771) report the detection of this emission along the interface between the remnant of a supernova in the Milky Way (G359.1-0.5) and the surrounding ring of molecular gas. Comparison of the velocities of the molecular gas and the OH maser lines implies that the shock emissions are associated with CO material at the limb of the supernova remnant.

Photorefractive liquid crystals
The index of refraction of photorefractive materials can be changed by irradiating them with laser beams in an appropriate geometry; this effect is useful in holography and optical signal processing. Twin laser beams generate electrical charges that are usually moved with an applied electric field. The charges form a refractive index grating pattern that can transfer light intensity between the beams. Weiderrecht et al. (p. 1794) doped a nematic liquid crystal mixture with both an electron acceptor and an electron donor to create a strongly photorefractive material that can operate at low applied fields and low light intensities.

Disease resistance in rice
Cultivation of rice may be made easier as our understanding of the molecular basis of disease in rice improves. Song et al. (p. 1804; see the Perspective by Shimamoto, p. 1772) cloned a gene from rice, a monocot, that is responsible for resistance to a subtype of Xanthomonas oryzae. Virtually all food crop species are infected by some member of this genus of bacterial pathogens. The predicted protein product sequence is suggestive of a receptor kinase. The gene is one in a family of genes and bears a certain resemblance to the disease resistance genes recently identified in dicots.

Cell fate in the eye
In the developing compound eye of Drosophila, the protein encoded by the fat facets gene plays a role in preventing the formation of more than the required eight photoreceptor cells per eye part—mutants contain extra, ectopic photoreceptor cells. Huang et al. (p. 1842) show that the Fat facets protein is a ubiquitin-dependent protease. The protease may control the levels of a specific regulator of cell number in the eye cells during development. This result shows that a deubiquitinating enzyme can control the levels of a specific protein and that protein stability as defined by its ubiquitination state has implications in development.

HIV suppressors
Activated CD8+ lymphocytes from individuals infected with the human immunodeficiency virus secrete soluble factors that can suppress HIV infection. Cocchi et al. (p. 1811) developed a cellular assay system and have identified three chemokines, RANTES, MIP-1α, and MIP-1β, as the major components of the suppressive factor. Replication of HIV in infected cells could be suppressed with recombinant forms of these chemokines.

Variable structure
Antigens are recognized by T cells as peptide fragments that are bound to the T cell receptor (TCR). Fields et al. (p. 1821) have determined the structure of the variable (V) region of the TCR α chain, which shows an unusual connectivity of the β sheets. They used this result and the previously determined structure of the variable β domain to construct a model for VαVβ association.

Chromosome order
During prometaphase, chromosomes are briefly found in a wheel-shaped ring or rosette. Nagele et al. (p. 1831) investigated the order of the chromosomes during prometaphase and found that homologs are located across the rosette from each other. Their data also suggest that the chromosomes are grouped in two haploid sets in an antiparallel arrangement.

A biased response
The nature of an immune response is governed by T helper (Th) cells. If Th1 cells dominate, cell-mediated immunity results, whereas a Th2 response can cause immunoglobulin E production, as occurs in allergic diseases. Much effort is currently focused on early events that can bias the response toward either the Th1 or Th2 type. Yoshimoto et al. (p. 1845) identified one such event. A small population of T cells, discriminated by the expression of the NK1.1 marker, produces interleukin-4 soon after antigen challenge. This cytokine helps establish conditions that favor development of a Th2 response.
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Collaboration and Data Sharing

I applaud Barbara Mishkin for her timely Policy Forum “Urgently needed: Policies on access to data by erstwhile collaborators” (10 Nov., p. 927). The topic of ownership and retention of data has been of great interest and concern to me since I became involved in a controversy between two investigators on a federal grant. One of the investigators was leaving the university and wanted to remove all of the primary data, while the other scientist needed to have many of the original results to carry out the research project at the home institution. After this highly debated occurrence, I became an advocate of institutions establishing explicit policies for data management, not only as a means to avoid many of the problems to which Mishkin alludes, but also as a deterrent to scientific misconduct. As mentioned by Mishkin, some universities have developed and implemented policies; however, many of these policies do not clearly define under what circumstances and by what means data that are not easily or accurately reproduced may be “transferred” with the scientist who is relocating. Also, such policies frequently are silent on the issue of data sharing, including access to unique research resources. Mishkin concludes by urging “the [U.S.] Public Health Service to develop regulations as soon as possible.” I would like to also encourage scientific journals and professional societies to establish guidelines for universities and academic scientists to consider in developing and implementing policies on management of scientific data.

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On-Line Instruction

In his Policy Forum “Electronics and the dim future of the university” (13 Oct., p. 247), Eli M. Noam predicts that commercial vendors of on-line instruction will outcompete the universities, driving the latter out of business. This argument does not account for the role that universities play in certifying their students. Universities are uniquely suited to perform this task, although their nonprofit status does not eliminate the conflict between raising revenues from students and providing critical evaluation of the same. The massive amount of tangible capital that universities have acquired, largely as a consequence of fulfilling their research mission, makes credible the universities’ long-term commitment as honest educators. In contrast, commercial vendors of on-line instruction would have a strong motive to peddle certification when student performance does not warrant it.

Because universities and on-line vendors will recognize this credibility problem, a more likely scenario is that some type of partnership will form between the commercial vendors and the universities—the universities will supply honest evaluation and certification, and the on-line vendors will supply low-cost, high-quality instruction. However, such partnerships would create tension within universities between those who want to preserve the integrity of the institution at all cost and those who, as agents of the commercial vendors, want to “cash in” on the reputation of their institution.

The threat to academia posed by on-line instruction is more likely to come from within the university than from without.

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Burning matters

This week’s letters cover a variety of topics, including data ownership policies, ranking of journal articles, biomass burning in Brazil (left), an alleged threat to universities from on-line instruction (“more likely to come from within the university,” says the letter writer), the Chinook salmon catch in Alaska, environmental epidemiology, postdoc job security in Spain, and a traditional Japanese custom of saving umbilical cords that may help provide some needed genetic information.
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that a more balanced approach would be to publish an article which presents the strengths and achievements of environmental epidemiology.

Allan H. Smith
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Science Professionals in Spain

In 1992, a large number of young Spanish scientists in postdoctoral training abroad were attracted back to Spain by a national program that offered 3-year contracts associated with awarded research projects. However, the Spanish government has decided not to extend those contracts, apparently forgetting the reason why those people were attracted back. Permanent or nonpermanent positions offered by the universities or the Council for Scientific Research (CSIC) are scarce and mostly determined by friendship rather than by scientific criteria.

Spain cannot afford to waste time and money invested in our training, but this may happen because most of us are considering going abroad.

In view of this situation, we call for a dignified, professional career, adequately paid, that would secure continuity of employment after regular assessments. We propose:

1) The removal of the 3-year limit on hiring contracts, as well as the reinstatement of those researchers already unemployed due to the termination of their contracts.

2) The creation of a position of researcher, not civil servant, with a 5-year contract that could be extended on the basis of professional performance. Researchers would have total independence in setting their research priorities, should be able to participate in more than one research project—even as main researcher, and be allowed to supervise the training of pre- and postdoctoral personnel. This figure is similar to that of other countries. It has been considered by some members of CSIC and has also been contemplated in the first draft of the bill for updating the University Reform Law (LRU).

3) The creation of enough long-term positions, in a sustained manner in accordance with training initiatives, to secure the incorporation of this group of researchers into the scientific system in Spain.

Cecilia Gotor*
Department Bioquímica Vegetal y Biología Molecular,
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*Representing 252 other signatories.

Heso-no-O: A Gift

We read with great interest “Umbilical cords: Turning garbage into clinical gold” by Clare Thompson (Research News, 12 May, p. 803), which indicated that umbilical cord blood is a valuable source for blood transplantation because it contains many stem cells and can be stored. We would like to propose one more useful application of umbilical cords. It is a traditional custom for Japanese parents to keep their baby’s umbilical cord stumps (Heso-no-O). When an umbilical cord falls from a baby, it is preserved under dryness, put in a tiny box, and handed to the parents, so that they can keep the mumified tissue as long as they...
want. We propose that the mummified cord stump serve as a source of genetic information for an individual.

We found a family with decreased cholinesterase activity in serum and carried out a genetical study on the gene encoding for the enzyme butyrylcholinesterase (1). The family members were cooperative and agreed to provide blood samples. But the parents were reluctant to have blood drawn from their children (a 1-year-old boy and a newborn infant) and provided small pieces of umbilical cord stumps instead. Sequencing was successful and revealed a mutation (1).

One of us happened to remember that he had been keeping the umbilical cord stump of his son. We analyzed its DNA and obtained a normal sequence of the gene for use as a control. The son was 20 years old at the time of our investigation, which indicates that an umbilical cord stump can be used for genetic analyses even after 20 years.

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References

I write to commend Clare Thompson on her excellent article. She has provided a lucid summary of recent developments in a complex area that includes hematology, immunology, and genetics. I would like to note that, with respect to the “first cord blood bank in the UK,” one was established by the Northern Ireland Blood Transfusion Service in November 1994.

Chitra Bharucha
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I would like to object to the flippant references to umbilical cords in Thompson’s otherwise excellent and illuminating article. In the title and first three sentences alone the umbilical cord is referred to as “garbage,” “detritus,” and “discard.” This “garbage” intimately and beautifully connects sentient beings for 9 months.

James J. Gormley
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Letters to the Editor

Letters may be submitted by e-mail (at science_letters@aaas.org), fax (202-289-7562), or regular mail (Science, 1200 New York Avenue NW, Washington, DC 20005). Letters are not routinely acknowledged. Full addresses, signatures, and daytime phone numbers should be included. Letters should be brief (300 words or less) and may be edited for reasons of clarity or space. In October 1995, our previous policy of consulting with all letter authors before publication was discontinued.

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Hope for Milder Bill on Student Surveys

Social scientists, who have been campaigning to blunt the effects of a House bill which they say would jeopardize surveys on adolescent behavior, are encouraged by signs that the Senate may entertain a more moderate proposal early next year.

In February, according to staffers, the Senate Governmental Affairs Committee will take up the Family Privacy Preservation Act (H.R. 1271), a bill that originated in the Republican “Contract with America” and passed the House by a wide margin in April (Science, 19 May, p. 967). The House version would require written consent from parents before minors could participate in any federally funded survey, potentially interfering with surveys administered at school. The Research and Privacy Coalition, a group of 35 organizations of scientists, doctors, teachers, and parents that formed in October to oppose the bill, has been lobbying the Senate committee to tone down some of the bill’s restrictive language. And now, according to coalition leader Susan Persons of the American Psychological Society, committee members Carl Levin (D-MI) and John Glenn (D-OH) are planning to introduce amendments that would do just that.

Most federal surveys currently cannot be given without parental notification, but if a child’s parent doesn’t explicitly refuse, consent is implied. Under the House bill, a failure to respond is a denial. Supporters of H.R. 1271 say such surveys deal with subjects—like sex, drugs, and suicide—that parents don’t want their children exposed to. But social psychologist Lloyd Johnston of the University of Michigan testified at a Senate hearing last month that if prior written consent for such surveys were required, response rates would drop from 95% to 50%.

Clinton Science Plan: Don’t Ask for Details

The White House is trumpeting its new 7-year balanced budget plan as good news for federal research, but it will be months before anyone knows just how up-beat the news will be. The plan, released 7 December, “makes more funding available for investing in science and technology than the Republican budget” vetoed by President Bill Clinton, according to a White House statement. But there’s a catch: The numbers are secret.

Compared to the Republican plan, Clinton’s proposal is kinder to basic research at the National Institutes of Health (NIH), the National Science Foundation (NSF), and the National Aeronautics and Space Administration, including its Mission to Planet Earth, the White House says. There’s also more money for global-change research and environmental technology at the Environmental Protection Agency and for technology efforts at the Commerce Department. The latter programs are targeted by Republicans, while NSF and NIH budgets would change little under their plan.

But Clinton’s proposed budget doesn’t mean that agencies should expect a rosy future. A White House official says funding for the favored programs would lie between a freeze and an increase matching inflation—only slightly more than Republican projections for the agencies. Details, he adds, won’t be available until Clinton’s 1997 budget request reaches Capitol Hill in February.

MIT, NRC Faulted in Radiation Incident

Universities tend to bristle when the government tells them what to do, and that feeling was evident last week at a public meeting where the Nuclear Regulatory Commission (NRC) released its final report on the August poisoning of a biology postdoc at the Massachusetts Institute of Technology (MIT). While the NRC concluded that lax compliance with its rules may have contributed to the incident and to MIT’s 8-week delay in reporting it, NRC officials conceded that ambiguities in those rules were to blame as well.

Although the NRC found that Yuqing Li’s ingestion of some 570 microcuries of the radioisotope phosphorus-32 likely resulted from “a deliberate act,” the report also faults safety at MIT. Li’s lab—run by Nobelist Susumu Tonegawa—lacked proper controls on radioactive tracers, such as locks on freezers, said the NRC’s John Glenn. Glenn criticized MIT’s Radiation Protection Office for failing to catch these flaws, and he charged that the MIT panel overseeing the office had not met at required intervals in 1993 and 1994.

MIT radiation chief Frank Massé, however, countered that the panel, which includes “very experienced people,” skipped only one meeting. “If calendar timing is the primary issue here, we could go to less senior members of the faculty, who obviously have less busy schedules,” Massé said. He also challenged Glenn’s claim that dosimetry data suggested Li’s exposure could exceed the 5 rem NRC limit for radiation workers, requiring that MIT notify NRC within 30 days.

Glenn admitted that the period for measuring such exposures is unclear in NRC rules. Nor do the rules support an October NRC notice requiring institutions to report within 2 days suspected misuse of radioisotopes, he said. Fixes for such problems may be discussed at a meeting of NRC commissioners next week.

Leaders of Russia’s scientific trade union, who this week blasted President Boris Yeltsin’s government for deep cuts in state spending on basic research, are planning to appeal for a large boost in science funding—from 1.5% of Russia’s gross domestic spending in 1995 to between 2% and 2.6% in 1996.

The Trade Union for Workers of the Russian Academy of Sciences (PRRAN), meeting in Moscow earlier this week, has drawn up a resolution to be submitted to the Yeltsin government later this month. The resolution is meant to influence both Yeltsin and the Duma, Russia’s lower house of parliament, which is up for election on 17 December. The Ministry of Finance has already pledged to raise basic science spending by 50% in 1996—in line with PRRAN’s appeal—but many scientists are skeptical.

Speaking on behalf of PRRAN, which represents 96% of the academy’s 160,000 scientists, chemist Grant Symon of the Institute of Elemental-Organic Compounds in Moscow told Science that he views the present government as biased against basic research. This is, he says, “a tragic mistake.” Russia has spent just $37 million on basic science this year, most of which has been eaten up by utility bills for academy institutes and small salaries for researchers.

Symon adds that the academy must be better funded to preserve Russia’s scientific community, which has lost a third of its members since the Soviet Union’s breakup. But many Western experts—as well as younger Russian scientists—disagree. They argue that the country’s sprawling scientific establishment needs to shrink further. All eyes will be on the new Duma to see whether it chooses retrenchment or restoration for Russian science.
NASA Decides to Grab a Bit of Stardust

It has been 23 years since the last samples of matter from outer space were brought back by the astronauts of Apollo 17, but now scientists have received the go-ahead to fetch more bits from beyond our planet. And they'll do it at a bargain price: Instead of the billions of dollars for Apollo, the Stardust mission will sweep up tens of thousands of dust particles fresh from a comet and parachute them onto a Utah desert for just $200 million.

The National Aeronautics and Space Administration (NASA) selected Stardust last month to be the fourth in the series of Discovery missions, the embodiment of NASA Administrator Daniel Goldin's "smaller, faster, cheaper, better" approach to planetary exploration. Stardust's selection comes on the heels of the designation of the $59 million Lunar Prospector last spring (Science, 10 March, p. 1425). Stardust may not be that cheap, notes its principal investigator, Donald Brownlee of the University of Washington, but a sample return mission for $200 million is "nearly miraculous." Some planetary scientists felt the NASA selection of Prospector was unduly swayed by its extremely low cost, but the selection process "is improving," says space physicist Christopher Russell of the University of California, Los Angeles. "NASA did a much better job; I'm much more pleased."

Scheduled for launch in 1999, Stardust will fly by Comet Wild-2, which travels between the orbits of Earth and Jupiter, in 2004. It could pass only 100 kilometers from the comet's icy nucleus, a remnant of the material that formed the solar system. As it takes the most detailed pictures ever of a comet nucleus, the spacecraft will sweep up microscopic dust particles spewed by the nucleus using a collector made of aerogel, the lowest density solid material known. The aerogel will gently slow the particles from impact speeds of billions of kilometers per hour so that researchers back on Earth can get their first close-up look at bona fide primordial matter.

Europe's Beef
Against Hormones

Seven years after the European Union (EU) banned U.S. imports of beef from animals raised with hormone supplements, an international meeting of scientists to examine the issue has concluded such hormones cause no harm to humans. But the EU may still resist any change.

Last June the U.S. Secretary of Agriculture, Dan Glickman, called on the EU to end the ban—which costs the United States $100 million a year in lost revenues—or the Americans would bring the matter before the World Trade Organization (WTO). In response, the EU Commissioner for Agriculture, Franz Fischler, held a "Scientific Conference on Growth Promotion in Meat Production" in Brussels from 29 November to 1 December to discuss the health risks of veterinary hormones.

"The conference scientists found no evidence of human health risk associated with use of growth-promoting hormones used under 'prescribed conditions,' " says food scientist A. W. Randell, an observer at the meeting for the Codex Alimentarius Commission, which publishes food standards for the international community and the WTO. Last July the commission endorsed the use of three natural hormones when used according to "good veterinary practice" to speed weight gain in cattle, as well as two synthetic hormones, as long as the residues from them in meat remain below certain limits.

Although the conference results add yet more support for lifting the ban, Randell notes, "the EU may try to delay making a decision" on hormone acceptability. EU consumer and farmer groups have a beef against the imported beef and are pressing the union to maintain the ban. Vincent Perot of the European Consumers Organization says, "European consumers are completely against the use of added hormones in meat."

EU and U.S. officials are meeting in early January to discuss the ban, and the U.S. side is still optimistic. "We are waiting with a lot of confidence to hear what the EU decision will be," says Paul Drazek, special assistant to Glickman. "Hopefully we can work this out bilaterally, and we won't have to go to the WTO."

Radiation Research
Subjects Sue

Fourteen men who as teenagers in the 1940s and 1950s were subjects of ethnically dubious radiation experiments have filed a $56 million lawsuit against the Massachusetts Institute of Technology (MIT), several doctors, and Quaker Oats Co., which allegedly gave them X rays for years without their consent. The men say they were subjected to "radiation regimens that were not only unapproved but unethical and illegal." The lead plaintiff, Don Cline, who was exposed at the U.S. Atomic Energy Commission's Winthrop, Massachusetts, facility, says he was unaware that doctors at the World War II-era complex were conducting "medical experiments on human beings in conditions and methods wanting in human respect.

Another lead plaintiff, John junior and John senior, were the first and second plaintiffs to be exposed, respectively, on the upper peninsula of Michigan. John junior was the subject of a series of experiments in which doctors performed X rays on his upper chest, abdomen, skull, and the area around his right ear. He divided by 2 (generating an answer of 100 million or $200 million). After about a minute, the correct answer—6—appears. When this question appeared during a recent game, the answer was greeted by wild cheers from those who guessed right, says UW chemistry professor and football fan Art Ellis. Ellis helped develop the questions as one of the first projects of the new National Institute for Science Education (NISE), a National Science Foundation–funded institute headquartered at UW. (More about NISE programs can be found at its still-evolving Web site: http://www.wcer.wisc.edu/nise.)

Other questions include: If you sit behind the end zone and see a spectacular tackle at the opposite end of the field, how long after you see the tackle do you hear it—at the same time, 1/4 second later, or 1 second later? (Hint: The speed of sound in air is about 368 yards per second.) Football season ended last month, but NISE educators are already cooking up questions to be aired at winter basketball games.

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Mistaken Identity? Hoatzin.

Next year’s outlook for U.S. industrial R&D is rosier than at any time since 1990, according to a new survey of corporate spending, suggesting that high-tech industries may be gearing up for another growth spurt.

The Industrial Research Institute (IRI), whose 257 member companies carry out the vast majority of the country’s industrial R&D, reported last month that 38% of the 151 companies who responded to its annual survey plan to increase R&D spending in 1996, compared with only 27% last year. Twice as many companies as last year expect to increase capital spending, and more than four times as many as last year plan to hire more science and engineering graduates than they did in 1995. Total R&D spending is expected to rise by 6%, after remaining flat for the past few years.

Leading the pack are the pharmaceutical, electronics, communications, and personal computer products sectors, with estimated increases of more than 10%. At the same time, petroleum and energy companies foresee a drop of 6%.

“This is some of the best news I’ve seen in a long time,” says Paul Germeraad, chair of the IRI panel that carried out the August-September survey and director of corporate research for Avery Dennison, a California aerospace firm. “The turnaround represents a shift in corporate strategies from increased productivity to growth, and the rise in capital spending reflects the fact that companies are concentrating on making new products.”

Although the survey is a forecast, policy-makers think its numbers are solid. “These R&D managers are a pretty conservative lot,” says Graham Mitchell, assistant secretary for technology in the Commerce Department and a past chair of the IRI survey. “Barring an economic downturn, I would be very surprised if these numbers didn’t turn out to be absolutely the case in 1996.”

Upturn Seen for Industrial R&D

(continued from page 1763)

edly funded the work to make its oatmeal more competitive.

The men, who lived at the Fernald School for mentally retarded children in Waltham, Massachusetts, were among 70 boys given radio-tagged milk so scientists could learn whether eating oatmeal inhibits the intestinal absorption of iron and calcium (Science, 28 January 1994, p. 470). Although the doses were very small, neither the boys nor their parents gave informed consent. This came to light in 1993 when news reports revealed a slew of radiation experiments conducted by the federal government following World War II. President Clinton and MIT’s president later offered the Fernald School subjects an apology, but no compensation, as Massachusetts and federal task forces formed to look into such experiments had concluded the boys suffered no significant harm.

But Michael Mattchen, lawyer for the group, says, “these gentlemen have decided that an apology is not enough.” In a suit filed 1 December and reported last week in the Boston Globe, Mattchen’s team argues that the 14 men and three of their wives each should get $1 million for suffering and $3 million to dissuade other researchers from using people “as guinea pigs.” The suit says some doses were higher than the 1 microcurie approved by the government, and it says the men now suffer unspecified health problems from the experiments. And it claims that Quaker Oats paid MIT to conduct the research to show oatmeal’s effects on mineral metabolism were insignificant, helping the cereal to compete with wheat-based cereals. An MIT spokesperson declined to comment on the lawsuit, other than to point out “that the state commission did find that there were no significant health effects.”

Bird of Another Feather

The hoatzin (pronounced “watson”), one of the world’s most unusual birds, may have spent the last 2 centuries in the wrong family tree, according to a new genetic analysis. The South American bird is the only avian species to have a ruminant digestive system: Like a cow, it predigests its food in a muscular crop containing cellulose-munching bacteria. Since it was first described 219 years ago, the hoatzin has usually been placed in the order Galliformes, which includes pheasants, chickens, and other birds with heavy bodies.

Some experts have argued, however, that the bird’s plumage and markings resemble the cuckoo’s and that it should be grouped in the order Cuculiformes. And in a paper published in the 5 December Proceedings of the National Academy of Sciences, scientists led by biologist S. Blair Hedges of Pennsylvania State University provide the first statistically significant genetic evidence that the hoatzin is more closely related to the cuckoo than to the Galliformes. “We’re proposing a major move for this bird. It’s like moving something from the rodents to the primates,” Hedges says.

The scientists came to their conclusion after comparing more than 1850 base pairs of DNA—including three different genes, two of them mitochondrial—from eight species of birds. A University of Georgia group had earlier tried to find a cuckoo link using half as many base pairs and one gene, but the authors had deemed their study inconclusive.

Paul DeBenedictis, a systematic zoologist at the State University of New York Health Science Center in Syracuse, says that while some ornithologists who favor grouping the hoatzin with the Galliformes “will have reservations” about the Penn State team’s work, “the majority would accept this as an interesting conclusion.”

Harvard Joins Telescope Project

The Carnegie Institution and the University of Arizona, which are trying to build two new telescopes to probe Southern Hemisphere skies, are hoping that a deal they made with Harvard University last week will jump-start their funding drive. Harvard has agreed to fund 25% to 33% of the $40 million needed to complete Magellan I, a 6.5-meter-aperture optical and infrared telescope under construction since 1993 at Las Campanas, Chile. And Carnegie officials say a telescopic twin, Magellan II, will be built on the site if more funds can be raised in the next year by Harvard and other potential partners. Harvard’s final share of the Magellan costs will entitle astronomers at the Harvard College Observatory to an equivalent share of viewing time, says Stephen Shectman, the Magellan Project director. The university will also help pay instrumentation and operating costs of $2 million to $3 million per year.

Magellan I won’t be of unprecedented size; the Keck I telescope in Hawaii has a 10-meter mirror, and several 8-meter telescopes are in the works, some in the south. But those telescopes tend to be shared by large groups of users that compete for time, while Magellan astronomers will have “more regular and reliable” access, Shectman notes. “We want a minimum type of facility to [stay competitive] into the next century,” he says. If two are built, the telescopes could also be used together in a high-resolution technique known as interferometry, but adding that capability would be costly; at least at first, the telescopes will be used individually, Shectman says.
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**Training in Subspecialty Medicine: Current Status and Public Policy**
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George Bost, Memorial Sloan Kettering Cancer Center

**Clinical Epidemiology/Health Care Research**
Pamela G. Williams-Bruzzo, Cornell University Medical College

**Pulmonary/Critical Care**
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Leslie DeGroot, University of Chicago Medical Center

**Renal/Hypertension**
Barry M. Brenner, Harvard Medical School

**Inflammation**
William M. Nauseef, University of Iowa

**Regulation of Gene Expression**
Herbert H. Samuels, New York University

**Physiology**
J. Chris Gillin, University of California, San Diego

**Cytokines/Growth Factors**
Derek LeBoth, National Institute of Diabetes and Digestive and Kidney Diseases

**Dermatology**
Juan Uitto, Thomas Jefferson Medical College

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Elizabeth G. Nabel, University of Michigan

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