

Random Samples:

Getting the Grants

The National Science Foundation has made a major discovery: give people money and (generally) they like you; turn 'em down and they get a bit testy.

NSF surveyed some 14,000 principal investigators who applied for money during fiscal year 1985, more than 9,500 of whom responded. Two-thirds of them had had applications denied during that time and often they weren't happy about it. Sixty percent of those turned down said the decision had been made unfairly.

Overall, about half the respondents were satisfied with the review process, while 38% were dissatisfied, and 14% were neutral. Again, researchers who consistently had been turned down were dissatisfied (57%) while those who consistently got money were satisfied (83%).

The survey also offers a possible clue to success at NSF grant-getting: investigators who contacted NSF staff personally or in writing before submitting a proposal were somewhat more likely to get funding.

The findings are reported in *Proposal Review at NSF: Perceptions of Principal Investigators* (National Science Foundation Report 88-4).

Purdue Keeps Popping

Purdue University has given an honorary doctorate in agriculture to alumnus Orville Redenbacher for his 40 years of popcorn research.

"Purdue not only pioneered research in popping corn hybridization, but they also helped begin my 'pop to the top' in the popcorn industry," said a pleased popcorn king.

Redenbacher started his business in 1952 and personally

crisscrossed the country peddling his corn and appearing in his own television commercials. He sold the company to Beatrice-Hunt-Wesson in 1976.

The 80-year-old Redenbacher, whose grandfatherly image graces his popular brand of popcorn, is a member of the class of '28.

Chix in Space



Has the franchising of space begun?

When the space shuttle Discovery lifts off next January, it will carry aboard 32 fertilized chicken eggs in a special incubator as part of an experiment to see if embryos can develop normally in space. The experiment is funded by a \$50,000 grant from Kentucky Fried Chicken—the fast-food corporation's first research effort.

The project—part of NASA's Shuttle Student Involvement Program—is the brainchild of 22-year-old John Vellinger, a junior mechanical engineering major at Purdue University. Vellinger developed the experiment as a junior in high school, and NASA first scheduled it for the ill-fated flight of Challenger in January 1986.

The eggs will rest in a heated and humidity-controlled cradling carrier inside a locker aboard the space shuttle. The cradle is designed to reduce the effects of *g* forces and vibration during lift-off. After return, the egg will be compared with a control batch on Earth at the

Kennedy Space Center in Florida. Vellinger will mother hen the Earth-bound eggs by turning them five times a day, simulating the movement of a chicken incubating her eggs. Some of the eggs from both batches will be hatched and the

offspring observed through their life cycle.

On Earth, gravity pulls the heavier yolk to the bottom of the egg. Vellinger thinks that under weightlessness the yolk will hang suspended in the middle of the egg, resulting in more efficient embryonic development and a better chicken. And, presumably, in better fried chicken and chicken nuggets.

It may also offer clues as to how human embryos may one day develop in space.

Colonel Sanders would be proud.

A Message from Alvarez

In his memoir, *Alvarez: Adventures of a Physicist*, Luis W. Alvarez, the Nobel Prize-winning physicist, comments that "I will probably be remembered longest for work done with my son Walt in a field about which I knew absolutely nothing until I was sixty-six years old. The field is geology; the work is our impact theory of mass extinctions."

Over the years Alvarez, *pere et fils*, have been outspoken proponents of their theory. But in a letter to friends and colleagues, Alvarez explains his recent absence from the scene and the state of his health.

"In the last six months . . . I have received almost one hundred letters inquiring into my

health, wishing me good health and generally expressing concern that I am still out of action," he writes.

He then recounts a spiraling decline in his health and a series of operations so long that "I might have a hard time reconstructing it."

He describes several years of deteriorating balance, until a brain scan in late 1987 revealed a large benign tumor (called an acoustic neuroma) at the base of his brain. Most of the tumor was successfully removed, Alvarez says, but he was left with a case of Bell's palsy, in which his left eye and face droop. The condition may not improve, he says, "so you might as well get used to seeing me like that."

His recovery was slow, and he even called together his family for a last good-bye. Then in mid-January, he agreed to surgery for another problem—a malignant esophageal lesion that prevented his eating—despite his belief that "major surgery is a real evil for which there is no palliative."

By March, Alvarez found himself "weaker than I have ever been in my adult life, and my main job is to get out of my bed. I get out of bed, and walk around a route I have mapped out on the first floor of my home, and as they say in Cairo, 'Inshallah' (God willing), I will be back on my feet one of these days.

Weakened or no, he does come to the defense of his theory. "We are, I think it is fair to say, quite legitimate as a theory and in fact, most probably, 'the only game in town.'"

He may well be speeded in his recovery by the news that in March Eugene and Carolyn Shoemaker discovered an unnamed asteroid about 10 kilometers in diameter—about the same size as the Nemesis of his mass-extinction theory. It is now called asteroid "Alvarez."

He then closes with typical aplomb: "Don't bother to return congratulations—I will assume they are on some proper thought wave channel."

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