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Research News

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Never Too Late to Do Research

You are never too old to do research. It is never too late to start. Research can be just as exciting when you are 90 years old. This is the lesson we can learn from one of the greatest researchers of all time.

Linus Pauling, the world's only winner of two unshared Nobel Prizes (chemistry in '54, peace in '62), celebrated his 90th birthday last February.

Dr. Pauling remains active in research at the Linus Pauling Institute in Palo Alto. And he hasn't become any less absorbed with his controversial late-life epiphany: He is seeking a publisher for his latest book on cancer and Vitamin C. Linus Pauling ingests 18 grams of crystalline ascorbic acid every day, says that he has recently moved on to heart disease research. He and a colleague have developed

a guinea pig model for atherosclerosis. Guinea pigs usually eat a diet rich in Vitamin C, but if their diets are altered so they get levels comparable to what humans consume, says Pauling, "then they develop atherosclerosis."

Perhaps the most important lesson we can learn from Linus Pauling is that we must keep our brains active and maintain our interest in our academic life and continue to research. A friend of similar age to Pauling with whom I occasionally play tennis suffers from a heart complaint. He also seems to have the right attitude to life, he says, "I hope to die on the tennis court, but not today."

Abstract Deadlines

AADS Boston, 1st September
AADR Boston, 27th September.
IADR Glasgow, 10th January

MRC Deadlines

Operating Grants Sept. 15th
Programme Grants Nov 1st.

Defending the use of Animals in Research.

An estimated 17 million to 22 million vertebrates are used each year in research, education and testing. The National Academy of Sciences in the US, is very worried about the growing influence of animal rights activists. The public may perceive that there is a problem even though the number of animals killed for research and teaching is less than 1% of the number killed for food. For this reason the academy has issued a position paper defending the use of animals in research.

The academy's Institute of Medicine has sent out 50,000 copies of the glossy, 30-page booklet - mostly to researchers, teachers and politicians - showing how animal research has led to medical advances.

Dr. Clifford Barger of Harvard Medical School, a member of the report committee, says scientists must convince the public that animals should continue to be used.

Animals have been "essential in every advance in medicine," he says. "If we have this kind of (negative) public reactions, it's going to prevent a cure for AIDS, for Alzheimer's

disease, all the important killers."

The report cites:

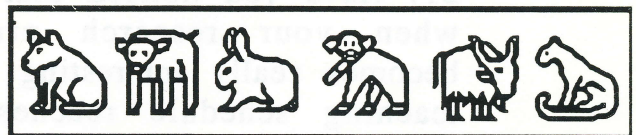
- Animal research has contributed to virtually eliminating many infectious diseases, including polio, rheumatic fever, tuberculosis, typhoid fever and scarlet fever.

- Two-thirds of the dogs and most of the cats used in research come from shelters; for every one used in research, 100 more are killed because they can't find a home.

Sue Brebner of People for the Ethical Treatment of Animals, which opposes the use of animals for research, has said: "The academy is panicking at losing one of the most unregulated and crudest forms of experimentation."

Study Director Dr. John Burris. has said that "if animal rights activists win the debate, a tremendous amount of research simply would stop." The concern for dental researchers is even more acute since it is much more difficult to defend non-life threatening dental disease related research than for example research into AIDS or cancer.

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Clinical Trials

Those faculty members contemplating conducting clinical trials will find a recent publication in Preventive Medicine valuable. The very useful paper is by C. D. Furberg which deals with the organizing of multi-center trials (Preventive Medicine, Jan. 1991, 20(1) p158-161). The paper points out that careful and thorough planning are essential aspects of a clinical trial that can make the difference and lead to a more successful trial. The value of feasibility studies is emphasized. Although the paper deals with cardiovascular prevention trials which have many complex issues of implementation it should also be of particular value to those contemplating a dental clinical trial. The author makes an important point that an openness to learn from lessons in previous clinical trials is essential.



21) Have you noticed that just when your research project becomes really interesting your teaching schedule reaches its busiest peak.

Exhilarating Experience

"Research results in knowledge that is as certain and reliable as anything we know. Science and technology are among humanity's greatest intellectual achievements, having transformed not only the material condition of our lives but also the way we see the world. A career in research offers an opportunity to join the pantheon of scientists and engineers who have changed the condition of life on earth and brought the universe to our doorstep. The conduct of research is a complex and demanding task. Why, then, pursue it? The answer is straightforward. The possibility of observing or understanding what no one has ever observed or understood before can be irresistible." "Ever since Archimedes streaked through the streets of pre-Christian Syracuse shouting "Eureka," scientists and engineers have found in the moments of discovery or innovation one of the most exhilarating experiences in their lives. Even the process of research itself can be deeply satisfying -- putting the pieces of a puzzle in place and making sense out of a mystery."

Walter E. Massey

Director

National Science Foundation

Publication Bias in Clinical Research

In the biomedical field when clinical trials are conducted which involve the efficacy of new products, drugs or materials, considerable care has to be taken to ensure the ethical interpretation of the data which may have significant financial potential for the private sector. However, peer review of papers submitted for publication is also an important aspect of the clinical trial.

A publication by P. J. Easterbrook *et al.* in the *Lancet* 337(8746) 867-72 April 1991. "Publication Bias in Clinical Research" takes a very in-depth look at some of the problems. A retrospective survey, 487 research projects approved by the Central Oxford Research Ethics Committee between 1984 and 1987, were studied for evidence of publication bias. As of May, 1990, 285 of the studies had been analyzed by the investigators, and 52% of these had been published. Studies with statistically significant results were more likely to be published than those finding no difference between the study groups (adjusted odds ratio [OR] 2.32; 95% confidence interval [CI] 1.25-4.28). Studies with significant results were also more likely to lead to a greater number of publications and

presentations and to be published in journals with a high citation impact factor. An increased likelihood of publication was also associated with a high rating by the investigator of the importance of the study results, and with increasing sample size. The tendency towards publication bias was greater with observational and laboratory-based experimental studies (OR = 3.79; 95% CI = 1.47-9.76) than with randomized clinical trials (OR = 0.84; 95% CI = 0.34-2.09). The authors confirmed the presence of publication bias in a cohort of clinical research studies. The findings by Easterbrook and colleagues suggest that conclusions based only on a review of research data published only in scientific journals should be interpreted cautiously, especially for observational studies. Improved strategies are needed to identify the results of 'unpublished' as well as published studies. This may be particularly true for some studies of clinical trials of implants. Researchers need to recognize that they have a duty to publish negative results since this is the only way that clinical science can make any real progress. Journals should also be prepared to allow publication of such studies.

Keeping Abreast of Implants

The Federal Government has warned doctors to stop using the Meme breast implant, pending a review of studies showing that the device can break down and excrete a potentially cancer-causing chemical. Health and Welfare Canada issued the warning about the implant after its U. S. manufacturer had pulled the product from the market. The implant has been surgically implanted in 13,500 Canadian women. The federal government's move follows a series of lawsuits in the United States, including one which resulted in a \$4.45-million payment to a New York woman who developed cancer after having Meme implants in 1983. The position of the manufacturer, Bristol-Myers Squibb Co., is that it is confident further tests will show the implants to be safe. As long ago as 1989 Dr. Pierre Blais, a scientist then working in Health and Welfare's Bureau of Medical Devices, convinced his peers that the product should be removed from the market until its safety could be verified. Later in 1989, after his concerns were made public, Dr. Blais was fired.

Dr. Blais' concerns of 1989 are now being investigated: (1) that the implant's polyurethane foam covering can break down

in conditions similar to those in women's bodies; and (2) that the suspected carcinogenic chemical 2-4 diamine is released in the process.

Dentures from Trees: Another Branch of the Roots of Dental History

Did you know that dentures were said to have been made in Japan as far back as the earliest days of the Tokugawa period. Proof was provided in 1927 when a set of complete upper and lower dentures made from wood were found in the entombed remains of Yagyu Hidanokami Munefuyu, a feudal lord under the third Tokugawa Shogun, Iemitsu.

Yagyu's death in 1675, at the age of sixty-one, indicates that Japanese dentistry possessed the technology more than three hundred years ago. This is nearly a hundred years before Pierre Fauchard, was said to have made his first set of complete dentures in 1737.

The wooden dentures found at Yagyu's tomb are said to be unique in several aspects when compared with examples of dentures made outside Japan. The actual teeth were carved in pairs out of talcum, and then inlaid into boxwood denture base.

[from Tooth Talk; by Kotaro
Fujita, Iwanami Shinsho.]
