
CASW

COUNCIL FOR THE ADVANCEMENT OF SCIENCE WRITING, INC.

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**SUNDAY,
NOVEMBER 9**

Registration and Hospitality Suite
starting at 6 P.M.

**MONDAY,
NOVEMBER 10**

8:00 A.M.

Registration continues, Luke Honeythunder Room

8:30 A.M.

to

11:30 A.M.

BEYOND THE "BIG BANG"

BEATRICE M. TINSLEY, Ph.D., *Associate Professor of
Astronomy, Watson Astronomy Center,
Yale University, New Haven*

New observations indicate that the universe is expanding at an ever faster rate. The findings may require reinstatement of Einstein's disinherited "cosmological constant" and, perhaps, the presence in the cosmos of fabulous clusters of "cannibal" galaxies.

THE BRAIN'S OWN MORPHINE

SOLOMON H. SNYDER, M.D., *Professor of Pharmacology
and Experimental Therapeutics and Professor of
Psychiatry, The Johns Hopkins University School of
Medicine, Baltimore*

Two years ago, the brain's opiate receptor was identified, which presumed the existence of a self-made morphine-like substance. Now that substance has been discovered and purified. It should help researchers better understand pain perception and the basis of emotions such as euphoria; lead to intelligent engineering of highly effective, non-addicting analgesics; open the way to important new treatments for addiction.

2:30 P.M.

to

5:30 P.M.

ENZYME ENGINEERING

GERALD WEISSMAN, M.D., *Professor of Medicine,
Director, Division of Rheumatology, New York
University Medical Center, New York*

Simply injecting missing enzymes is ineffective against certain inherited metabolic disorders; the immune system quickly spots and destroys the replacement molecules. However, a recently devised technique "fools" the body's search-and-destroy machinery and prompts enzyme-deficient cells into accepting the agent. So it is that the enzyme defect has been corrected in cells from patients with Tay-Sachs Disease.

THE BEES ARE COMING

ORLEY R. TAYLOR, Ph.D., *Associate Professor,
Departments of Entomology and Systematics and
Ecology, University of Kansas, Lawrence*

In 1957, progeny of a highly aggressive African species of bee imported to improve Brazilian honey production escaped from a Sao Paulo research station. They've been moving fast ever since—northward at the rate of 200 miles per year. Stories about their alleged viciousness are legion. How true are they? What's in store? Some myth-allaying observations by the scientist who heads a U.S. Department of Agriculture study of the bees' behavior and migration patterns.

8:00 P.M. NASW SESSION

"Is Science Journalism Being Written and Edited into Obsolescence." Panel discussion arranged by the National Association of Science Writers. Panelists: Edwin Diamond, journalism critic; Gene Roberts, executive editor of the Philadelphia Inquirer; Albert Rosenfeld, science editor of Saturday Review/World, and Richard Pollak, editor of "MORE" magazine.

TUESDAY,
NOVEMBER 11

8:30 A.M.
to
11:30 A.M.

THE QUALITY OF LIFE

ANGUS CAMPBELL, Ph.D., *Director, Institute of Social
Research, University of Michigan, Ann Arbor*

How do Americans perceive their lot in life? Answers are now in, the results of a large-scale national survey seeking to profile the nation's psychological GNP.

THE DISCRETE CHARM OF QUARKS

SHELDON L. GLASHOW, Ph.D., *Professor of Physics,
Harvard University, Cambridge*

The co-coiner of the term "charm" discusses a theory that seems to go a long way towards explaining the structure of subatomic particles. The theory calls for 12 kinds of quarks, classified according to "colors" and "flavors."

2:30 P.M.
to
5:30 P.M.

MAGNETIC MONOPOLES: THE UNICORNS OF PHYSICS

ALFRED S. GOLDBABER, Ph.D., *Associate Professor,
Institute for Theoretical Physics, State University of
New York at Stony Brook*

Like unicorns, monopoles have a quality of "oneness" which differentiates them from the "twoness" of more common species. Sightings of monopoles — as with unicorns — have been reported from time to time, but there remain skeptics who doubt the existence of either. How likely are we to find monopoles? What could we do with them if they do exist?

THE OZONE FIX

MICHAEL B. MCELROY, Ph.D., *Professor of Atmospheric
Sciences, Center for Earth and Planetary Physics,
Harvard University, Cambridge*

There may be much more to the ozone peril than just aerosol. Factors associated with life processes — nitrogen fixation, for example — may compound the hazard considerably. Some additional comments will be offered by Ralph J. Cicerone, Ph.D., Associate Research Scientist, Space Physics Research Laboratory, University of Michigan, one of the scientists who first brought the aerosol danger to public attention.

SOCIAL TRAPS

GARDNER QUARTON, M.D., *Professor of Psychiatry and
Director of the Mental Health Research Institute,
University of Michigan*

Social traps are situations in society where men, organizations or nations get themselves started on paths that later prove to be unpleasant or lethal, with no easy way to back out—e.g., energy crisis, drug addiction, the arms race. May-be analysis of the mechanisms of entrapment will lead to eventual solutions of many present-day social ills.

6:30 P.M.
to
8:30 P.M.

Hospitality Suite Open

WEDNESDAY,
NOVEMBER 12

8:30 A.M.
to
11:30 A.M.

"SINGLE CELL" AGRICULTURE

ISRAEL ZELITCH, Ph.D., *Head, Department of Biochemistry and Samuel W. Johnson Distinguished Scientist, Connecticut Agricultural Experiment Station, New Haven*

The ability to grow a whole plant from a single cell has spurred a search for ways of selecting mutant plant cells that will express desirable traits. Now at hand: a technique for growing cells likely to develop into plants with machinery for ultra-efficient photosynthesis.

MOVIES BY HOLOGRAM

EMMETT N. LEITH, *Professor of Electrical Engineering and Director of Electro-Optics Laboratory, University of Michigan; Science Adviser, Environmental Research Institute of Michigan (ERIM)*

JURIS UPATNIEKS, *Research Engineer, ERIM, and Adjunct Professor of Electrical and Computer Engineering, University of Michigan*

Full-fledged 3-D movies are in the offing. A workable prototype, featuring an ingenious and inexpensive lensing system, should be operating in a matter of months—devised by the researchers who pioneered the technology of holography. They will put on a demonstration of just how this technology has advanced.

2:30 P.M.
to
5:30 P.M.

Session in conjunction with the Conference Board of the Mathematical Sciences, and chaired by Lynn Arthur Steen, Ph.D., Department of Mathematics, St. Olaf's College, Northfield, Minn.

APPLIED MATHEMATICS: NOT FOR PHYSICAL SCIENCES ONLY

HENRY O. POLLAK, Ph.D., *Director of Mathematics and Statistical Research, Bell Laboratories, Murray Hill, N.J.*

Applied mathematics is indeed applied — probably to more areas than you think. Among the most recent applications: glottochronology (the application of statistical techniques to blueprint the historical development of languages); Q-Q Plots (which let you determine, for example, whether one minority group gets better treatment than another); power mathematics (with which to measure political clout).

DOES PURE MATHEMATICS HAVE ANYTHING TO DO WITH SCIENCE?

FELIX E. BROWDER, Ph.D., *Chairman, Department of
Mathematics, University of Chicago*

"I have seen the truth and it makes no sense." Chesterton's remark was not prompted, as some may suppose, by exposure to the realm of pure mathematics, where the pursuits may often seem esoteric and the relevance obscure. Time to clear the air, with some examples that may surprise you.

GAMES TEACHERS SHOULD PLAY

LAYMAN E. ALLEN, *Research Scientist, Mental Health
Research Institute, and Professor of Law,
University of Michigan*

Use of specially designed games that teach and enhance mathematical and other conceptual skills has reduced absenteeism in innercity schools dramatically. The inventor has made it fun to learn; he'll have some school kids around to show how it's done.

7:30 P.M.

COCKTAILS AND BUFFET SUPPER

Sponsored by the Council on Foundations
and Research Corporation

University Club, University of Michigan Campus

Speaker: FREDERICK SEITZ, *President, Rockefeller University,*
on "Private Science: Vital or Irrelevant"

THURSDAY,
NOVEMBER 13

9:00 A.M.

Session in conjunction with the Conference Board of the Mathematical
Sciences

News Conference

THE SCHOOL MATHEMATICS CRISIS: IS IT REAL?

Panelists: JAMES T. FEY, Ph.D., *Executive Director,
National Advisory Committee on Mathematics
Education (NACOME)*

SHIRLEY A. HILL, Ph.D., *Professor of Mathematics and
Elementary Education, University of Missouri,
Kansas City*

ROSS TAYLOR, Ph.D., *Director of Mathematics,
Minneapolis Public School System*

CLIFFORD SWARTZ, Ph.D., *Professor of Physics,
State University of New York at Stony Brook*

The new math is under intense fire once again. Critics point to widespread reports of declining student scores. The just-completed NACOME study — to be released here — comes to grips with this volatile issue.

11:00 A.M.

ADJOURNMENT

CASW

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