

# OREGON ACADEMY OF SCIENCE

(Incorporated 1946)

## Officers 1972-1973

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Chemistry: Norman E. Pawlowski

Geography: Frederick A. Hirsch and Larry  
W. Price

Geology: E. Julius Dasch and Ernest H. Lund

Mathematics-Physics: Raymond W. Som-  
merfeldt

Junior Academy: Lewis H. Schaad

## MEMBERSHIP INFORMATION

The Academy offers two categories of membership: Regular and Institutional - Corporate. All members receive the quarterly newsletter, the Proceedings, and have the privilege of attending the Annual Meeting. Dues and contributions are tax deductible. Regular members pay an annual dues of \$4.00. Institutional and Corporate members have the additional opportunity to present a public informational or advertising display at the Annual Meeting and pay \$25 annual dues. Membership inquiries should be addressed to the Treasurer of the Academy:

Dr. Jay F. Evett  
Department of Natural Sciences  
Oregon College of Education  
Monmouth, Oregon 97361

# OREGON ACADEMY of SCIENCE

Thirty-First

*Annual Meeting*

February 24, 1973

Oregon State University  
Corvallis, Oregon

## GENERAL PROGRAM

Weniger Hall+

February 24, 1973

### Morning

- 8:30-12:00 Registration
- 9:00-10:30 Section Meetings
- 10:30-11:00 Coffee Break
- 11:00-12:00 Community College Program,  
"Environmental Problems of Oregon"
- 12:00- 1:00 Lunch

### Afternoon

- 1:00- 2:15 Section Meetings
- 2:30- 3:15 Invited Speaker: Bernard J. Spinrad, "The  
Case for Nuclear Energy"  
151 Weniger Hall
- 3:15- 4:00 Academy Business Meeting: Election of  
Officers, Citations, and Reports  
151 Weniger Hall

## COMMUNITY COLLEGE PROGRAM

Environmental Problems of Oregon

151 Weniger Hall

William G. Loy, University of Oregon, Presiding

- 11:00 Welcoming Remarks  
Robert W. Krauss  
Dean, School of Engineering  
Oregon State University
- 11:05 "Environmental Problems of Central Oregon"  
Bruce Nolf and Wayne Eshelman, Central Oregon  
Community College, Bend
- 11:15 "Environmental Problems of Malheur County"  
Carlton Fletcher, Treasure Valley  
Community College, Ontario
- 11:25 "Clear Cutting as a Forestry Practice"  
Roger Dejmaj, Umpqua Community College,  
Roseburg
- 11:35 "Some Environmental Problems of the Wild River  
River Section of the Rogue"  
Eric Larsen, Rogue Community College,  
Grants Pass
- 11:45 "On Mercury Poisoning"  
John Nadakavukaren, Lane Community College,  
Eugene

+Free Parking on OSU Campus in Lots on Monroe Avenue  
Adjacent to Weniger Hall.

## INVITED SPEAKER

2:30 P.M., 151 Weniger Hall

"The Case for Nuclear Energy"

Bernard J. Spinrad  
Professor of Nuclear Engineering  
Oregon State University

## MEETINGS OF SECTIONS

### ANTHROPOLOGY SECTION

201 Weniger Hall

Marc Feldesman, Chairman, Presiding

### Morning

- 9:00 "Geography and Word Endings"  
Franklin E. Gossette, University of Oregon
- 9:30 "A Note on the Nature of Phoenician Merchantmen"  
Michael F. Doran and John Damron, University  
of Oregon
- 10:00 "Influence of Cultural Behavior on the Genetics of  
of a Human Isolate"  
Susan I. Wolf, Portland State University
- 10:30 Coffee Break

Paula Lutz, Chairman, Presiding

### Afternoon

- 1:00 "Slum / Ghetto Pattern in Canada's Far North"  
Jacob Fried, Portland State University
- 1:35 "George Gibbs IV: Ethnologist on the Pacific  
Frontier"  
Stephen D. Beckham, Linfield College
- 2:00 "Play and Sport in Culture"  
Sandra Suttie, Oregon State University
- 2:15 Business Meeting and Election of Officers

### BIOLOGY SECTION

149 Weniger Hall

Robert O. Novak, Chairman, Presiding

### Morning

- 9:00 "Adrenocortical and Reproductive Activity in the  
Montane Meadow Vole, *Microtus montanus*"  
Larry G. Forslund, Oregon State University
- 9:15 "A Population Study of the Cats of Corvallis"  
Siri M. Jackman, Oregon State University
- 9:30 "Habitat, Environmental, and Biotic Factors

Affecting the Growth of an alga, *Cystoseira osmundacea*, at Cape Arago, Oregon"  
Carolyn Cross, University of Oregon

- 9:45 "Effects of p,p'-DDE and p,p'-DDT on the Performance of Coturnix Quail Fed on Adequate and Deficient Calcium Diet"  
W. A. Robson, G. H. Arscott, and I. J. Tinsley, Oregon State University
- 10:00 "Effects of Dieldrin and Calcium on the Performance of *Coturnix coturnix japonica*"  
C. M. Reading, W. A. Robson, G. A. Arscott, and I. J. Tinsley, Oregon State University
- 10:15 "Archibald Menzies, Pioneer Naturalist on the Pacific Coast"  
Kenneth L. Holmes, Oregon College of Education
- 10:30 "L.D.H. Isozyme Variability in Eight Species of Fringillid Birds"  
Michael E. Darling, Portland State University
- 10:45 "Effect of Exogenous Mammalian Prolactin on Urea and Ammonium Excretion of Two Species of Newt."  
Robert L. Rodgers and F. L. Hisaw, Jr., Oregon State University

#### Afternoon

- 1:00 "Interrelationships of Vitamin C and B<sub>12</sub> with Thiamine, Riboflavin, and Pantothenic Acid in Coturnix Quail"  
V. Ramachandran and G. H. Arscott, Oregon State University
- 1:15 "Metabolic Changes in Juvenile Coho Salmon During Exercise"  
Hugo Krueger and James C. Baker, Oregon State University
- 1:30 "Equations to Describe Bioenergetic Parameters of Juvenile Coho Salmon"  
James C. Baker and Hugo Krueger, Oregon State University
- 1:45 "Glucose Metabolism in Cultures of Embryonic Cells from *Oncorhynchus kisutch*"  
Burton Lidgerding and Hugo Krueger, Oregon State University
- 2:00 "Plant Communities of Baja California"  
Jean I. DeHaven and J. Morris Johnson, Oregon College of Education
- 2:15 "Ecological Considerations of the Rogue River Wild Section"  
Eric Larsen, Rogue Community College

### CHEMISTRY SECTION

267 Weniger Hall

Norman E. Pawlowski, Chairman, Presiding

#### Morning

- 9:00 "Synthesis of Toxic Mold Metabolites"  
Norman E. Pawlowski and David J. Jones, Oregon

9:25 "Ionic Conductivity of  $KCl:O^{2-}$ "  
Daberath Kouts and A. B. Scott, Rogue Community College and Oregon State University

- 9:45 "Selectivity Mechanisms of Organoclay for Xylene Isomers"  
Richard Vasofsky and W. H. Slabaugh, Oregon State University
- 10:05 "Notes on the Chemical Determination of Trace Amounts of Mercury"  
Arthur F. Scott, Reed College

10:30 Coffee Break

#### Afternoon

- 1:00 "Arsenic Tissue Levels in Rats Supplemented with Dietary Arsenic"  
S. C. Elliott, N. D. Pederson, P. H. Weswig, and P. D. Whanger, Oregon State University
- 1:20 "Absence of Skin Contamination by Airborne Fluorides in the Rat"  
Frank W. Adams and Stanley C. Elliott, Oregon State University
- 1:35 "The Effects of Heat Treatment and  $Cd^{+2}$  Ion Exposure on the EPR Signal of Ferritin"  
G. F. Baker, Oregon State University

### GEOGRAPHY SECTION

149A Weniger Hall

Frederick A. Hirsch, Chairman, Presiding

#### Morning

- 9:00 "Root Wedging and Rock Disintegration."  
James E. Stembridge, Jr., University of Oregon
- 9:15 "An Analysis of Adjustments to Flooding: The Application of Kates' General Systems Model of Human Adjustments to Natural Hazards to a Community Flooded as a Result of Hurricane Agnes."  
Thomas P. Bresenhan, Oregon State University
- 9:30 "Local Response to the Requirements for Federal Flood Insurance."  
Rod Emmer, Oregon State University
- 9:45 "Cartographic Evidence of Geographic and Economic Change in Scotland in the Eighteenth Century."  
Ian H. Adams, Lewis and Clark College
- 10:00 "The Wilderness Use of Kings Canyon National Park"  
Douglas B. Cooke, University of Oregon
- 10:15 "The Transition of Hydro-Thermal Electrical Generation in the Pacific Northwest."  
Richard G. Beck, Oregon State University

## Larry W. Price, Chairman, Presiding

### Afternoon

- 1:00 "The Changing Perception of Water as a Resource: the Willamette River System as a Case in Point."  
Keith W. Muckleston, Oregon State University
- 1:15 "Relict Spas of Western Oregon."  
Howard Horowitz, University of Oregon
- 1:30 "The Winter Landscape: Viewpoints of Snowmobilers and Cross-Country Skiers"  
D. Richard Lycan and Morton I. Michelson, Portland State University
- 1:45 "An Appraisal of the Willamette Basin Comprehensive Plan."  
Dennis E. Oaks, Oregon State University
- 2:00 "The Effectiveness of Water Quality Standards in Oregon"  
Nancy A. Updegraff, Oregon State University
- 2:15 "Rates of Mass Wasting on Selected Slopes in North Central Oregon - A Preliminary Report."  
John B. Pyrch and Larry W. Price, Portland State University

## GEOLOGY SECTION

### 151 Weniger Hall

Ernest H. Lund, Chairman, Presiding

### Morning

- 9:00 "Plate Tectonic Interpretation of Major Structures, Northern Cascade Range, Washington"  
Robert D. Lawrence, Oregon State University
- 9:25 "Geological Framework of Washington's Southern Cascade Range"  
Paul E. Hammond, Portland State University
- 9:50 "Miocene Basalts from the Western Cascade Range and the Willamette Valley"  
Johnathan S. Fruchter and Simon Nathan, University of Oregon
- 10:15 "Age Relations of some Igneous Rocks of Western Oregon"  
A. R. McBirney, University of Oregon

### 10:40 Coffee Break

E. Julius Dasch, Chairman, Presiding

### Afternoon

- 1:00 "Geochronology and Structure of the Central Part of the Cascade Range, Oregon"  
Edward M. Taylor, Oregon State University
- 1:25 "Geology of the Mount McLoughlin Area"  
Leroy C. Maynard, University of Oregon

- 1:50 "Mesozoic Tectonism in a Part of the Northern Eagle Cap Wilderness Area, Northeastern Oregon"  
Kenneth G. Neal, Portland State University

## MATHEMATICS-PHYSICS SECTION

### 153 Weniger Hall

Raymond W. Sommerfeldt, Chairman,  
Presiding

### Morning

- 9:00 "Search for Chemically-Bound Neutrons"  
Donald H. White, Oregon College of Education,  
and Walter John, Jr., Stanislaus State College
- 9:20 "Dipole Layer Model of Lipid Membranes Displaying Negative Resistance"  
Pavel K. Smejtek, Kwan Hsu, and Arnold D. Pickar, Portland State University
- 9:45 "On-Line Computer Graphics Systems for Class Use"  
J. F. Doar, Oregon State University
- 10:15 "Population Oscillations"  
Paul Cull, Oregon State University
- 10:30 "Some Recent Progress"  
William M. Stone, Oregon State University

### 10:45 Coffee Break

### Afternoon

- 1:00 "A Quasi-Practical Interstellar Rocket Trip"  
James D. Edmonds, Jr., Oregon State University
- 1:25 "An Experimental Check on the Fluid Dynamic Theory which is Used for Calculating the Collision Efficiencies of Cloud Droplets"  
Carl G. Bachhuber, Portland State University
- 1:40 "State of the Nautical Almanac and Astronomical Ephemeris from 1811 to 1834"  
Walter L. Bell, Linfield College
- 2:10 Business Meeting and Election of Officers

## JUNIOR ACADEMY OF SCIENCE

### 116 Weniger Hall

Lewis H. Schaad, Chairman, Presiding

Titles of Papers to be Announced at Meeting