Environmental Noise: Joseph F. Pizzirusso (Scott Paper Company, Eddystone, Pennsylvania), chairman.

Laymon N. Miller (Bolt Beranek and Newman, Inc.), *Human Response to Noise.*

Alexander Cohen (National Institute for Occupational Safety and Health, U.S. Public Health Service, Cincinnati), *Industrial Noise and Its Effect on Hearing.*

Paul Borsky (Noise Research School of Public Health, Columbia University), *Effects of Noise in the Community.*

Theodore J. Schultz, *Community Noise Ordinances in the United States and Europe.*

James H. Botsford (Bethlehem Steel Corp., Bethlehem, Pa.), *Proposed American Standard for Community Noise.*

Clifford R. Bragdon (Georgia Institute of Technology, Atlanta), *Community Noise Management: A Social Evaluation.*

James J. Kaufman (Dully, Marks, Corbett, Tanenbaum, Reifsteck, and Potter, Attorneys and Counselors at Law, Rochester, New York), *Legal Aspects of Noise.*

29 December (afternoon)

Environmental Noise Control: Rocco A. DiTaranto (PMC Colleges, Chester, Pennsylvania), chairman.

Harvey H. Hubbard (NASA Langley Research Center), *Generation and Control of Aircraft Noise and Sonic Boom.*

William N. Scott (Chrysler Corporation, Detroit), *Vehicular Noise.*

Grant S. Anderson (Bolt Beranek and Newman, Inc.), *Urban Highway Planning for Minimum Noise.*

George E. Winzer (U.S. Department of Housing and Urban Development), *Design of Noise Control in Housing.*

William W. Lang (International Business Machines Corp., Poughkeepsie), *Product Noise and Its Control.*

George M. Diehl (Ingersoll-Rand Co., Phillipsburg, New Jersey), *Noise Control of Construction Equipment.*

Paul B. Ostergaard (Ostergaard Associates, West Caldwell, New Jersey), *Can Industrial Plants be Adequately Quieted?*

29 December (afternoon)

Computers and Music

Arranged by Max V. Mathews (Bell Telephone Laboratories, Murray Hill, New Jersey).

Lejaren Hiller (State University of New York, Buffalo), *Composition and Analysis of Music by Computer.*

Jean-Claude Risset (University of Paris, Orsay, France), *Direct Digital Synthesis of Music and Sounds and Catalogue of Computer Synthesized Sounds.*

F. Richard Moore (Bell Telephone Laboratories), *Computer-Controlled Analog Synthesizers.*

Max V. Mathews, *The Future of Computer and Electronic Music.*

30 December (morning)

Education in Acoustics

Arranged by Mary L. Harbold (Temple University).

R. Bruce Lindsay (Brown University), *The Science of Acoustics.*

Eugene Watson (Pennsylvania State University), *Musical Acoustics as a Motivating Force in Scientific Research and Education.*

William J. Strong (Brigham Young University), *A Course in Descriptive Acoustics for Music and Speech Students.*

John C. Johnson (Pennsylvania State University), *Education in Acoustics: Status and Need.*

30 December (afternoon)

Panel discussion arranged by Joseph F. Pizzirusso.

Panel members: Richard Winchester (Children's Hospital of Philadelphia), Louis G. Wersen (Philadelphia Board of Education), R. Bruce Lindsay, Raymond J. Seeger (AAAS), David E. Connor (David Connor Architect and Associates, Philadelphia), and Herbert Silverstein (University of Pennsylvania).

27 December

Science and the Humanities

In his essay entitled "Science and Humanism," Erwin Schrödinger warned of the dangers inherent in specialization and in the isolated knowledge obtained by specialists. Moving further into the topic, Schrödinger reminded us of Ortega y Gasset's words about the specialist in science: "He is a person who, of all things that a truly educated person ought to know of, is familiar only with one particular science, nay even of this science only that small portion is known to him in which he himself is engaged in research." He continued with the strong advice: "Never lose sight of the role your particular subject has within the great performance of the tragicomedy of human life; keep in touch with life—not so much with practical life as with the ideal background of life, which is ever so much more important; and, *Keep, life in touch with you* [Schrödinger's italics]. If you cannot—in the long run—tell everyone what you have been doing, your doing has been worthless."

Our educational programs in the sciences and the humanities have paid scant attention to these admonitions. In an era when specialization is far more extensive than in the periods of y Gasset or Schrödinger, many students graduate from college insensitive to the role of their disciplines in the synthesis of new understanding for man. Our undergraduate courses in the sciences frequently succumb to the increasing pressures of preparing students to qualify for graduate programs while smothering any vestige of appreciation for the creative insights and elementary philosophical implications of such matters as quantum mechanics, relativity, evolution, or the Debye-Hückel theory. On the other hand, in the humanities, presumably concerned with "who we are," students pursue a dispassionate gathering of knowledge while shunning the personal and social implications of what they learn. Like the scientist, the historian does not speak to the philosopher; the student of literature speaks rarely to the musician. Moreover, the humanities student's ignorance of the impact of science is often monumental. He frequently exhibits childlike faith in the potential of science to "save man."

In view of these developments, this symposium will deal with attempts by several individuals to encourage meaningful exchange between faculty and students in the sciences with those in the humanities. The scope of these efforts varies and spans programs designed to heighten awareness for the scientific basis of environmental concern, develop relationships between science and nonrepresentational art, examine literary and scientific responses to great scientific theories, and deal with the relative merits of science and the humanities in their attempts to understand the human condition.

At North Carolina State University (Raleigh), Henry A. Bent encourages students to seek some of the common goals of science and art. In a program entitled "Chemistry and Nonrepresentational Art," he seeks to make visible selected features of reality. In courses designed for students who are not science majors, Bent attempts to connect the sociological, political, economic, and religious attitudes in our society with the ecological facts of life as science now understands them.

At Westminister College in Pennsylvania, Frederick D. Horn (English) and Robert P. DeSieno (chemistry) collaborate in the design of courses that bring students from the humanities together with those from the sciences, to re-

search and discuss ideas and creative efforts of vital importance in both fields. A primary objective of this program is to help the student develop a sensitivity for the various ways by which man tries to understand reality and the impact of one discipline upon another.

At Brown University, George W. Morgan is concerned with understanding man in his wholeness. Morgan has helped develop at Brown a human studies program (started in 1967) wherein a student may direct his major effort to an intensive and sustained inquiry into questions that are of fundamental human importance today. By coupling departmental courses in the curriculum with independent study and seminars in human studies, a student, under the guidance of a faculty adviser, can explore various areas of human experiences or fundamental problems that need to be approached through several disciplines. Examples of themes that students have pursued are the impact of scientific thought on man's self image, man's relationship to his environment, comic and tragic senses of life, and ethics in medicine.

In this symposium, sponsored by the AAAS Section on Education, the participants (students and faculty) will discuss the mechanics of their interdisciplinary programs, the value and frustrations of their experience in this kind of education, and their suggestions for interdisciplinary work in the future.

FREDERICK D. HORN
ROBERT P. DESIENO
Westminister College,
New Wilmington, Pennsylvania

27 December

Scientific Institutions of the Future

The response of scientific institutions to the social expectations addressed to them seems likely to affect the future of research in many ways.

Participants in this symposium include both agents and students of institutional change. Each will describe a significant aspect of research institutions, in ways that may illuminate the processes, and future directions of change within such institutions.

Speakers and Topics

27 December (morning)

Arranged by Philip C. Ritterbush (Organization::Response, Washington, D.C.).

Jack Meltzer (University of Chicago), *The Future of Institutions in Urban Studies.*

John Steinhart (University of Wisconsin, Madison), *Institutions and the Generation of Purpose: Whose Environment Gets Managed and For What?*

Donald W. Collier (Borg-Warner Corp., Des Plains, Ill.), *The Future of Industrial Research Establishments.*

Christian N. Ramsey, Jr. (Institute for the Study of Health and Society, Washington, D.C.), *The Future of Medical Research and Health Care Institutions.*

27 December (afternoon)

Jon Seger (Harvard Graduate School of Education), *Institutional Effectiveness.*

F. Joseph Stokes, Jr. (Philadelphia, Pa.), disscussant.

Thomas J. Cottle (Massachusetts Institute of Technology), *The Uncertain Future of Institutions in Higher Education.*

Philip C. Ritterbush, *The Role of Institutions in Relating the Humanities to Science and Technology.*

27 December

Humor and Science

Why do people laugh? Do they do so out of hostility, or because they are surprised, or simply to relieve tensions? Must one learn to laugh? If so, how and when during childhood does laughter appear? In a larger context, what is the purpose of humor? Does it facilitate human interactions, or disrupt them? Can humor be studied scientifically or does analysis of laughter destroy that which is being analyzed? What about humor in science? Can a man or woman who laughs at his or her own feeble attempts to bring scientific order out of worldly chaos be trusted in the laboratory? Are scientists in their white lab coats members of a new religious order whose sanctity must not be jested at, or is the pinprick of wit a guard against pious scientific pomposity?

These and other questions—both pertinent and impertinent—will be raised and hopefully answered at this symposium on humor and science, in the morning session, featuring serious papers on humor and, during the afternoon session, with random shotgun blasts (satires, spoofs, and other forms of genteel leg-pulling) aimed at various targets by a number of practicing scientists. Audience participation (in the form of questions and comments) will be seriously encouraged at the morning session; audience participation (in the form of laughter) will be seriously anticipated at the afternoon session. Bring your own needles!

JAMES V. MCCONNELL
University of Michigan,
Ann Arbor

Speakers and Topics

Arranged by James V. McConnell (Department of Psychology and Mental Health Research Institute, University of Michigan).

27 December (morning)

Arthur Koestler (London, England), *The Logic or "Grammar" of Humor.* [Paper to be read by James V. McConnell.]

Paul McGhee (State University of New York at Albany), *Children's Humor: Empirical, Methodological, and Theoretical Considerations.*

Werner Mendel (University of Southern California, School of Medicine, Los Angeles), *Humor as an Index of Emotional Means.*

27 December (afternoon)

Joel Kirschbaum (The Squibb Institute for Medical Research, New Brunswick, New Jersey), *Lycanthropy Induced by Irradiation.*