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***Absolute Values  
and  
The Reassessment of the  
Contemporary World***



***Seventeenth International Conference  
on the  
Unity of the Sciences***

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**T**hanksgiving is the traditional American holiday that celebrates the creation of a new world by the Pilgrim fathers. It is a time for in-gathering of family, for rededication to traditional ideals, and for eating turkey. For veteran participants of ICUS, it is also a time to renew ties with the ICUS family—the scholars from many countries whom we have learned to know and to respect; to rededicate ourselves to the exploration of the problems of absolute values and of the unity of the sciences—and to eat turkey!

I hope that the newcomers to the XVIIth ICUS will quickly sense this spirit of Thanksgiving that pervades our meetings.

At this XVIIth ICUS, we shall speak of evolution and ethnocentrism, of ecology and neurobiology, of modernization and spirit, and of nuclear war. The topics touch upon many of mankind's most central problems and aspirations. That these questions in some sense are intractable does not deter us at ICUS XVII anymore than it has deterred us in past ICUSes. Addressing them seriously is in itself useful: we illuminate and define the problems even if we do not achieve eternal solutions.

The ICUS Thanksgiving Conference now is the culmination of a variety of ICUS activities. The International Journal on the Unity of the Sciences, under the

distinguished editorship of Marcelo Alonso, has almost completed its first year. And more than 15 books based on previous ICUS committees have appeared. These publications ought to extend to a wide scholarly community the message of ICUS—that unity and values are susceptible to serious scholarly analysis.

As chairman of ICUS XVII, I extend to each of you, both oldtimers and first participants, a most warm welcome. I would like also to extend to our sponsors, Reverend Moon and the International Cultural Foundation, and to the ICUS staff, my personal thanks for making this unique international conference possible, and for making sure that the conference runs smoothly. Finally, I offer my thanks for the serious effort each of you participants has already expended on behalf of ICUS XVII, and express my hope that you will find ICUS XVII an enjoyable, even exhilarating, if arduous, experience.



Alvin M. Weinberg  
Conference Chairman  
ICUS XVII (1988)

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**W**elcome to Los Angeles—one of the America's vital gateways to Asia, and second largest metropolitan area in the U.S. The rich ethnic composition, the diverse economy, and broad political spectrum here encapsulate America herself. Los Angeles has a long tradition of facing many of the nation's most severe challenges, and pioneering their solution. A fitting example to the ICUS community of scholars!

We gather here to continue our exploration of the conference theme, "Absolute Values and the Reassessment of the Contemporary World." Representatives from diverse academic disciplines will have the opportunity to engage in dialogue with colleagues from more than 47 countries. It is our hope that this year's conference can stimulate the participants in their search for responsible approaches and fresh solutions to the common problems facing mankind.

The conference staff is here to serve you in every aspect of your stay. If you need assistance in any way, please stop by the Conference Office located in the Sea-Tac Room. I encourage you to visit our book and activity displays to learn more about ICF-related activities of the Professors World Peace Academy (PWPA), Paragon House Publishers (PHP), Advisory Council to the Unification Movement International (ACUMI) and The Washington Institute for Values in Public Policy (WI). Your comments and suggestions for improving the conference as always are warmly welcome.



Neil Albert Salonen  
President  
International Cultural Foundation

**Seventeenth International Conference on the Unity of the Sciences  
November 24–27, 1988 • Stouffer Concourse Hotel, Los Angeles, CA**

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# Seventeenth ICUS Chairmen's Board

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**Conference Chairman**  
**Alvin M. Weinberg**  
*Distinguished Fellow  
Institute for Energy Analysis  
Oak Ridge Associated Universities  
Oak Ridge, Tennessee*



**Conference Vice-Chairman**  
**Michael Hignsberger**  
*Professor of Physics  
Institute of Experimental  
Physics  
University of Vienna  
Vienna, AUSTRIA*



**Conference Vice-Chairman**  
**Vincenzo Cappelletti**  
*Director General  
Italian Encyclopedia  
Institute  
Rome, ITALY*



**Plenary Speaker**  
**"Evolution of the Human  
Brain: Creation of the  
Conscious Self"**  
**Sir John Eccles**  
*Distinguished Professor of  
Physiology and Biophysics,  
Emertus  
State University of New York  
at Buffalo  
Buffalo, New York*



**Plenary Speaker**  
**"A Physicist's View of  
Living Systems"**  
**Frederick Seitz**  
*Former President  
Rockefeller University  
New York, New York*

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**Committee I** —Kennedy Room

***“The Evolution of Man”***

**Percy Lowenhard**  
*Organizing Chairman*  
Associate Professor of Psychology  
University of Göteborg  
Göteborg, SWEDEN

**Committee II** —La Guardia Room

***“Ethnocentrism vs. World Unity:  
Impacts on Socialization and  
Education”***

**Tamas Kozma**  
*Organizing Co-Chairman*  
Head of the Department of Policy Analysis & Planning  
Hungarian Institute for Educational Research  
Budapest, HUNGARY

**Klaus Schleicher**  
*Organizing Co-Chairman*  
Director, Institute of Comparative Education  
University of Hamburg  
Hamburg, WEST GERMANY

**Committee III** —Logan Room

***“Interdisciplinary Approaches to  
Development and Modernization”***

**Marcelo Alonso**  
*Honorary Chairman*  
President  
Technoconsult, Inc.  
Melbourne Beach, Florida

**M. Shamsheer Ali**  
*Organizing Chairman*  
Professor of Physics  
University of Bangladesh  
Dhaka, BANGLADESH

**Committee IV** —Midway Room

***“East-West Perspectives on Spirit and  
Science”***

**Ravi Ravindra**  
*Organizing Chairman*  
Departments of Comparative Religion and Physics  
Dalhousie University  
Halifax, CANADA

**Committee V** —National Room

***“Eco-Philosophy As a New Metaphysical  
and Cultural Reconstruction”***

**Alexander King**  
*Honorary Chairman*  
President  
Club of Rome  
Paris, FRANCE

**Henryk Skolimowski**  
*Organizing Chairman*  
Professor of Philosophy  
Department of Humanities  
University of Michigan  
Ann Arbor, Michigan

**Committee VI** —O'Hare Room

***“Neurobiology in Relation to Global  
Ideology and Values”***

**Kenneth Mellanby**  
*Honorary Chairman*  
Director Emeritus  
Monk's Wood Experimental Station  
Huntingdon, ENGLAND

**Jose M.R. Delgado**  
*Organizing Chairman*  
Professor and Director  
Center for the Study of Neurobiology  
Madrid, SPAIN

**Committee VII** —Orly Room

***“The Ethics of Nuclear Deterrence”***

**Morton A. Kaplan**  
*Honorary Chairman*  
Department of Political Science  
University of Chicago  
Chicago, Illinois

**Jack Barkenbus**  
*Organizing Chairman*  
Deputy Director  
Institute for Energy Analysis  
Oak Ridge Assoc. Universities  
Oak Ridge, Tennessee

## The Evolution of Man

It is evident that we live in a world of perpetual change. This applies to the universe as a whole, as well as to man, his world picture and his conceptions of himself. The history of our world includes many random elements, but seems in retrospect to show a pattern of evolution. This is particularly salient with respect to life and consciousness.

As far as we know, man is the highest form of intelligent life that has evolved on earth. The concept "evolution" is related to a vast domain of phenomena. It has, however, slightly different connotations in different contexts. It was the concept of biological evolution in the sense of Charles Darwin and his followers that started a revolution of thought that is still going on.

The committee will illuminate some steps and aspects of biological evolution on earth, which ultimately resulted in man and which in turn gave rise to cultural evolution. This includes physical preconditions for the emergence of life from both local and cosmic points of view as well as models regarding biopoiesis and the evolution of the genetic code. The evolution of man as a species is related to both biological and cultural factors. The human

species is characterized by pronounced mental features: symbolic thinking, abstract intelligence and the use of language for a variety of purposes. Language and the handling of symbols play an essential role in rituals and in the evolution of man as a cultural being. This includes the influence of ideas on the shaping of modern man, of his environment and society.

Knowledge is of value in itself, since it has survival value for the individual. In a similar sense the ultimate goal of science and its applications should be the benefit of mankind. This must be part of the ethos of science.

The evolution of science includes the evolution of new and better concepts. Nevertheless, this process rapidly extended outside the range of comprehension of everyday man. It has been said that science begins where common understanding ends. But it is also known that the past frontiers of science are common knowledge to students of today. The development of an ethos of science presupposes an understanding of its principles and implications. Our rapidly growing knowledge demands more efficient methods of education, which thus should become an essential part of cultural progress.



**Organizing Chairman**  
**Percy Lowenhard**  
Associate Professor of  
Psychology  
University of Göteborg  
Göteborg, SWEDEN

### Session I.

Friday, November 25, 2:30-4:30 pm

#### 1. The Anthropic Principle—Physical Constraints for the Evolution of Intelligent Life: An Epistemological Assessment



**Bernulf Kanitscheider**  
Professor of Philosophy of Science  
University of Giessen  
Giessen, WEST GERMANY

**Discussant**  
**Thomas Goernitz**  
Max Planck Institute  
Department of Physics  
Starnberg, WEST GERMANY

#### 2. The Importance of Prebiotic Porphyrins in Biopoiesis



**Alcira M. del C. Batlle**  
Director, C.I.P.Y.P. and Professor of  
Biochemistry  
Buenos Aires, ARGENTINA

**Discussant**  
**Bulent Atalay**  
Professor of Physics  
Mary Washington College  
University of Virginia  
Fredericksburg, Virginia

## Session II.

Friday, November 25, 5:00-7:00 pm

### 1. The Evolution of the Genetic Code



**Guido Pincheira**  
Professor of Genetics  
Faculty of Sciences  
University of Chile  
Santiago, CHILE

**Discussant**  
**Hideomi Nakahara**  
Assistant Professor  
Yamanashi Medical University  
Tokyo, JAPAN

### 2. The Emergence of Life and Man in the Inanimate Material World



**Peter Fong**  
Department of Physics  
Emory University  
Atlanta, Georgia

**Discussant**  
**Erwin Schopper**  
Professor of Physics, Emeritus  
University of Frankfurt  
Frankfurt, WEST GERMANY

## Session III-B.

Saturday, November 26, 2:30-4:30 pm

### 1. A Model of Man



**Camilo Vijil y Tardon**  
Formerly—Epidemiologist  
World Health Organization  
United Nations  
Presently—in Allingsås, SWEDEN

**Discussant**  
**Wilfried von Studnitz**  
Physician & Professor of Medicine  
University of Munich  
Munich, WEST GERMANY

## 2. Natural Selection and the Human Condition



**G. Ainsworth Harrison**  
Professor of Biological  
Anthropology  
University of Oxford  
Oxford, ENGLAND

**Discussant**  
**Claude A. Villee**  
Andelot Professor of Biological  
Chemistry  
Harvard University Medical School  
Boston, Massachusetts

## Session IV-B.

Saturday, November 26, 5:00-7:00 pm

### 1. Darwinian and Non-Darwinian Principles in Evolution



**Gerhard Vollmer**  
Professor of Philosophy of Science  
University of Gießen  
Gießen, WEST GERMANY

**Discussant**  
**Michael T. Ghiselin**  
Senior Research Fellow  
Dept. of Invertebrate Zoology  
and Geology  
California Academy of Sciences  
San Francisco, California

### 2. Charles Darwin on the Teleology of Evolution



**Jonathan Wells**  
Advisor, International Religious  
Foundation  
New York, New York

**Discussant**  
**Scott Moss**  
Research Fellow  
in Economics  
University of Manchester  
Manchester, ENGLAND

## Session V.

Sunday, November 27, 8:30-10:30 am

### 1. The Nature of Ritual and the Place of Ritual in Human Evolution



**Goran L. Aijmer**  
Research Institute of Social  
Anthropology  
University of Göteborg  
Göteborg, SWEDEN

**Discussant**  
**Jan Brogger**  
Professor of Social Anthropology  
University of Trondheim  
Trondheim, NORWAY

### 2. The Evolution of Science as an Element in the "Rise of the West"



**Gerard Radnitzky**  
Professor of Philosophy of Science  
University of Trier  
Trier, WEST GERMANY

**Discussant**  
**Anthony Flew**  
Distinguished Research Fellow  
Social Philosophy & Policy Center  
Bowling Green State University  
Bowling Green, Ohio

## Session VI.

Sunday, November 27, 11:00 am-1:00 pm

### 1. Traditional Ethics, Ethical Decision Theory and Evolutionary Ethics



**Werner Leinfellner**  
Professor of Philosophy of Science  
Technical University of Vienna  
Vienna, AUSTRIA

**Discussant**  
**Waldemar Molinski**  
Professor of Ethics  
University of Wuppertal  
Wuppertal, WEST GERMANY

### 2. Conceptual Evolution in Physics: A Case Study of the New Didactic System: Physics in 700 Experiments



**Michael Higltsberger**  
Professor of Physics  
Institute of Experimental Physics  
University of Vienna  
Vienna, AUSTRIA

**Discussant**  
**Robert Forchheimer**  
Associate Professor  
Dept. of Electrical Engineering  
Linköping University  
Linköping, SWEDEN



# Ethnocentrism vs. World Unity: Impacts on Socialization and Education

Political structures, public opinion, and traditional living patterns are confronted with rapid international changes in economics, communication, and science which are beyond any earlier experience. The changes have been the quickest in the area of technology, business and science, slower in the political, legal, and educational sectors, and slowest with regard to cultural patterns and ethnic traditions.

Thus cultures, states, and populations face almost irreconcilable clashes between competing value patterns, social demands, and political structures. On the one hand, ethnic traditions and/or national power structures have set off more than 130 major wars since 1945 and led to the enormous stream of refugees into the developing countries, Near East, and lately, into Eastern Europe. On the other hand, increasing globalization came inexorably to the attention of all with the oil-crises and nuclear non-proliferation agreements in the 70's, the indebtedness of the Third World and environmental problems—climaxing with Chernobyl—in the 80's.

Public reaction to the growing complexity, alienation, and uncertainty seems to be rather contradictory, since there is considerable response to global problems in terms of the many world peace and green peace movements, while on the other, there is a growing demand for identification in terms of ethnic traditions. Probably on-going con-

licts can only be limited or avoided if the need for cultural and/or ethnic identity and multicultural understanding and global peace can be satisfied simultaneously. Until now however, national education systems often stand as much in the way of ethnic diversification as global universalization.

In the face of these challenges the Committee tries to analyze:

1. Theories and research results with regard to behavior and learning developments, and, in addition, methods for a comparison of ethnic attitudes and perceptions;
2. National and regional specifics of ethnocentrism in education, in order to distinguish variables with regard to ethnocentrism and multiculturalism; and,
3. Factors that cut across ethnocentrism, such as the impact of science, media, and international organizations and strategies that work for multicultural and global understanding.

The discussions will cover the problems: how the need for ethnic identity and global understanding could be blended; which values, beyond human rights, might serve as a basis for this goal; and, to what extent national education can be expected to meet requirements for multicultural and international co-operation.



**Organizing Co-Chairman  
Tamas Kozma**  
*Head of the Department of  
Policy Analysis & Planning  
Hungarian Institute for  
Educational Research  
Budapest, HUNGARY*



**Organizing Co-Chairman  
Klaus Schleicher**  
*Director, Institute of  
Comparative Education  
University of Hamburg  
Hamburg, WEST GERMANY*

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## **Session I. Behavior and Learning Concepts: Theories and Research Results**

Friday, November 25, 2:30-4:30 pm

### **1. Psychological Aspects of Ethnic Mentality**



**Sandor Illyes**  
Director, Institute of Psychology  
University of Budapest  
Budapest, HUNGARY

### **2. Development of Identity and Morality—A Psychological Perspective**



**Robert Murray Thomas**  
Head  
Program in International Education  
Graduate School of Education  
University of California  
Santa Barbara, California

### **3. Political Socialization and the World Citizen**

**George Flouris**  
Chairman  
Dept. of Elementary Education  
University of Crete  
Rethymon, Crete, GREECE

and

**John Spiridakis**  
School of Education  
St. John's University  
Jamaica, New York

#### **Session I Analyst:**

**Matthias Doeblér**  
Research Assistant and Part-time Teacher,  
University of Hamburg  
Berlin, WEST GERMANY

## **Session II. Methods and Values for Comparison: Concepts and Strategies**

Friday, November 25, 5:00-7:00 pm

### **1. Ethnocentrism as a Social Need and Disease**



**Bernard Bernardi**  
Department of Anthropology  
University of Rome  
Rome, ITALY

### **2. Dimensions of Multiculturalism: The Emergence of a New Educational Ideology**



**Tamas Kozma**  
Head of the Dept. of Policy Analysis  
& Planning  
Hungarian Institute for Educational  
Research  
Budapest, HUNGARY

### **3. Universal Values vs. Local Preferences and Guilt Complexes: The Transition to Global Education**



**Alexander Shtromas**  
Department of Politics and  
Contemporary History  
University of Salford  
Salford, ENGLAND

#### **Session II Analyst:**

**Tadashi Fujita**  
Professor of Business Management  
International Christian University  
Tokyo, JAPAN

**Session III-A. Ethnocentrism in Education: Case Studies from Europe and America**

Saturday, November 26, 8:30-10:30 am

**1. Ethnocentrism in Education: A Comparative Analysis of Eastern and Western Problems in Europe**



**Miklos Szabolcsi**  
General Director  
National Institute of Pedagogy  
Budapest, HUNGARY

**2. Ethnocentrism in Education: Comparative Analysis, the Case of Latin America and the Central Caribbean**



**Orlando Albornoz**  
Professor of Sociology of Education  
Central University of Venezuela  
Caracas, VENEZUELA

**3. Ethnocentrism in Education in the Muslim World**



**Raphael Patai**  
Prof. of Anthropology, Emeritus  
Fairleigh Dickinson University  
Rutherford, New Jersey

**Session III Analyst:**

**Willy Wielemans**  
Dept. of Educational Sciences  
Catholic University  
Louvain, BELGIUM

**Session IV-A. Ethnocentrism in Education: Case Studies from Asia and Africa**

Saturday, November 26, 11:00 am-1:00 pm

**1a. Ethnocentrism and Education—Asian Perspective**



**Suresh Shukla**  
Professor of Education  
Central Institute of Education  
University of Delhi  
Delhi, INDIA

**1b. Education, Nationhood and a Place in the World Order**



**Suma Chitnis**  
Head, Unit for Research in the  
Sociology of Education  
Tata Institute of Social Sciences  
Bombay, INDIA

**2. Ethnocentrism in Education: the Case of Colonial Africa**



**Abel G. Ishumi**  
Professor of Educational Sociology  
Department of Education  
University of Dar Es Salaam  
Dar Es Salaam, TANZANIA

**Session IV Analyst:**

**Jan D. Knappert**  
Senior Fellow, School of Oriental  
& African Studies  
University of London  
London, ENGLAND

**Session V. What Leads Beyond  
Ethnocentrism: Multicultural  
Socialization and Education**

Sunday, November 27, 8:30-10:30 am

**1. Are Science and Ethnocentrism  
Compatible?**



**Nicholas Kurti**  
Professor of Physics, Emeritus  
University of Oxford  
Oxford, ENGLAND

**2. Ethnocentrism and Multiculturalism  
from a Unification Perspective**



**Lewis Rayapen**  
Research Fellow  
Professor's World Peace Academy  
New York, New York

**3. Mass Media and Popular Culture in the  
Perspective of Ethnocentrism**



**Nam Pyo Lee**  
School of Education  
Hanyang University  
Seoul, KOREA

**Session V Analyst:**

**Karol H. Borowski**  
Director  
Center for Suburban  
and Regional Studies  
Institute for Regional Studies  
Towson State University  
Towson, Maryland

**Session VI. Education Beyond  
Ethnocentrism: Experiences  
and Demands on Policy**

Sunday, November 27, 11:00 am-1:00 pm

**1. Public Opinion and "International  
Education": Challenges to Educational  
Policy**



**Klaus Schleicher**  
Director, Institute of Comparative  
Education  
University of Hamburg  
Hamburg, WEST GERMANY

**2. Education and Ethnocentrism: The  
Role and Impact of International  
Organizations**



**Teshome Wagaw**  
Professor of Education and  
Sociology  
University of Michigan  
Ann Arbor, Michigan

**3. Internationalizing Science Teaching by  
Media**



**Michael Hignatsberger**  
Institute of Experimental Physics  
University of Vienna  
Vienna, AUSTRIA

**Session VI Analyst:**

**Hector Cuadra**  
International Relations Center  
National Autonomous University of Mexico  
Mexico City, MEXICO

**Integrative Committee Summary: Strategies to  
Integrate Ethnic and Global Demands in Education  
in Order to Influence Social and Education Policy**

# Interdisciplinary Approaches to Development and Modernization

Religion has throughout the ages formed an integral part of the culture of man. Followers of different religions have shaped the patterns of their lifestyles after the norms and practices pronounced by their religions. However, after the emergence of science and technology as a dimension of the twentieth century culture, the lifestyles of different societies have undergone significant changes and many of the moral and ethical values have eroded. This, in turn, has resulted in creating, in many countries, an unfavorable attitude towards technological changes. The social scientists of developing countries have tended to identify the blind imitation of the Western technologies as a major factor for many social maladies. The use of the VCR (Video Cassette Recorder), which is otherwise an absolutely innocent innovation, for corrupting the morality of the youth, is an example. Many societies are really in a fix. Religion does not at all discourage the pursuit of science and technology. On the contrary, most of the revealed religions have laid the highest emphasis on the acquisition of knowledge. This is understandable, because without delving into the depths of the sciences, one cannot understand Nature and hence cannot appreciate the beauty and purpose of God's Creation.

The problem which has confounded many societies is: how to control the use of the new sciences and technologies? On the one hand, the needs of life can be satisfied with the applications of science and technology and yet on the other, technology should not be allowed to gain an upper hand and disturb the cultural and religious pivot of man's life. All this calls for a balanced interdisciplinary approach to development.

Development has erroneously been identified as only the infructuous production of manufactured goods, better varieties of crops and control of adverse environmental factors; the growth of man's capacity to choose between and adjust to development alteration has usually been undetermined.

Technologies have more often been thrust on people in the name of development. The social, cultural and religious aspects of man's life have usually not been considered as important facets of development. As a result, the introduction of technology as the sole determinant of development has not been enough to make nations achieve their social goals.

Thus, it is time a multidisciplinary study of development be undertaken with the involvement of scientists, technologists, development planners, social scientists and also theologians. Some case studies of development patterns in Western and Eastern societies (including both developed and developing countries) and their social impacts would presumably throw light on the directions in which the multidisciplinary aspects of development have to be considered.

The key idea would be to identify the technological needs and, at the same time, the manner in which these technologies should be used so that the lasting values which have been handed down to man through generations are not lost in the process of development. Some decisive criteria for striking a harmonious balance between technology and values must be found and adhered to.



**Honorary Chairman**  
**Marcelo Alonso**  
*President*  
*Technoconsult, Inc.*  
*Melbourne Beach, Florida*



**Organizing Chairman**  
**M. Shamsheer Ali**  
*Professor of Physics*  
*University of Bangladesh*  
*Dhaka, BANGLADESH*

## **Session I. Science and Technology Infrastructure of Developing Countries**

Friday, November 25, 2:30-4:30 pm

### **1. Perspectives on the International Transfer of Science and Technology**



**James R. Fleming**  
Science & Technology Studies  
Colby College  
Waterville, Maine

**Discussant**  
**Don Harter**  
Professor of Agriculture  
Education  
University of Idaho  
Moscow, Idaho

### **2. The Geographical Unification of the Sciences: Strengthening the Scientific Infrastructure in the Developing Countries**



**M.J. Moravcsik**  
Professor of Physics  
University of Oregon  
Eugene, Oregon

**Discussant**  
**Victor LaTorre**  
President  
Peruvian Institute of  
Nuclear Energy  
National University of Engineering  
Lima, PERU

## **Session II. Foreign Aid and National Development**

Friday, November 25, 5:00-7:00 pm

### **1. Whither Aid, Whither Development**



**Jamie Ayala**  
Executive Director  
Foundation for  
the Second Botanical Expedition  
Bogota, COLUMBIA

**Discussants**  
**Paul Jonas**  
Professor of Economics  
University of New Mexico  
Albuquerque, New Mexico

and

**Alan D. Poole**  
Energy Consultant  
University of Sao Paulo  
Sao Paulo, BRAZIL

## **2. Transfer of Technology**

**Eduardo De la Tijera**  
Director  
TEXNE, S.A.  
Mexico City, MEXICO

and

**Francisco Barnes**  
Director  
Faculty of Chemistry  
National University of Mexico  
Mexico City, MEXICO

**Discussant**  
**Naim Afghan**  
Boris Kidric Institute for  
Nuclear Physics  
Int'l Center for Heat and  
Mass Transfer  
Belgrade, YUGOSLAVIA

## **Session III-A. Science and Culture**

Saturday, November 26, 8:30-10:30 am

### **1. New and Emerging Sciences and Their Impact on Development and Culture**



**Hikoyuki Yamaguchi**  
Laboratory of Radiation Genetics  
Faculty of Agriculture  
University of Tokyo  
Tokyo, JAPAN

**Discussant**  
**Nobuyoshi Shimizu**  
Dept. of Molecular Biology  
School of Medicine  
Kelo University  
Tokyo, JAPAN

and

**Israr Ahmad**  
Professor of Physics  
Allgarh Muslim University  
Allgarh, INDIA

### **2. Astronomy: A Planetwide Perspective**



**N. Chandra Wickramasinghe**  
Department of Math & Physics  
Cardiff University  
Cardiff, WALES

**Discussant**  
**Raymond A. Lyttleton**  
Professor of Theoretical Astronomy  
Institute of Astronomy  
Cambridge, ENGLAND

## **Session IV-A. Science, Technology and the Basic Needs of Life**

Saturday, November 26, 11:00 am-1:00 pm

### **1. Nutrition Program for Pre-school Children—An African Experiment**



**Yusuf Ali Eraj**  
Member  
Kenya National Council of  
Science and Technology  
Nairobi, KENYA

**Discussant**  
**Norge Jerome**  
Director  
Office of Nutrition  
Bureau of Science & Technology  
U.S. Agency for International  
Development  
Washington, D.C.

### **2. Drug Policy, Medicine and Social Development**



**Nurul Islam**  
National Professor and  
Chairman  
Bangladesh Medical  
Research Council  
Dhaka, BANGLADESH

**Discussant**  
**Efrain Otero**  
Member of Board of COLCIENCIAS  
Former Minister of Health  
Bogota, COLOMBIA

## **Session V. Ecobalance and Technological Development**

Sunday, November 27, 8:30-10:30 am

### **1. Living in Harmony with Nature—A Case Study of Japan**



**Akira Miyawaki**  
Director  
Institute of Environmental  
Science & Technology  
Yokohama National University  
Yokohama, JAPAN

**Discussant**  
**Percy Johnson-Marshall**  
Professor Emeritus and Director  
Patrick Geddes Center for  
Planning Studies  
University of Edinburgh  
Edinburgh, SCOTLAND

## **2. A Secure Future: A Challenge for Development**



**Marcelo Alonso**  
President  
Technoconsult, Inc.  
Melbourne Beach, Florida

**Discussant**  
**Mariano Bauer**  
Director,  
University Energy Program  
Autonoma National University  
of Mexico  
Mexico City, MEXICO

## **Session VI. Science, Technology and Ethical Norms**

Sunday, November 27, 11:00 am-1:00 pm

### **1. Preservation of Flora and Fauna—A Moral Responsibility of Mankind**



**M. Salar Khan**  
Supernumerary Professor  
Department of Botany  
University of Dhaka  
Dhaka, BANGLADESH

**Discussant**  
**Andrew J. Reck**  
Professor and Chairman  
Department of Philosophy  
Tulane University  
New Orleans, Louisiana

### **2. Ethics of Having Access to Information and the Scientific Output of Developing Countries: A Case Study of India**



**Subbiah Arunachalam**  
Editor, Indian Journal of  
Technology  
Publications & Information  
Directorate  
New Delhi, INDIA

**Discussant**  
**Monowar Hossain**  
Distinguished Member  
Technical Staff  
Bell Laboratories  
Middletown, New Jersey

# East-West Perspectives on Spirit and Science

There is an increasing feeling among some people that the Eastern perspectives on nature, life and spirit may also contribute something of value to human welfare, and that the world cannot rely solely on Western science and technology which are basically reductionist in their attitudes and methods. It is also suggested by some that the various recent advances in the sciences themselves, in spite of the Western cultural assumptions in their procedures and foundations, may be opening up a view of reality hospitable to traditional Eastern spiritual perspectives. Also, in some quarters there is a growing disillusionment with the whole enterprise of science which is no longer regarded as obviously or exclusively, or even at all, a force for good, especially if science remains divorced from spiritual values.

Two very closely related remarks need to be made about the difference between the 'Eastern' perspective and the 'Western', and between the 'spiritual' and the 'scientific', keeping in view that in making such generalizations one has to be very mindful of the quotation marks in the various words. (1) In general, the East thinks, along with all spiritual traditions, that "It is the spirit that has the body," rather than the scientific (Western?) point of view that "It is the body that has the spirit." Vast philosophic

and cultural differences are implied by these expressions. (2) By and large, the scientific (Western?) motivation of an inquiry about the relationship between science and spirit seems to be "How can the spiritual energy be utilized in doing better science which will lead to more useful technology?" The spiritual (Eastern?) point of view more seems to be "How can science, like anything else, be of service to the spirit?" If these remarks are more or less representative, they indicate the vast gulf in the very starting point of the two major groups.

If the intellectuals, both of the East and of the West, do not endeavor to forge a higher synthesis of science and spirituality, of the Occident and the Orient, of modernity and tradition, this world-wide culture will be based on a very low common denominator, which amounts essentially to a lack of ethical standards and of spiritual values. One can hardly overestimate the difficulty of communication across cultures and disciplines, and also the urgent necessity for some understanding across these boundaries to be reached. Perhaps this committee can be a real catalyst for the development of such an understanding. After all, at least for some scientists, science itself has been a spiritual path.



**Organizing Chairman**  
**Ravi Ravindra**  
*Department of Comparative  
Religion and  
Department of Physics  
Dalhousie University  
Halifax, CANADA*

## Session I.

Friday, November 25, 2:30-4:30 pm

### 1. The Hindu Attitude to Knowledge and Nature



**R. Balasubramanian**  
*Director, Radhakrishnan Institute  
for Advanced Study in Philosophy  
University of Madras  
Madras, INDIA*

### 2. Science, Spirituality and Technology—Essential and Interdependent



**T.R. Anantharaman**  
*Professor of Metallurgy (retired)  
Institute of Technology  
Banaras Hindu University  
Varanasi, INDIA*

### 3. Does the West Need the East?



**Manuel B. Dy, Jr.**  
Department of Philosophy  
Ateneo de Manila University  
Manila, PHILIPPINES

**Session I Discussion Leader**  
**M. W. Padmasiri de Silva**

#### Discussants

**Nonna Slavinska-Holy**  
Faculty, Supervisor  
Post Graduate Center  
for Mental Health  
New York, New York

**Phillip Novak**  
Associate Professor  
Dept. of Philosophy  
and Religious Studies  
Dominican College  
San Rafael, California

### Session II.

Friday, November 25, 5:00-7:00 pm

#### 1. Science and Spirit: the Platonic Model



**Evangelhos Moutsopoulos**  
President  
Hellenic Society for  
Philosophical Studies  
Athens, GREECE

#### 2. Between Physics and Natural History



**Francis G. Nagasaka**  
Faculty of Foreign Languages  
Nanzan University  
Nagoya, JAPAN

#### 3. Lost Science



**R.W. Sharpe**  
Professor of Mathematics  
University of Toronto  
Toronto, Ontario, CANADA

### 4. A New Metaphysics in Support of Contemporary Physics: East-West Contributions



**Theodore Shimmyo**  
Assistant Professor of Theology  
Unification Theological Seminary  
Barrytown, New York

**Session II Discussion Leader**

**David Gooding**

#### Discussants

**Yong-Woon Kim**  
Professor of Mathematics  
Hanyang University  
Seoul, KOREA

**R.D. Gunaratne**  
Dept. of Philosophy &  
Psychology  
University of Peradeniya  
Peradeniya, SRI LANKA

### Session III-B.

Saturday, November 26, 2:30-4:30 pm

#### 1. The Holy Nothing versus the Quincunx of Knowledge: Is There a Reconciliation?



**Tor Ragnar Gerholm**  
Department of Physics  
University of Stockholm  
Stockholm, SWEDEN

#### 2. Science as a Spiritual Path: Michael Faraday's Apprenticeship



**David Charles Gooding**  
Senior Lecturer  
Science Studies Center  
University of Bath  
Bath, ENGLAND

#### 3. Is Contemporary Science Religiously Different from Classical Science?



**George Sudarshan**  
Director  
Institute of Mathematical Sciences  
Madras, INDIA  
and  
Dept. of Physics  
University of Texas  
Austin, Texas

### Session III-B. (continued)

Saturday, November 26, 2:30-4:30 pm

Session III-B Discussion Leader  
**Priscilla Murray**

#### Discussants

**Ruth Tiffany Barnhouse**  
Professor of Psychiatry and  
Pastoral Care  
Perkins School of Theology  
Southern Methodist University  
Dallas, Texas

**Lucien Penasse**  
Associate Professor  
Pasteur Institute  
Paris University  
Paris, FRANCE

### Session IV-B.

Saturday, November 26, 5:00-7:00 pm

#### 1. Contribution of East and West to Spirit-Science Unification



**Jean Charon**  
Physicist  
University of Paris  
Paris, FRANCE

#### 2. Brain Function and Culture



**Olga Quadens**  
Neurophysiology Laboratory  
University of Antwerp, RUCA  
Antwerpen, BELGIUM

#### 3. Science and the Siddharta



**Alfredo Lagmay**  
Prof. of Philosophy & Psychology  
University of Philippines  
Quezon City, PHILIPPINES

Session IV-B Discussion Leader  
**Richard W. Sharpe**

#### Discussant

**Atul Goel**  
Lecturer  
Dept. of Neurosurgery  
K.E.M. Hospital  
Parel, Bombay, INDIA

### Session V.

Sunday, November 27, 8:30-10:30 am

#### 1. The Unity of Science and Spiritual Knowledge: The Islamic Experience



**Osman Bin Bakar**  
Assistant Professor  
Faculty of Science  
University of Malaya  
Kuala Lumpur, MALAYSIA

#### 2. The Distance Between the Laboratory and Monastery



**M.W. Padmasiri de Silva**  
Chairman & Professor  
Dept. of Philosophy & Psychology  
University of Peradeniya  
Peradeniya, SRI LANKA

#### 3. Scientific Knowledge and Spiritual Understanding



**Priscilla Murray**  
Institute for the Integration  
of Spirit & Mind  
Halifax, Nova Scotia, CANADA

Session V Discussion Leader  
**Manuel B. Dy, Jr.**

#### Discussants

**G.C. Tripathi**  
Principal  
G.N. Jha Central Sanskrit  
Research Institute  
Allahabad, INDIA

**Henry O. Thompson**  
Prof. of Bible and Ministry  
Unification Theological  
Seminary  
Barrytown, New York

### Session VI.

Sunday, November 27, 11:00 am-1:00 pm

Presentations on the five sessions above by  
the five Discussion Leaders

### Summary Session

Sunday, November 27, 2:30-4:00 pm

"What Next?"

# Eco-Philosophy as a New Metaphysical and Cultural Reconstruction

In recent years we have witnessed various attempts to introduce integral or holistic approaches to our views of knowledge and of the world. It has been well recognized that, although atomistic and reductionist approaches of Western classical science have brought about brilliant results, this has been accomplished at a price. The price is a radical disjunction of science from values, and often of man from the cosmos.

New holistic approaches have been introduced in physics (David Bohm, Jean Charon, and others), in psychology (Ken Wilbur, etc.), and in other disciplines. Quite often the return to a holistic perspective has been carried out by borrowing concepts and ideas from Eastern systems of thought, such as Buddhism and Taoism, which by their very nature are holistic and global.

Until recently, Western philosophy (particularly of the analytical-empirical persuasion) has gone on, charmed by its own analytical refinements, quite oblivious of the need for integrative-holistic perspectives. Fortunately, during the last decade, a new breed of philosophers has emerged who are increasingly sensitive to the holistic and integrative dimensions of knowledge and the universe. There is a new metaphysical reconstruction going on within the domain of philosophy itself. This reconstruction is partly in response to the challenge of E.F. Schumacher, who in his classical book, *Small is Beautiful* (1973), emphasized that the most fundamental task of our times is not so much the creation of an alternative technology or an alternative economics but a "metaphysical and religious reconstruction," which would provide a matrix for integration and healing.

The common thread of the new metaphysical reconstruction is ecology, which is the overall organizing concept and also a metaphysical metaphor of wholeness, replacing the mechanistic metaphor of the clock. Since ecology has become a rallying point, the name for the new metaphysical reconstruction is Eco-Philosophy.

There are at present at least four different but related schools of Eco-Philosophy:

1. Ecosophy (Arne Naess)
2. Deep Ecology (Sessions, Devall, etc.)
3. The Theology of Earth (Thomas Berry)
4. Eco-Philosophy (Henryk Skolimowski)

In brief, Eco-Philosophy is the first major philosophical departure during the last 50 years. It is a philosophy which consciously and deliberately attempts to be global and comprehensive. It is a philosophy which relates to older traditions, including Eastern traditions.

The overall tenor of Eco-Philosophy is one which is in congruence with both themes of ICUS—the unity of knowledge and the resurrection of fundamental values which are indispensable for a meaningful society and meaningful lives.

The time is now ripe to examine the various tenets and schools of Eco-Philosophy during one of the ICUS meetings. The main objective of the committee, entitled "Eco-Philosophy as a New Metaphysical Reconstruction," would be to bring together the various scholars and thinkers prominent in developing ecology-oriented philosophy, and in the end, to produce a book which would be a statement of the entire emerging field.



**Honorary Chairman**  
**Alexander King**  
*President*  
*Club of Rome*  
*Paris, FRANCE*



**Organizing Chairman**  
**Henryk Skolimowski**  
*Professor of Philosophy*  
*Department of Humanities*  
*University of Michigan*  
*Ann Arbor, Michigan*

## Session I.

Friday, November 25, 2:30-4:30 pm

### 1. Three Environments of Man



**Alexander King**  
President  
The Club of Rome  
Paris, FRANCE

### 2. Eco-Cosmology As the Foundation of the New Cultural Reconstruction



**Henryk Skolimowski**  
Professor of Philosophy  
Department of Humanities  
University of Michigan  
Ann Arbor, Michigan

**Discussant**  
**Bolof Stridbeck**  
Department of Philosophy  
University of Göteborg  
Göteborg, SWEDEN

## Session II.

Friday, November 25, 5:00-7:00 pm

### 1. Making Peace with Nature



**Patsy Hallen**  
University Lecturer  
School of Social Inquiry  
Murdoch University  
Murdoch, W. AUSTRALIA

**Discussant**  
**Bina Gupta**  
Department of Philosophy  
University of Missouri  
Columbia, Missouri

### 2. Ecovalues-Ecovision-Ecoaction: The Healing and Evolution of Person and Planet



**Stuart B. Hill**  
Director  
Ecological Agriculture Projects  
MacDonald College of McGill  
University  
Ste.-Anne of Bellevue, CANADA

**Discussant**  
**Jane Noble**  
President  
Leadership Initiatives, International  
Santa Barbara, California

## Session III-A.

Saturday, November 26, 8:30-10:30 am

### 1. Eco-Politics and the Global Ecumene



**Ben Hourani**  
Dept. of Political Science  
Eastern Michigan University  
Ann Arbor, Michigan

**Discussant**  
**Heidi Hautala**  
Chairperson of Green Party and  
Dept. of Horticulture  
University of Helsinki  
Helsinki, FINLAND

### 2. Give the Future a Chance: Moving Towards an Ecological Economy



**Pierre Fornallaz**  
Professor of Mechanical  
Engineering, Emeritus  
Swiss Federal Institute of  
Technology  
Zurich, SWITZERLAND

**Discussant**  
**Alvin Weinberg**  
Distinguished Fellow  
Institute for Energy Analysis  
Oak Ridge Associated Universities  
Oak Ridge, Tennessee

## Session IV-A.

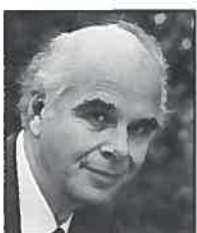
Saturday, November 26, 11:00 am-1:00 pm

### 1. Towards a New Science—A Critical Appraisal of Scientific Knowledge



**David Lorimer**  
Director  
Scientific and Medical Network  
Gloucester, ENGLAND

### 2. The Eco-Integrated Global Society



**Ervin Laszlo**  
Founder & Chairman  
General Evolution Research Group  
Pisa, ITALY

**Discussant**  
**Sven Bjork**  
Director, Forum 2000 and  
Senior Consultant  
Dept. of Psychiatry  
Ullevaal University Hospital  
Oslo, NORWAY

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## Session V.

Sunday, November 27, 8:30-10:30 am

### 1. Buddhist Ethical Ecology



**Chatsumarn Kabilsingh**  
Associate Professor  
Faculty of Liberal Arts  
Thammasat University  
Bangkok, THAILAND

### 2. Ecological Spirituality: Its History and Meaning



**Donald P. St. John**  
Department of Religion  
Moravian College  
Bethlehem, Pennsylvania

### 3. The Way of Ecopiety: Confucianism, Taoism and Zen



**Hwa Yol Jung**  
Department of Political Science  
Moravian College  
Bethlehem, Pennsylvania

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#### Session V Discussant

**Alexis Lakusta**  
Free Lance Artist  
Menlo Park, California

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## Session VI.

Sunday, November 27, 11:30 am-1:30 pm

### 1. Ecological Considerations of Unification Thought



**David Carlson**  
Assistant Professor of World  
Religions  
Unification Theological Seminary  
Barrytown, New York

**Discussant**  
**Andrew Wilson**  
Director of Publications  
International Religious Foundation  
New York, New York

and

**A. Durwood Foster**  
Professor of Christian Theology  
Pacific School of Religion  
Berkeley, California

### 2. Toward the Ecophilosophical Fruition of Biblical Faith



**A. Durwood Foster**  
Professor of Christian Theology  
Pacific School of Religion  
Berkeley, California

**Discussant**  
**Conrad Bonifazi**  
Emeritus Professor of  
Interdisciplinary Studies  
Humboldt State University  
Arcata, California

# Neurobiology in Relation to Global Ideology and Values

The present cultural revolution is creating a world characterized by extraordinary scientific advances: duration of life has been increased, personal health has been improved and old age delayed, perceptions have been enhanced with sensors of many kinds, and activities are being expanded with new energies, machines, and resources.

Unfortunately, the increasing materialism is not balanced by similar ideological and spiritual developments. The use of science is often perverted and human beings have advanced too little in their happiness and freedom. We are experiencing crises of goals and values.

The theme of our Committee is that a search for new understanding and for the discovery of new solutions may be based on the biological unity of all human beings. We know that the anatomy and physiology of most cells and organs are very similar in all people. Blood may be transfused from a black to a white man. A heart may be transplanted from a Jew to an Arab. Antibiotics work in a similar way in the Soviet Union and in the United States. Similar basic behavioral motivations—pleasure and punishment—are also shared by mankind.

Advances in neurobiological knowledge are modifying our traditional value systems and influencing our concepts of ego structure, personal identity, freedom of action, individual and social motivations, and especially the purpose of life. The search for the elements of biological unity and for their practical application in a new system of values has no ideological, racial, or national barriers. It lacks doctrinal rigidity and will permit the application of similar principles, without distinctions, to all human beings. Structuring of new frames of mental reference for human behavior should be interdisciplinary and international, leading to practical individual and social applications.

Research concerning brain functions is one of the most active fields in contemporary scholarship. Special interest is placed on memory mechanisms, on the structuring of the infantile brain, on feature extracting neurons, on holographic representations, motivations of learning and behavior, and many other aspects of cerebral activities.

Among the ICUS goals and perspectives, Reverend Moon has emphasized the importance of "the principles which can give rise to a comprehensive world view." The interrelation has also been mentioned between external aspects of material and physical dimensions and internal aspects of intuitive and spiritual dimensions, from which purpose and values are derived. Special importance has been given to "insights from science, religion, and culture... for a new culture, transcending the national, religious, racial, and ideological biases within present cultures." Addressing these concepts and hopes, modern neurobiology could provide a theoretical and practical basis for the better understanding, learning, and expression of human behavior.

In our Committee, presentation of a brief review of neurobiological advances and their relevance to the understanding of present identity, personality and values, will be followed by a discussion of future physiological limits and possibilities. This leads us to new proposals for the structuring of the human brain with emphasis on individual happiness, social productivity, and integration.

The main aspects of the program will be an attempt to formulate guidelines for a theoretical and practical basis of a comprehensive world view. Particular attention will be paid to options and consequences of individual behavior. The program will be ambitious in its universal implications, being at the same time significant for personal structuring, emotional setting, and behavioral performance.



**Honorary Chairman**  
**Kenneth Mellanby**  
*Director Emeritus*  
*Monk's Wood Experimental*  
*Station*  
*Huntingdon, ENGLAND*



**Organizing Chairman**  
**Jose M.R. Delgado**  
*Professor and Director*  
*Center for the Study of*  
*Neurobiology*  
*Madrid, SPAIN*

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## **Session I. Neurobiological Basis of Values**

Friday, November 25, 2:30-4:30 pm

### **1. Neurobiology of Global Ideology and Values**



**Jose M.R. Delgado**  
Professor and Director  
Center for the Study of  
Neurobiology  
Madrid, SPAIN

### **2. Regulatory Systems and Values**



**Ljubisav Rakic**  
Professor of Biochemistry &  
Neurobiology  
Clinical Center  
University of Belgrade  
Belgrade, YUGOSLAVIA

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#### **Session I Discussant: Psychological Birth and Its Neurological Roots**

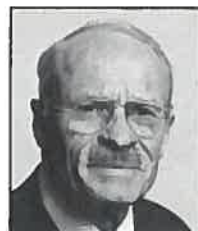
##### **Adriana Guareschi-Cazzullo**

Director  
Institute of Child Neuropsychiatry  
University of Milan  
Milano, ITALY

## **Session II. Diversity of Values**

Friday, November 25, 5:00-7:00 pm

### **1. Ethology and Social Change**



**John P. Scott**  
Regents Professor of Psychology,  
Emeritus  
Bowling Green State University  
Bowling Green, Ohio

## **2. Values in a "Value Free" Nature**



**R.K. Mishra**  
Vice Chancellor  
North-Eastern Hill University  
Institute for Self-Organizing  
Systems & Biophysics  
Shillong, INDIA

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#### **Session II Discussant: The Mind of Immunity**

##### **Albert Rosenfeld**

Adjunct Assistant Professor  
University of Texas  
Medical Branch  
Galveston, Texas

## **Session III-A. Evolution of Ideologies and Values**

Saturday, November 26, 8:30-10:30 am

### **1. Integration of Biologically Based Values and Other Universally Human Values**



**Gordon L. Anderson**  
Secretary-General  
Professors World Peace Academy  
New York, New York

### **2. New Systems of Values and Ideologies: A General Systems Approach to Find a Framework for the Future**



**Rafael Rodriguez-Delgado**  
Vice-President  
Spanish Society of General  
Systems  
Madrid, SPAIN

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#### **Session III Discussant:**

##### **Maria Colavito**

Assistant Professor  
English and Humanities  
State University of New York  
Farmingdale, New York

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**Session IV-A. Global Purpose of Life**  
Saturday, November 26, 11:00 am-1:00 pm

**1. Religion and the Meaning of Life**



**Paul Badham**  
Chairman  
Religion & Ethics Subject  
Committee  
Saint David's University College  
University of Wales  
Lampeter, Dyfed, WALES

**2. The Biology of Religion: The Neural Connection Between Science and Mysticism**



**Antonio T. de Nicolas**  
Department of Philosophy  
State University of New York  
Stony Brook, New York

**Session IV Discussant:**

**Francis Clark**  
Director of Post-Graduate  
Research in Religion  
The Open University  
London, ENGLAND

**Session V. Search for New Solutions**  
Sunday, November 27, 8:30-10:30 am

**1. Toward a New Techno-Cultural Approach: Are Man-Machine Values Possible?**



**Rene Berger**  
President  
International Association for  
Video in Arts and Culture  
Lausanne, SWITZERLAND

**2. Social Values and Governmental Budgets**



**Francisco Parra-Luna**  
Professor of Sociology  
Complutense University of Madrid  
Madrid, SPAIN

**Session V Discussant: Statistical Sciences and Fuzziness in Relation to the Brain**

**Francisco Azorin P.**  
Member  
Spanish Royal Academy of Sciences  
Madrid, SPAIN

**Session VI. Guidelines for Global Values**  
Sunday, November 27, 11:30-1:30

**General Discussion**

**Session VI Discussants:**

**Fernando Elzaburu**  
Board of Directors of the Spanish Chapter  
of the Club of Rome  
Madrid, SPAIN

and

**Samuel Corson**  
Department of Psychiatry  
Ohio State University  
Columbus, Ohio

# The Ethics of Nuclear Deterrence

Nuclear deterrence—based on the threat to inflict catastrophic harm upon one's enemy—has been a major hallmark of the post-World War II international relations. Despite the fact that the threat of massive destruction has never had to be carried out, widespread uneasiness, if not discontent, with its continued prominence in our lives abounds. This concern results in part from the inability of anyone to credibly guarantee a fail-safe future in a world made up of thousands of nuclear warheads and fallible human beings. It also results from a questioning of the fundamental moral principles encompassed in its application.

Nuclear deterrence is particularly susceptible to criticism on deontological terms. Can one morally countenance a policy that places the lives of millions of innocent civilians in jeopardy, not only in those countries practicing nuclear deterrence but also in those countries outside of super-power disputes? And how moral is this precarious policy when fundamental human security concerns become intertwined with foreign policy objectives? The dilemmas of nuclear deterrence do not, of course, lend themselves to easy resolution. Some who have thought deeply about nuclear deterrence come reluctantly to the conclusion that there is no feasible alternative to it in our imperfect world. They, then, seek to identify the conditions or terms under which nuclear deterrence can at least be tolerable, if not unquestionably moral. Others, however, despair of ever adequately rationalizing nuclear deterrence. Their

prescription is to find an acceptable alternative to nuclear deterrence even if it is fraught with its own uncertainty and danger.

The purpose of Committee VII of ICUS XVII is to bring together scholars of differing perspectives and backgrounds in order to provide a sense of future direction. Papers will be presented bearing on four specific subject areas within the overall theme of "The Ethics of Nuclear Deterrence." These four subject areas are:

1. An Overview of the Health, Strength and Resiliency of Nuclear Deterrence Today
2. Theological Perspectives on Just War and Nuclear Deterrence
3. Values and Nuclear Deterrence
4. Defenses as an Alternative to Nuclear Deterrence

Given the diversity of views on this subject, it is unlikely that a single, unified position will be forthcoming. What we can seek, however, is to clarify where differences of opinion exist, why they exist, and explore how we can cope with these differences in our interdependent world. Since we are all potential victims, as well as beneficiaries of nuclear deterrence, every world citizen has a legitimate stake in assessing the morality and efficacy of nuclear deterrence.



**Honorary Chairman**  
**Morton A. Kaplan**  
*Department of Political  
Science  
University of Chicago  
Chicago, Illinois*



**Organizing Chairman**  
**Jack Barkenbus**  
*Deputy Director  
Institute for Energy Analysis  
Oak Ridge Associated  
Universities  
Oak Ridge, Tennessee*

## **Session I. Challenges to Deterrence**

Friday, November 25, 2:30-4:30 pm

### **1. The Attack on Deterrence: Reflections on Morality**



**Adam Garfinkle**  
Political Studies Program  
Coordinator  
Foreign Policy Research Institute  
Philadelphia, Pennsylvania

**Discussant**  
**Morton Kaplan**  
Dept. of Political Science  
University of Chicago  
Chicago, Illinois

### **2. Deterrence, Defense and the Sanctification of Hiroshima**



**Alvin M. Weinberg**  
Distinguished Fellow  
Institute for Energy Analysis  
Oak Ridge Associated Universities  
Oak Ridge, Tennessee

**Discussant**  
**Frederick Seitz**  
Former President  
Rockefeller University  
New York, New York

## **Session II. Theological Perspectives on Just War and Nuclear Deterrence**

Friday, November 25, 5:00-7:00 pm

### **1. The Ethics of Nuclear Deterrence: A Roman Catholic Viewpoint**



**Brother Austin David**  
Special Assistant to the  
Secretary General  
Catholic Near East  
Welfare Association  
New York, New York

**Discussant**  
**Viqar A. Hamdani**  
President  
World Muslim Congress  
New York, New York

### **2. The Ethics of Nuclear Deterrence: Developing an Ethics of Means**



**Matthew Francis Murphy**  
U.S. Arms Control and  
Disarmament Agency  
Washington, D.C.

**Discussant**  
**John Kelsay**  
Dept. of Religion  
Florida State University  
Tallahassee, Florida

## **Session III-B. Defenses as an Alternative to Nuclear Deterrence**

Saturday, November 26, 2:30-4:30 pm

### **1. Moving to Defense Dominance: Why Benefits Should Outweigh Costs**



**Erich H. Weede**  
Dept. of Sociology  
University of Cologne  
Cologne, WEST GERMANY

**Discussant**  
**Desmond McForan**  
Consultant Analyst  
International Political and  
Economic Affairs  
West Midlands, ENGLAND

### **2. The Nuclear Deterrence Dilemma: In Search of a Way Out**



**Enrico Jacchia**  
Director, Rome Center for Strategic  
Studies  
Free University  
Rome, ITALY

**Discussant**  
**Motoyasu Satoh**  
Assistant Professor  
Plasma Physics Laboratory  
Kyoto University  
Kyoto, JAPAN

**Session IV-B. Defenses as an  
Alternative to Nuclear  
Deterrence (continued)**

Saturday, November 26, 5:00-7:00 pm

**1. Philosophical Discourse on Nuclear  
Deterrence and Morality**



**Waldemar Molinski**  
Professor of Ethics  
University of Wuppertal  
Wuppertal, WEST GERMANY

**Discussant**  
**Kazem Omidvar**  
Space Scientist  
Greenbelt, Maryland

**2. Defense Superiority—The Basis for  
Security and World Order**

**Horst Afheldt**  
Max-Planck Institute  
Starnberg, WEST GERMANY

**Discussant**  
**Jack Barkenbus**  
Deputy Director  
Institute for Energy Analysis  
Oak Ridge Associated  
Universities  
Oak Ridge, Tennessee

**Session V. Values and Nuclear  
Deterrence**

Sunday, November 27, 8:30-10:30 am

**1. Morality, Ideological Struggle and  
Nuclear Deterrence**



**Thomas G. Walsh**  
Director  
International Religious Foundation  
New York, New York

**Discussant**  
**Ninian Smart**  
Professor of Religious Studies  
University of Lancaster  
Lancaster, ENGLAND

**2. Nuclear Deterrence: Some Ethical and  
Religious Issues**



**Richard Rubenstein**  
Lawton Distinguished Professor  
of Religion  
Florida State University  
Tallahassee, Florida

**Discussant**  
**Jacquelyn Ann Kegley**  
Dept. of Philosophy and  
Religious Studies  
Outstanding Professor  
California State University  
Bakersfield, California

**Session VI. Nuclear Deterrence in  
Developing Countries**

Sunday, November 27, 11:00 am-1:00 pm

**1. Transitions to a Moral Political Order**



**K. Subrahmanyam**  
Former Director  
Institute for Defense  
Studies and Analysis  
New Delhi, INDIA

**Discussant**  
**P.K. Menon**  
Professor of Law  
University of the West Indies  
Bridgetown, BARBADOS

# Agenda

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## **Seventeenth International Conference on the Unity of Sciences**

**November 24-27, 1988  
Stouffer Concourse Hotel  
Los Angeles, California**



### **The Symbol of ICUS**

The symbol of ICUS employs at its center the symbol of ICF. This latter symbol portrays the give and take relation and interdependence among all phenomena, symbolized by two circular arrows. The form of a man and woman, which also symbolizes the unity of "heaven and earth" or the spiritual and material cultures, revolve around a common center, or standard of value. The extended arms represent the tips of writing pens, since writing is the medium of cultural expression and interaction.

### **Thursday, November 24**

- 10:00 am Registration Opens**  
Coat Room-Lobby
- 11:00–3:00 pm Thanksgiving Buffet**  
Concourse A, B
- 7:30 pm Welcoming Reception**  
Ballroom B

### **Friday, November 25**

- 7:00 am Breakfast**  
Concourse A, B
- 9:00 am Opening Plenary Session**  
Ballroom A, B, C
- 10:00 am Refreshment Break**  
Ballroom Foyer
- 10:30 am Plenary Address**  
**"Evolution of the Human Brain:  
Creation of the Conscious Self"**  
*Str John Eccles*  
Ballroom B, C
- 12:00 am Introductory Committee Sessions**  
Kennedy, La Guardia, Logan,  
Midway, National, O'Hare, Orly
- 1:00 pm Luncheon**  
Concourse A, B
- 2:30 pm Session 1**  
Kennedy, La Guardia, Logan,  
Midway, National, O'Hare, Orly
- 4:30 pm Refreshment Break**  
Ballroom Foyer
- 5:00 pm Session 2**  
Kennedy, La Guardia, Logan,  
Midway, National, O'Hare, Orly
- 7:00 pm Dinner**  
Concourse A, B

## Saturday, November 26

- 7:00 am Breakfast**  
Concourse A, B
- 8:30 am Session 3a**  
La Guardia, Logan, National, O'Hare  
Committees II (Kozma/Schleicher),  
III (Ali), V (Skolimowski),  
VI (Delgado)
- 10:30 am Refreshment Break**  
Ballroom Foyer
- 11:00 am Session 4a**  
La Guardia, Logan, National, O'Hare  
Committees II (Kozma/Schleicher),  
III (Ali), V (Skolimowski),  
VI (Delgado)
- 1:00 pm Luncheon**  
Concourse A, B
- 2:30 pm Session 3b**  
Kennedy, Midway, Orly  
Committees I (Lowenhard), IV  
(Ravindra), VII (Barkenbus)
- 4:30 pm Refreshment Break**  
Ballroom Foyer
- 5:00 pm Session 4b**  
Kennedy, Midway, Orly  
Committees I (Lowenhard), IV  
(Ravindra), VII (Barkenbus)
- 7:00 pm Dinner**  
Concourse A, B
- 8:30 pm Plenary Address**  
**"A Physicist's View of Living  
Systems"**  
Frederick Seltz  
Ballroom B

## Sunday, November 27

- 7:00 am Breakfast**  
Concourse A, B
- 8:30 am Session 5**  
Kennedy, La Guardia, Logan, Midway,  
National, O'Hare, Orly
- 10:30 am Refreshment Break**  
Ballroom Foyer
- 11:00 am Session 6**  
Kennedy, La Guardia, Logan, Midway,  
National, O'Hare, Orly
- 1:00 pm Luncheon**  
Concourse A, B
- 2:30 pm Summary Session**  
Kennedy, La Guardia, Logan, Midway,  
National, O'Hare, Orly
- 4:00 pm Closing Plenary Session**  
Concourse A, B
- 6:00 pm ICF Reception**  
Ballroom Foyer
- 7:00 pm Farewell Banquet**  
Ballroom A, B, C

## Monday, November 28

- 5:00 am Continental Breakfast**  
(early departures)  
Ballroom Foyer
- 7:00 am Breakfast**  
Concourse A, B

# ICUS: Statement of Purpose

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## An Interdisciplinary Academic Forum

The International Conference on the Unity of the Sciences, (ICUS) is an interdisciplinary academic forum dedicated to examining the important issues confronting our contemporary world. ICUS is sponsored by the International Cultural Foundation, Inc. (ICF), which is a non-profit organization set up to promote academic, scientific, religious and cultural exchange among peoples of the world. ICF was founded in 1968 by the Reverend Sun Myung Moon.

Starting in 1972 with 20 participants, ICUS has continually expanded its scope, while also deepening its relationship with the worldwide academic community. During its tenure, the conference has come to be recognized as a forum for scholars and scientists committed to addressing issues of fundamental concern to humanity. ICUS now has a global network of cooperating scholars. In the words of Dr. Alexander King, President of the Club of Rome, "ICUS is the only world occasion where scholars from diverse disciplines can come together and discuss mutual interactions in their work as a multidisciplinary attack on global problems."

In addition to the annual meeting, ICUS also has an impressive and expanding publication program. ICUS Books includes volumes that evolve from conference committees as well as non-conference single-authored manuscripts. Moreover, the International Journal on the Unity of the Sciences, dedicated to publishing articles that reflect ICUS' concern with interdisciplinary studies and values, is in the process of becoming a significant and unique contribution to the academic community.

## The Challenge

In our common effort to build a better future for all peoples, there is little question but that we face significant and even discouraging challenges. Many scholars and scientists, of course, devote themselves to exploring and finding solutions to the most pressing global concerns.

Breakthroughs in science have contributed greatly to our knowledge of the world and to our understanding of and ability to deal with disease, famine, over-population, under-development and environmental pollution. Yet despite advances in science, humanity is presently confronted with grave dangers, some of which result from the

often unintended but harmful side effects of technological applications of scientific knowledge.

At the same time, the problems which humanity now faces are not merely of a material or technical nature. As we know, it is oftentimes the more cultural and ethical factors which serve as the decisive forces in creating success or failure for the world's peoples. These same factors, however, are not generally understood as being easily integrated with a scientific worldview.

The global challenge to scholars, as understood in the ICUS perspective, is multi-dimensional. On the one hand, there is the need to understand and contribute to the possibilities for a fuller and more meaningful human life for all, by providing tools for comprehending and averting life-threatening situations. At the same time, ICUS also sees the global challenge as one that requires a transformation of the very practices by which the academic community acquires knowledge and seeks to address these challenges. This transformation involves not only the effort to integrate science and values, but also the commitment to a cooperative, interdisciplinary approach to inquiry.

## Facing the Challenge

ICUS was founded in order to squarely face the challenge discussed above. This founding spirit includes the firm conviction that the world's scientists and scholars have a great potential to substantially contribute to the progress and wellbeing of humanity. ICUS was also established in order to foster the participation of the academic community in an international, interdisciplinary dialogue which considers the possibility and promise of an integrated and non-exclusive worldview founded on the premise of absolute, universal values.

In stating this underlying purpose, ICUS recognizes that the premise of absolute values may not be accepted by all, or even a majority, of participants. Nevertheless, it is possible to identify certain ennobling values that have inspired people over the ages, such as the pursuit of truth, beauty, and goodness—ideals that benefit all of humanity. The clarification of these shared values and their implications is worthy of serious study, whether or not these values are presumed a priori to be absolute. If scholars are to be able to chart a promising course for humanity's fu-

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ture, scientific knowledge must be related to values.

ICUS provides scholars with a rare opportunity to discuss timely issues in the company of a distinguished, international group of colleagues. As ICUS committees address problems of global concern, there is a concerted effort to extend the inquiry beyond conventional disciplinary limits. When, for example, topics such as development or education are considered, a variety of perspectives are included, such as technical, theoretical, philosophical and ethical orientations. In this way, a more cooperative and comprehensive analysis can be made. Indeed, much of the distinctiveness and importance of ICUS resides in the fact that it is an international forum which examines topics in an interdisciplinary way and with paramount attention given to the factor of values.

ICUS participants are encouraged to use the resources at their disposal to discuss and contribute to the achievement of an improved understanding of our changing world. In this respect, science is understood as having a significant role to play, both as observer and participant, in contemporary processes of world transformation.

### **A Distinctive Approach to Scientific Inquiry**

From the observations discussed above, it follows that there are two fundamental criteria which underlie the approach which ICUS committees take in considering particular topics such as the origin and nature of the universe, biological evolution, biomedical ethics, economic development, environmental studies, education, or the comparative study of worldviews. First of all, ICUS is characterized by an interdisciplinary and unified approach to inquiry. This "Unity of Knowledge" criterion helps ICUS either to avoid the pitfalls or to move beyond the over-specialization and fragmentation which may characterize mono-disciplinary studies. Secondly, with its "Science and Values" criterion, ICUS underscores the centrality of values as they operate both in the practice of science and in the subject matter of science. ICUS thereby emphasizes the need for an integration of scientific practices with a value perspective.

Committees with a "Unity of Knowledge" focus consider specific topics with a comprehensive

analysis, relying on the input from many different disciplines. At the same time, a committee might take upon itself the task of exploring the very desirability and possibility of obtaining a "Unity of Knowledge" perspective: that is, scientific methodology itself may be examined. Committees that have a "Science and Values" focus reflect on the philosophical, religious, cultural or ethical issues that are relevant either to some particular form of scientific inquiry or to some area of scientific application, such as health care or the environment.

Apart from these characteristics, each ICUS meeting also seeks to address an overall conference theme. Past conference themes have included, "The Responsibility of the Academic Community in the Search for Absolute Values," "Modern Science and Moral Values," and "Absolute Values and the New Cultural Revolution." These have encouraged both the examination of the profound changes—changes related to advancing technology or modernization, as well as cultural flux—in our world and the effort to responsibly address global problems in a way that leads to the material and spiritual betterment of all people.

### **The Participation of Scholars**

ICUS is dedicated to a continuing study, in an atmosphere of complete academic freedom, of the underlying themes of the "Unity of Knowledge" and "Science and Values." Participants in ICUS come from a variety of nationalities, ethnic backgrounds, religions and cultural traditions. Thus, while participants' interests and expertise overlap to a degree with the vision expressed by the Founder, this overlap is generally only partial. The sponsors of ICUS do not expect participants to accept more of the Founder's vision than they in good conscience can. While many ICUS participants may be active in various other causes and activities, ICUS is completely independent of all other organizations, programs or political movements.

In summary, ICUS' purpose is to investigate with full academic freedom the enduring themes of the "Unity of Knowledge" and "Science and Values," and to study as scholars the scientific as well as the ethical and social implications of the specific themes of the conference.

# A Short History of ICUS

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The International Conference on the Unity of the Sciences (ICUS) arises from the commitment of the Reverend Sun Myung Moon to create an integrated worldview which can serve as the basis for a peaceful, harmonious future. Only such a worldview can provide order to human knowledge and a resolution of conflicting value premises.

Hence, the two enduring themes of ICUS—"Unity of the Sciences" and "Absolute Values"—have been raised as a challenge to stimulate the research and creativity of the world's scientists and scholars.

Starting in 1972 with 20 participants, ICUS year by year expanded its scope as it deepened its relationship with the worldwide academic community. This growing phase culminated with the historic Tenth ICUS, which convened 808 participants from over 100 countries in Seoul,

Korea in 1981. By this time ICUS had gained recognition from the world academic community as being truly unique as an interdisciplinary, international gathering of scholars and scientists addressing issues of fundamental concern to humanity.

Now a worldwide network of cooperating scholars has been established and, together with ICUS, several other ICF programs are helping to sustain this network. Thus ICUS is presently moving toward smaller conferences. More focused attention is being placed on publishing committee manuscripts that contribute to the two fundamental ICUS themes, and enhance the cross-disciplinary dialogue.

## Conference Chronology

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**Edward Haskell**

*Chairman, Council for Unified Research and Education*  
**ICUS I (1972)**  
Moral Orientation of the Sciences  
20 participants from 8 nations



**Nobusige Sawada**

*President, Japanese Association of Philosophy of Science*  
**ICUS II (1973)**  
Modern Science and Moral Values  
60 participants from 17 nations



**Lord Adrian**

*Professor of Physiology*  
*Nobel Laureate*  
**ICUS III (1974)**  
Science and Absolute Values  
128 participants from 28 nations



**Robert S. Mulliken**

*Distinguished Research Professor of Chemical Physics*  
*Nobel Laureate*  
**ICUS IV (1975)**  
The Centrality of Science and Absolute Values  
340 participants from 57 nations



**Sir John Eccles**

*Distinguished Professor of Physiology and Biophysics  
Nobel Laureate*

**ICUS V (1976)**

The Search for Absolute Values: Harmony Among  
the Sciences

360 participants from 53 nations

**ICUS VI (1977)**

The Search for Absolute Values in a Changing World  
400 participants from 50 nations



**Eugene P. Wigner**

*Emeritus Professor of Physics  
Nobel Laureate*

**ICUS VII (1978)**

The Re-evaluation of Existing Values and the Search  
for Absolute Values

450 participants from 60 nations

**ICUS VIII (1979)**

The Responsibility of the Academic Community in the  
Search for Absolute Values

485 participants from 67 nations

**ICUS XII (1983)**

Absolute Values and the New Cultural Revolution  
300 participants from 80 nations



**Morton A. Kaplan**

*Professor of Political Science*

**ICUS IX (1980)**

Absolute Values and the Search for the Peace of Mankind

600 participants from 80 nations

**ICUS X (1981)**

The Search for Absolute Values and the Creation of  
the New World

808 participants from 100 nations

**ICUS XI (1982)**

The Search for Absolute Values and the Creation of  
the New World

525 participants from 100 nations

**ICUS XII (1983)**

Absolute Values and the New Cultural Revolution  
300 participants from 80 nations



**Kenneth Mellanby**

*Director Emeritus, Monk's Wood Experimental Station*

**ICUS XIII (1984)**

Absolute Values and the New Cultural Revolution

225 participants from 40 nations

**ICUS XIV (1985)**

Absolute Values and the New Cultural Revolution

240 participants from 40 nations

**ICUS XV (1986)**

Absolute Values and the New Cultural Revolution  
240 participants from 45 nations



**Alvin M. Weinberg**

*Distinguished Fellow  
Institute for Energy Analysis*

**ICUS XVI (1987)**

Absolute Values and the Reassessment of the  
Contemporary World

225 participants from 47 nations

**ICUS XVII (1988)**

Absolute Values and the Reassessment of the  
Contemporary World

260 Participants from 47 Nations

## Founder's Page

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**T**he complicated problems of the world cannot be fully understood simply within the narrow perspectives of individual fields of knowledge. Their solution is beyond the capability of any single specialized society of scholars. This is because the problems of the world are essentially the problems of the human being. A human being has both a physical body with material desires and material senses and a spiritual self with spiritual desires and spiritual senses. The world is nothing but an extension of the human being with these two-fold aspects; in other words, the interrelationship of human beings with their two-fold aspects determines the order within societies and among nations. This is the reason why multidisciplinary research for solving the world's problems has to significantly consider such factors as religion, culture, art, and so on....

In order for ICUS to reassess today's world, there should be a unifying standard and its central point. This central point should relate with the two-fold desires of the physical body and the spiritual self of the human being. I recognize that, in the Middle Ages, God-centered thoughts and religious dogmatism blocked scientific exploration and limited the physical fulfillment of human beings. However, it has been a big mistake for humanistic thinkers since the Age of Enlightenment to hold not only

that religious belief is inferior to human reason, but also that humans' spiritual demands are in conflict with human reason. The emphasis which the Enlightenment or humanism put on rationality has been the great driving force for the sciences as they pursued the discovery of rational laws in nature. With reason only, however, we become separated from the ultimate purpose of the human being, who has a two-fold nature. Without this ultimate purpose, the human being cannot stand independently and even discover the right direction. While ignoring spirituality and being satisfied with reason and intellectual accomplishment, people have not been concerned about solving the urgent problems connected with their own ultimate purpose. As a result, they have come to be enthralled under materialism and so have lost their dignity.

Truth is one and is a principle ruling both nature and the human world. This principle in nature is the root and source of all things of the universe. This principle in the human being is the absolute values of love which guides us to complete our personalities through the harmony of our spirituality and physicality and to realize truth, goodness and beauty.

*From the ICUS Founder's Address, ICUS XVI, Atlanta, Georgia, November 26-29, 1987.*

# The International Cultural Foundation

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The International Cultural Foundation (ICF) sponsors the ICUS meeting. ICF is a non-profit foundation founded in 1968 by the Reverend Sun Myung Moon with the purpose of promoting academic, scientific, religious and cultural exchange among the countries of the world. Based on a deep desire to create a peaceful world, ICF aims to foster the emergence of a rich, new world culture embodying the enduring common values of all cultures, yet retaining as well the unique and essential traditions of each people.

The scope and diversity of ICF is evidenced by the many programs supporting positive, value-based dialogue, research, and publishing by scholars and scientists of all disciplines and nationalities. In addition to ICUS, ICF sponsors the Professors World Peace Academy and the Washington Institute for Values in Public Policy.

The underlying pattern and direction of all the ICF activities comes from the board of directors in response to the many suggestions received from scholars and scientists working with ICF.

## ICF Leadership

### *Founder*

**Sun Myung Moon**

### *Board of Directors*

**Chung Hwan Kwak** *Chairman*

**Bo Hi Pak**

**Neil Albert Salonen**

**Hugh D. Spurgin**

**Shunichiro Yoshida**

**Gordon Anderson**

### *Ex-Officio Members*

**Young Whi Kim**

**Kae Hwan Kim**

**Won Pil Kim**

**Se Won Yoon**

**Osami Kuboki**

**Martin Porter**

**Paul Werner**

**Reiner Vincenz**

**Dennis Orme**

**Henri Blanchard**



*Reverend and Mrs. Sun Myung Moon with Eugene P. Wigner, recipient of the 1st ICF Founders Award.*

## The ICF Founder's Award

On the foundation of fourteen years of support for scholarly activity, the International Cultural Foundation has created a major new academic award: the ICF Founder's Award.

This award recognizes the outstanding achievements of great scholars in their fields of professional expertise as well as their contributions in the service of humanity and furthering the causes of world peace. Both areas are considered in selecting the recipient of the award.

The award is given biennially (starting in 1982) and carries a substantial cash prize. It is presented by the Founder of ICF, the Reverend Sun Myung Moon, on the occasion of the annual International Conference on the Unity of the Sciences.



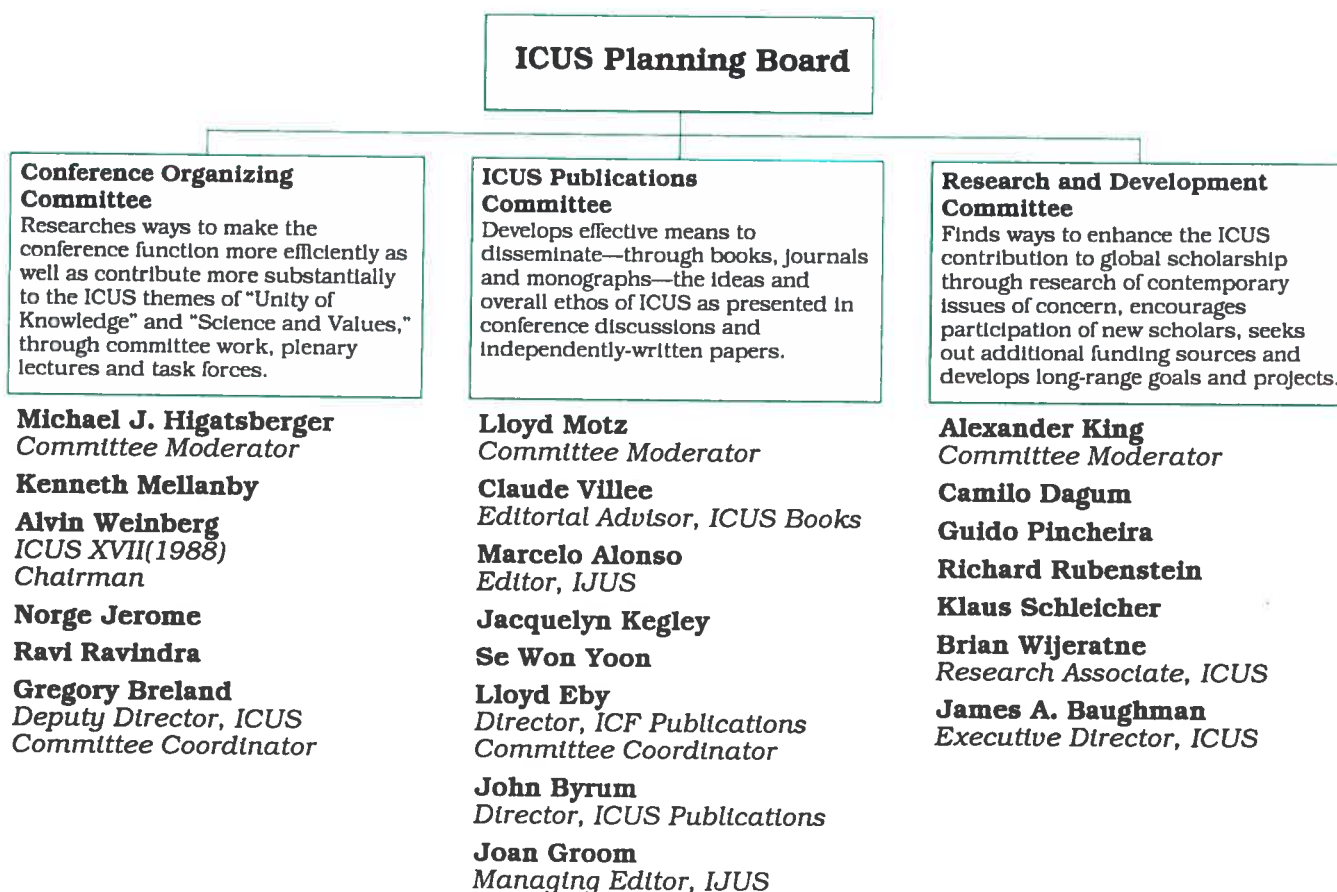
*F.A. Hayek receiving 1985 ICF Founders Award.*

# ICUS Planning Board



Front row, left to right: Camilo Dagum, Guido Pincheira, Se Won Yoon, Richard L. Rubenstein, Vincenzo Cappelletti, Alexander King, Kenneth Mellanby, Neil A. Salonen, Alvin M. Weinberg, Michael J. Higatsberger, Klaus Schleicher, Marcelo Alonso, Lloyd Motz.

Back row, left to right: Masaya Okada, Karl-Heinz Schulz, John Byrum, Mija Han Baughman, Joan Groom, Lloyd Eby, Ravi Ravindra, James A. Baughman, Lewis Rayapen, Brian Wijeratne, Gordon L. Anderson, Laura W. Lykes, Gregory Breland, Louise Perlowitz. (Not pictured: Norge Jerome, Jacquelyn Kegley)



# International Journal on the Unity of the Sciences

## (IJUS)

IJUS is a quarterly interdisciplinary journal published by the International Conference on the Unity of the Sciences (ICUS). It is dedicated to the comprehension, analysis and synthesis of the inter-relations among the different branches of knowledge in its various manifestations. IJUS provides a forum for the publication of research and scholarly work that underscores the relationship between knowledge and values and seeks a more unified understanding of humanity and the universe.

Individual issues focus on particular timely topics dealing with important issues confronting the world, discussed from an interdisciplinary perspective. Articles related to such disciplines as the Physical, Life or Social Sciences, Philosophy, Religion, Economics, Arts and Humanities address relevant issues in the context of the main themes of the journal, which are primarily the unity of knowledge and the relation between knowledge and values.

A journal of value-oriented interdisciplinary studies, IJUS goes beyond the scope of ICUS participants and papers presented at the ICUS meetings. Contributions in any way related to the purpose stated above and dedicated to interdisciplinary studies are welcome. These may be in the form of commentaries, book reviews and editorials.

Each issue consists of:

- 1) An **Editorial Page** prepared by the editor, or another contributor, commenting on particular problems of current interest, or providing an overview to the content of the issue.
- 2) Scholarly **Articles** dealing with topics that correspond to the themes of IJUS. All papers are submitted for peer review prior to acceptance.
- 3) **Letters to the Editor**, referring to contents published in previous issues.
- 4) **News and Comments** on current events, information about past or future meetings and projects, critiques of papers.
- 5) **Book Reviews**, a list of **Books Received** and **Book Ads**.



# Related Activities

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## *Professors World Peace Academy (PWPA)*

### **Interdisciplinary and International**

The Professors World Peace Academy is an educational organization of scholars from diverse cultural, disciplinary and political backgrounds. Through its interdisciplinary and international approach, scholars can engage in open discussion of realistic solutions to the problems of war and violence.

PWPA is a world-wide network of academics with chapters in over 90 countries. Each chapter is a separate association of scholars tied to a common purpose. Each seeks out the most important issues for peace in its own region as well as those essential for world peace. PWPA envisions a world in which war is no longer viewed as an acceptable way to solve international problems.

### **History of PWPA**

PWPA was founded by the Reverend Sun Myung Moon in Seoul, Korea in 1973. Korean-Japanese friendship was a main goal of the first conferences.

It sponsored the first International Conference on World Peace (ICWP) on the theme "World Peace and Asia" in 1974.

Through the 1970's the organization expanded significantly around the world with the help of ICUS. Then on December 18, 1983 a significant event in PWPA history was the First International Congress of PWPA Presidents in Seoul. PWPA-International was established to support the work of the PWPA chapters world-wide.

The second such congress, "The Fall of the Soviet Empire," convened in Geneva, Switzerland in 1985; the Third Congress, "China in a New Era," was held in Manila, the Philippines in 1987; and, the Fourth Congress on "Liberal Democratic Societies," will be held in London, U.K. in 1989. These congresses serve not only as a meeting point for PWPA presidents and leaders but as a place where they can learn the pros and cons of the major social systems of the world.



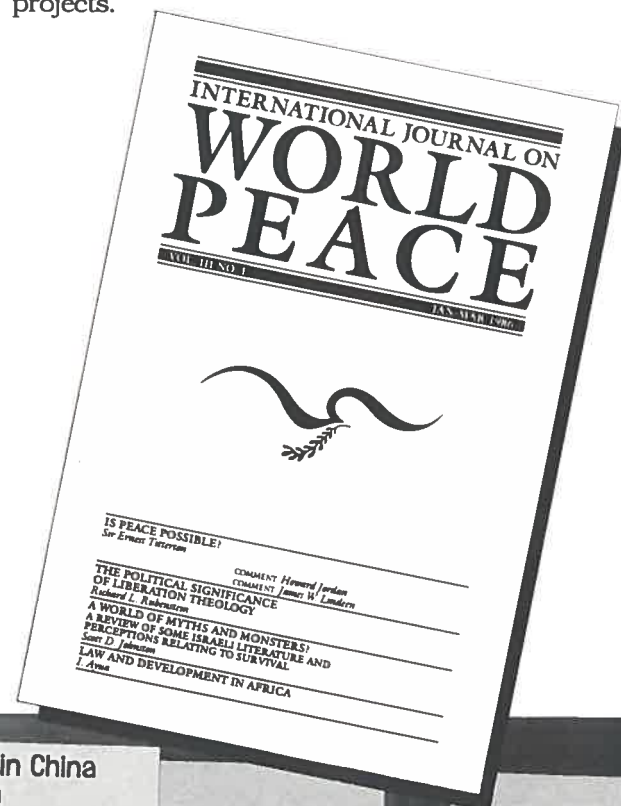
## International Journal on World Peace

### The PWPA Program

To achieve their goals, the PWPA chapters carry out the following:

- conduct research into issues related to war and peace and collect and store data and materials.
- sponsor conferences here and abroad, and hold lectures and seminars for the academic community.
- publish the respected quarterly *International Journal on World Peace*. The Journal carries articles on such subjects as just war theory, international law, liberation theology, energy, immigration, and hunger. It also publishes criticism, book reviews and editorial opinion.
- publish books related to peace, in cooperation with Paragon House publishers in New York, as well as conference proceedings, newsletters, and brochures.
- sponsor a wide range of interdisciplinary academic projects that support the purposes of PWPA.
- award prizes and other distinctions to members of the academic community for significant contributions to peace.
- help to arrange exchange programs of foreign and domestic scholars concerned with peace.

In 1984, PWPA launched a new international journal, *The International Journal on World Peace*. It also began an international publishing program which consists of conference proceedings, monographs and books published with Paragon House. In 1986 fifteen books were produced on a wide range of topics related to world peace. A number of reviews of the first six PWPA Books produced with Paragon House Publishers established the high quality of scholarship of PWPA projects.



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## ***The Advisory Council to the Unification Movement International (ACUMI)***

The Advisory Council to the Unification Movement International was founded in April of 1985 in New York City. A National Board was formed consisting of scholars who have been involved in the work of either the International Cultural Foundation (ICF) or the International Religious Foundation (IRF). The stated purpose of ACUMI is to provide a forum for scholars and professionals who have knowledge of the Unification Movement and who can, based on their experience, contribute to the growth, development, and maturation of the Movement and/or the ideals it seeks to promote. It is hoped that ACUMI advisors could help guide various departments of the Movement, including activities outside ICF and IRF.

ACUMI members, therefore, are kept well-informed about the Movement worldwide. For example, an annual summer tour to Asia provides an opportunity for participants to gain firsthand knowledge of the movement as it has emerged and grown in Korea, Japan and elsewhere in Asia. ACUMI also sponsors regional meetings in the

United States to offer briefings on projects and solicit suggestions from participants. Moreover, ACUMI provides occasions for persons involved in one sphere of the Movement, for example, ICF, CAUSA, CARP, or *World & I* to meet with ACUMI members from other areas to gather information and engage in constructive exchange.



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## ***Introductory Seminars on the Unification Movement (ISUM)***

From time to time the International Cultural Foundation has organized "Introductory Seminars on the Unification Movement." During the past ten years these seminars have been held in 26 different countries, with participants, including scholars, professors, and government officials responsible for higher education, from over 70 nations.

This seminar has developed with the purpose of serving those participants in ICF and IRF activities who expressed an interest in learning more about the Movement, its Founder, the Reverend Sun Myung Moon, and the sponsorship of contributing organizations such as ICF, IRF, PWPA, New ERA (the New Ecumenical Research Association), and ICUS. The agenda consists of five or six lectures given over three to four days on an "Outline of Principle"—the religious teaching of Reverend Moon. These lectures are presented by doctoral scholars, Ph.D. students, and Unification Church leaders.

The content of the lectures is clarified during informal group discussions designed to encourage the exchange of ideas and to provide an opportunity to understand the lifestyle of those who live as active members of the Movement. The lectures are also supplemented by video and photoslide

presentations which give an overview of the worldwide activities of the Movement, in addition to covering various aspects of Unification marriage and family life, and issues such as religious liberties. Each seminar has provided a rare opportunity to experience world fellowship beyond cultural and national boundaries.

The ISUM program is coordinated by ACUMI (the Advisory Council to the Unification Movement International): c/o ICF, Box 1311, New York, NY 10116; tele: (212) 947-1756. Information about the seminars is also available through the national ICF chapters listed in this program.

Past sites for the seminar have included:

**Hawaii**  
**Spain**  
**Puerto Rico**  
**Greece**  
**Kenya**  
**Mexico**  
**Ivory Coast**  
**Brazil**  
**USA**

**Jamaica**  
**Egypt**  
**Philippines**  
**Peru**  
**Italy**  
**Bahamas**  
**Thailand**  
**Argentina**  
**Guyana**

**Zaire**  
**Nigeria**  
**Panama**  
**Zambia**  
**Sri Lanka**  
**Malaysia**  
**Barbados**  
**France**  
**Canada**



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## ***The Washington Institute for Values in Public Policy (WI)***

The Washington Institute for Values in Public Policy (WI) is dedicated to sponsoring research that can help provide information and insights that will further the formulation of constructive policy in a democratic society.

Founded in 1982, The Washington Institute is an independent, non-profit educational and research organization which examines, with particular attention to their ethical implications, current and pending issues which require policy decisions.

The Washington Institute enables policy-makers and their academic counterparts to benefit from a variety of programs. Each group often deals with similar issues from different perspectives. What they frequently lack are opportunities to exchange viewpoints and information that will further the development of innovative approaches and solutions.

The Washington Institute has sponsored more than 100 conferences, debates and forums. Results of research sponsored by the Institute have been disseminated through the publication of more than 20 books, monographs and occasional papers.

### **Partial List of Programs, 1988-89**

#### **"Eastern Europe and the Superpowers: A Region in Transition"**

Conference Co-Chairpersons: Dr. Nicholas Kitztrie, Edwin A. Mooers Scholar and Professor of Law, The American University; and Dr. Ivan Volgyes, Professor of Political Science, University of Nebraska

#### **"Korean Challenges and American Policy"**

Dr. Ilpyong Kim, conference chairperson, Professor of Political Science, University of Connecticut

#### **"The Evolution of Chinese Energy-Economic Policies"**

Project Director: Dr. Yingzhong Lu, Director, Institute for Techno-Economics and Professor, Tsinghua University, P.R.C.

#### **"East Asian Security Issues Forum Series"**

A series of forums on East Asian Security Issues  
Series Moderator: Dr. June Teufel Dreyer, Director of East Asian Programs, University of Miami  
Topics:

"China and Asian Security,": Dr. Donald Zagoria;

"U.S.-Korea Security Issues:" Dr. Edward Olsen;

"U.S.-Taiwan Security Issues:" The Honorable Leonard Unger;

"U.S.-Japan Security Issues:" Dr. Donald Hellman;

"U.S.-Vietnam Security Issues:" Mr. Douglas Pike;

"U.S.-Philippines Security Issues:" Dr. Lawrence Grinter;

"U.S.-Pacific Island Security Issues:" Dr. Owen Harries;

#### **"United States-Mexico Border Issues"**

Honorary Conference Chairperson: The Honorable Mervyn Dymally, U.S. Congress

Organizing Chairman: Mr. David Carliner,

Attorney-at-Law, Program Advisor and Trustee of The Washington Institute

### **Washington Institute Books Published in 1988**

#### ***Vietnam: Strategy for a Stalemate***

F. Charles Parker IV

#### ***The Politics of Latin American Liberation***

#### ***Theology: Understanding the Challenge to U.S. Public Policy***

Edited by Richard L. Rubenstein and John K. Roth

#### ***Stability and Strategic Defense***

Edited by Jack Barkenbus and Alvin M. Weinberg

#### ***Mobutu Sese Seko: People, Politics, and Policy***

Jeffrey M. Elliot and Mervyn M. Dymally

#### ***Black Africa: A Comparative Handbook (Second Edition)***

Donald George Morrison with Robert C. Mitchell and John N. Paden

#### ***Understanding Black Africa: Data and***

#### ***Analysis of Social Change and Nation Building***

Donald George Morrison with Robert C. Mitchell and John N. Paden



J. Bennett Johnson, U.S. Senator from Louisiana and Chairman of the Energy and Natural Resources Committee, speaks on U.S. Energy Policy at a program sponsored by The Washington Institute.

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## Paragon House Publishers (PHP)

Paragon House, an independent publisher, is a producer of quality books from the religious, scientific and scholarly communities. Over two hundred and fifty titles are currently available in the humanities, theology, philosophy, political science and transdisciplinary studies.

Paragon House was organized in 1982 as an outgrowth of the International Cultural Foundation. Books authored in connection with ICF-related organizations—The International Conference on the Unity of the Sciences, the Professors World Peace Academy, and the Washington Institute for Values in Public Policy—are published by Paragon as imprint series.

In addition to its ICF-related imprint series, Paragon House publishes two other series, a general line of books to which it has added 40 new titles in 1988 and New Era Books, an imprint of the International Religious Foundation, which has 60 current titles in the field of religion.

Under the supervision of its independent advisory board, Paragon House is actively seeking original manuscripts from the academic community as well as selected titles of general interest in the humanities and the natural and social sciences.

Paragon House Publishers is located at 90 Fifth Avenue, New York, NY 10011. Telephone: (212) 620-2820. Please feel free to write with any questions you may have. Address your enquiries to Mr. Ken Stuart, Editor-in-Chief.



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## ***The World & I***

The *World & I* is an encyclopedic magazine that covers topics from fields of human endeavor and experience, and from many countries and cultures.

Each issue, which has over 700 pages, deals with a broad range of subjects presented in eight editorial sections.

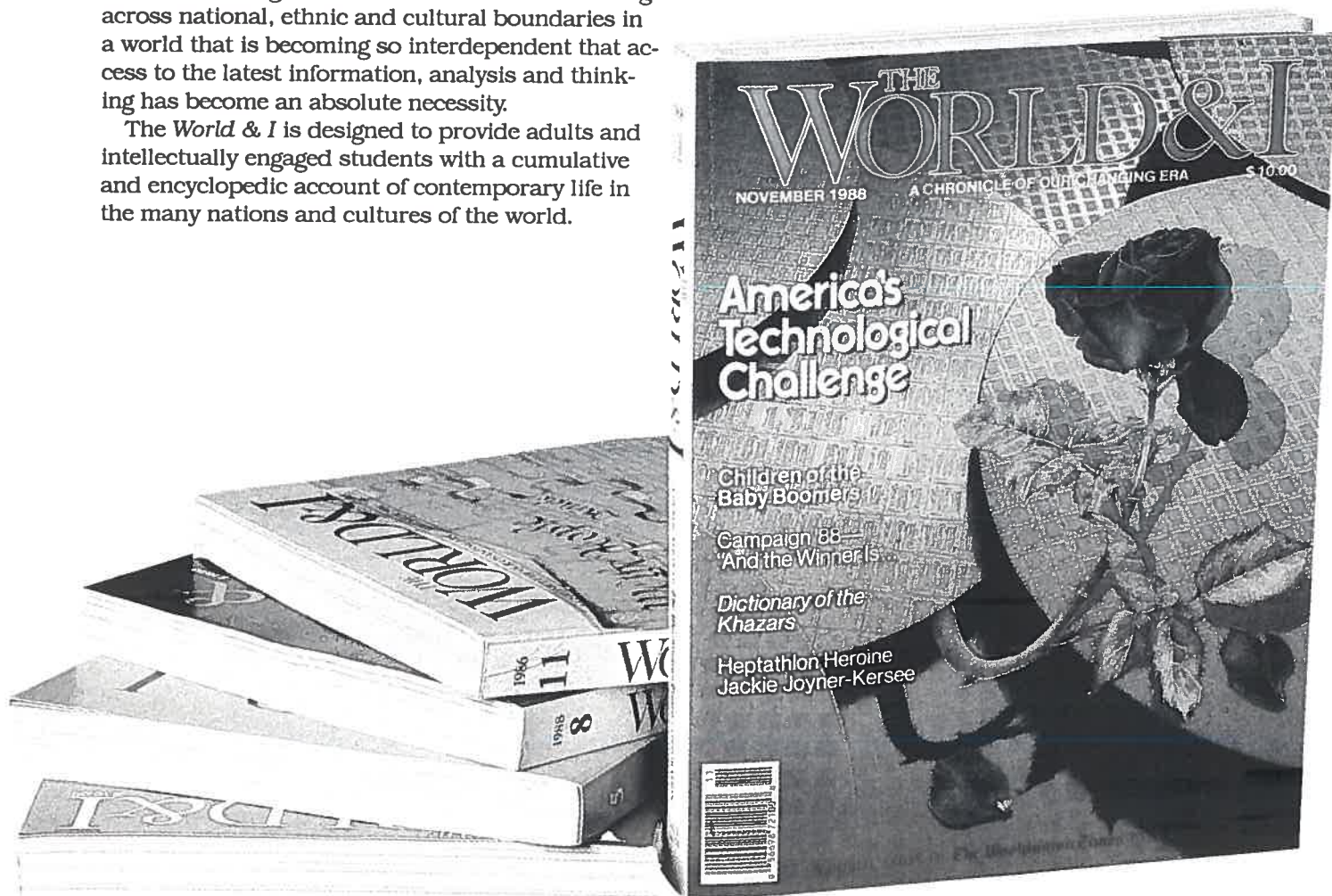
The *World & I* combines the best of scholarship and the best of journalism. It prints analytical and insightful articles that are presented in an interesting and enjoyable format. Our goal is to make information comprehensive and meaningful to literate and thoughtful people and to become an invaluable reference book for important topics of our day, as well as a chronicle of our times.

It is also our goal to contribute to understanding across national, ethnic and cultural boundaries in a world that is becoming so interdependent that access to the latest information, analysis and thinking has become an absolute necessity.

The *World & I* is designed to provide adults and intellectually engaged students with a cumulative and encyclopedic account of contemporary life in the many nations and cultures of the world.

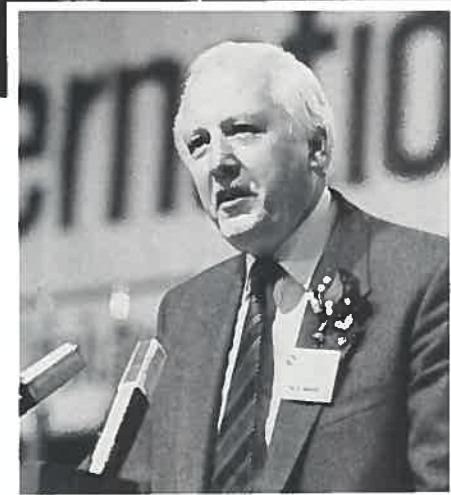
It provides:

- Enduring knowledge prepared by leading professors and distinguished practitioners
- Reference materials for high school and college students
- Diverse viewpoints on contentious issues
- Topics of conversation for every member of the family



## Scenes From ICUS XVI (1987)

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*The Sea-Tac Room*



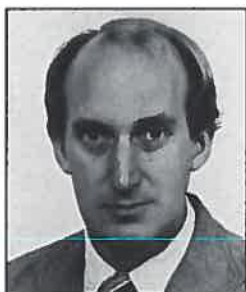
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(Zenith Travel)  
(Ballroom Foyer)

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*ICF Displays*  
(Ballroom Foyer)

**Jonathan Slevin**  
*Press Secretary  
Media Headquarters*  
(Heathrow)

Displays and representatives of PWPA, Paragon House, Washington Institute, *World & I* magazine, ACUMI and ICUS are located in the Ballroom Foyer.

# ICUS Publications

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From the beginning, ICUS meetings have generated a large body of quality scholarship on significant issues. The existence and availability of this material has given rise to a substantial publishing program, now known as ICUS Publications. The center of the ICUS publishing program is ICUS Books. In keeping with the ICUS tradition, ICUS Books aims to advance human understanding by publishing manuscripts that approach scientific topics with a special regard for the broad ICUS themes of Science and Values and the Unity of Knowledge.

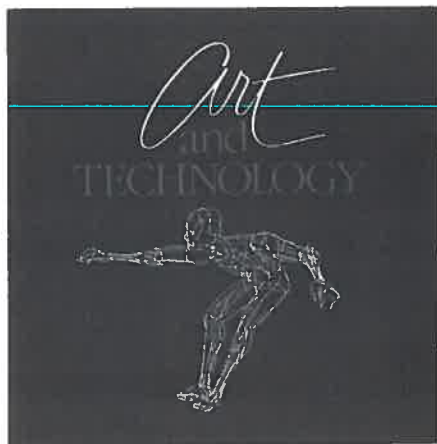
For ICUS I (1972) through ICUS XI (1982), ICUS Books consisted of volumes of the proceedings of the various ICUS meetings. Beginning with ICUS XII (1983), a Commemorative volume has been published from each ICUS, along with edited multi-authored volumes on particular themes. These edited theme-volumes have often been the selected fruits of a particular Committee from a particular ICUS. Because of this, the edited

volumes tend to be interdisciplinary approaches to timely issues, addressing the overall subject of the particular volume from several scientific, philosophical, historical, cultural or religious perspectives.

In addition to conference proceedings, commemorative volumes, and multi-authored edited volumes, ICUS Books also publishes single authored volumes. These single authored books are either enlargements of papers presented at ICUS, or solicited manuscripts on subjects or themes relating to the concerns of ICUS. ICUS Books actively seeks book projects and proposals that support or amplify the aims of ICUS and ICUS Books.

ICUS Publications has three goals for the future: to speed-up the publication of ICUS books, to increase their quality, diversity, and appeal, and to expand and strengthen the marketing and distribution of all ICUS publications.

## ICUS Books



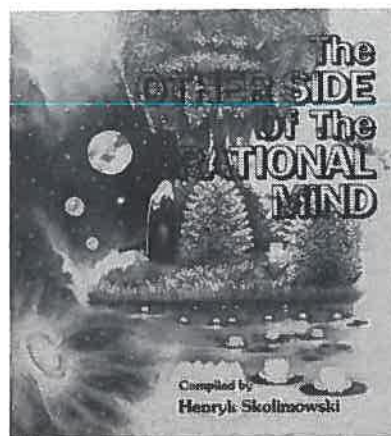
### **Art and Technology.**

*Edited by René Berger and Lloyd Eby.*

The development and use of new technologies in the arts, especially the computer, has changed the situation of the arts. Old definitions and understandings of arts may no longer apply. This book presents a collection of articles on the art-technology interface as it affects such arts as cinema, city planning, music, television, the comics, computer art, video art, and art in extra-terrestrial communities.

Created from the papers of Committee III of ICUS XII.

468 pages, photos and illustrations. Hardbound,  
Special price \$19.95.

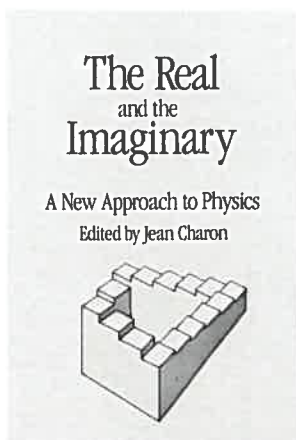


### **The Other Side of the Rational Mind.**

*Compiled by Henryk Skolimowski.*

Scientists and scholars are often regarded as merely rationalists or logicians. But, here, the more than thirty eminent contributors reveal the artistic, poetic aspects of their nature. To fully understand and appreciate the human condition we need to respect the emotional, the tender, the compassionate, the unutterable. That is what art in its varied forms attempts to do. With both literary and artistic pieces, this lavishly illustrated volume provides a glimpse into the hearts of those more commonly known for their hard intellect—a brief encounter with “the other side of the rational mind.”

128 pages, illustrated, Paperback \$14.95.

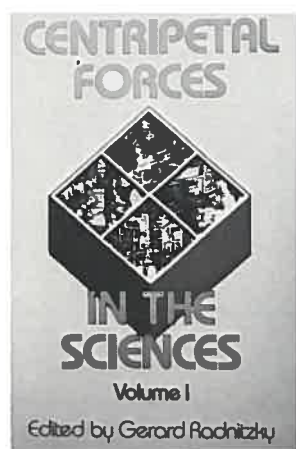


**The Real and the Imaginary:  
A New Approach to Physics.**  
*Edited by Jean Charon.*

The interaction between mind and reality has been a central field of investigation from the time of the Ancient Greeks. What role does the imaginary have in such "hard" sciences as physics and biology? How does the imaginary interact with the "objectivity" of science? In this book, leading scholars take a focused look at these important topics.

Created from the papers of Committee VI of ICUS XIII.

206 pages, Hardbound \$24.95.



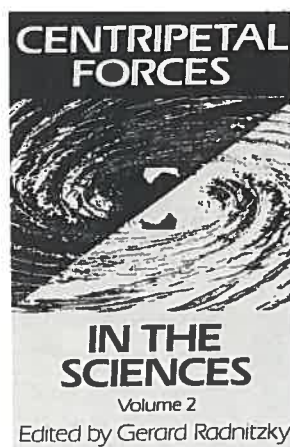
**Centripetal Forces in the  
Sciences. Volume 1.**  
*Edited by Gerard Radnitzky.*

The primary aim of basic science is to improve our knowledge of the world and of man as a part of nature. But specialization in science is unavoidable. This leads to a compartmentalization of science and, at

the level of the individual, to a limitation of competence and knowledge to an increasingly narrow field.

These books present a number of approaches to the unity of the sciences. Volume One consists of four sections. The first covers the idea of "Unity of Science" in intellectual history. The second presents the unifying potential of the evolutionary perspective. The third considers the economic approach, and the fourth discusses unity in the social sciences. Created from the papers of Committee I of ICUS XII.

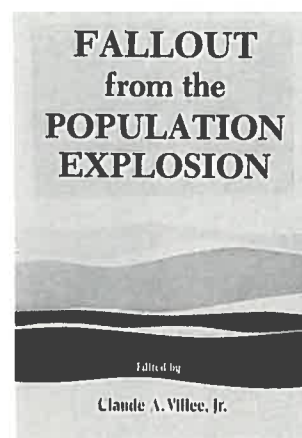
429 pages, Index, Hardbound  
\$22.95.



**Centripetal Forces in the  
Sciences. Volume 2.**  
*Edited by Gerard Radnitzky*

Volume Two contains four parts. Part one is concerned with problems of the unification of science and of reductionism in the light of methodology of research and of science policy. Part two discusses reduction and emergence in physics and chemistry. Part three presents reduction and explanation in biology, the social sciences and history, and part four is concerned with the reductionism of the sociological turn in the philosophy of science. Created from the papers of Committee I of ICUS XIII.

About 400 pages, illustrated, index,  
Hardbound \$29.95.



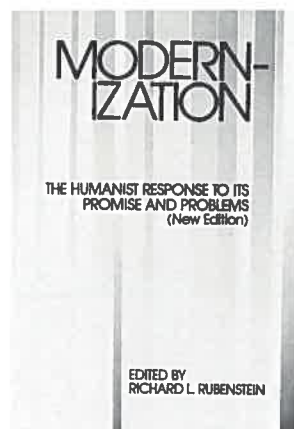
**Fallout from the Population  
Explosion.** *Edited by Claude A.  
Villee, Jr.*

Population control has been a political concern for several millennia. Both Plato and Aristotle discussed population size in their political theories. In this century, during the sixties, the catastrophe theory came into fashion; we were warned that if we didn't do something about the expanding human race then each of us might soon be confined to one square yard of earth. Since then the issue seems to have dropped from public consciousness. Professor Claude Villee has brought together a number of papers on this topic from several ICUS conferences.

*"Presents a balanced picture of the situation as it exists today and, importantly, interweaves population matters in with other social issues...I like especially the chapters on health care, ethical aspects, environment and conservation, and aging."*

—Professor Donald J. Bogue  
Department of Sociology  
University of Chicago

264 pages, Hardbound \$24.95.

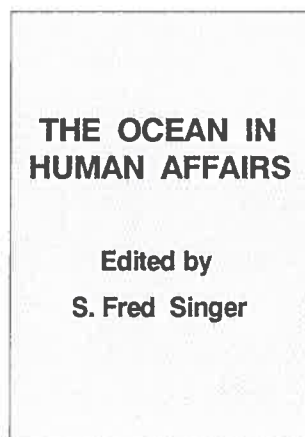


**Modernization: The Humanist Response to its Promise and Problems.**  
New Edition. Edited by Richard Rubenstein.

This collection of essays examines aspects of the modernization process and its religious, social, environmental, and political consequences. The authors are all humanists in the sense that they are fundamentally concerned with the quest for values by which men and women can sustain themselves, and they come from a wide variety of national, religious, cultural, and professional backgrounds.

Created from papers from the Committee on Religion and Philosophy of ICUS VI and ICUS VII.

360 pages, Paperback \$14.95.

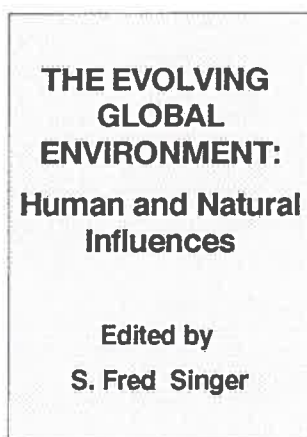


**The Ocean in Human Affairs.**  
Edited by S. Fred Singer.

The planet Earth is alone in the solar system in possessing a water ocean and living things. The existence of this ocean may be respon-

sible for the evolution of life and of mankind. Throughout the history of the planet, the ocean has determined the Earth's climate. The ocean has assumed increasing economic importance, as an avenue of commerce and as a source of fish and minerals. It also provides a frontier of exploration on this planet—ocean research and ocean technology have increased to meet that challenge. The ocean's importance in human affairs throughout history has led to an increased international attention to the management of the ocean and its resources. The papers in this book explore these topics. Created from the papers of Committee V of ICUS XIII.

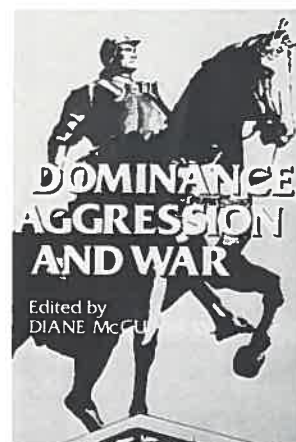
About 250 pages, illustrated,  
Available March 1989. Paperback  
\$25.95.



**The Evolving Global Environment: Human and Natural Influences.**  
Edited by S. Fred Singer.

Many people have become increasingly concerned with mankind's future on this planet. This subject has profound philosophical and scientific aspects and is of international concern. This book focuses on three categories of problems: problems that arise as inadvertent by-products of human activities, problems that arise as undesirable long-range consequences of purposeful modifications of the environment, and problems that arise from global environmental issues that can be called "natural" in that they are not controlled by man. Created from the papers of Committee VI of ICUS XII.

About 250 pages, Illustrated,  
Available March 1989, Paperback  
\$25.95.

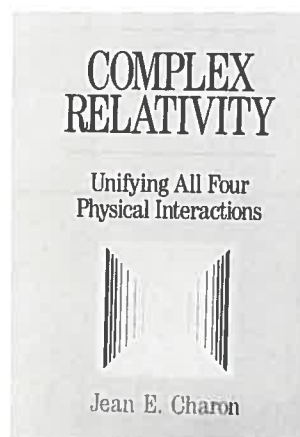


**Dominance, Aggression and War.** Edited by Diane McGuinness.

The puzzle of human warfare is that, in contrast to rage, war is premeditated and prolonged. This book brings together the contributions of a number of anthropologists, biologists, sociologists and psychologists on the question of intermale aggression. Topics covered include the biological basis of dominance and aggression, animal intelligence and human instinct, nuclear weapons and the control of aggression, the social organization, rank and aggression among subspecies of chimpanzees, and human dominance systems.

Created from the papers of Committee V of ICUS XII.

328 pages, Hardbound \$24.95.



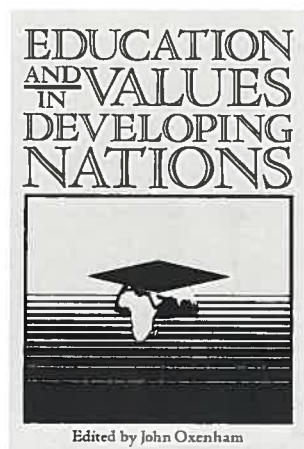
**Complex Relativity.**  
By Jean Charon

The physics of our century has made great strides toward a unified representation of the universe. Most of this progress is a direct conse-

quence of physicists' constantly improving understanding of the complexity of space and time.

In this important book, French physicist Jean Charon proposes a unification scheme called Complex Relativity. This approach assumes that ALL momentum-energy (action) of the universe is located in the Imaginary part of the total universe. Like Supergravity and Superstring theories, Complex Relativity also asserts the existence of "invisible" dimensions.

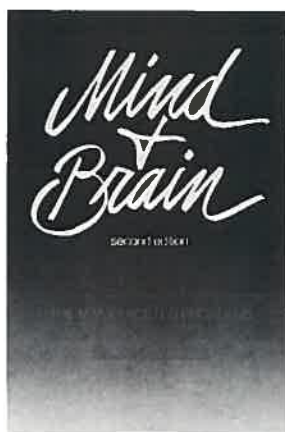
176 pages, illustrated, Hardbound \$27.95.



**Education and Values in Developing Nations.**  
*Edited by John Oxenham.*

Modernization is a powerful concept for motivating and shaping social and economic policy, but the idea has been given a variety of interpretations and content, so the possible common elements of these interpretations and possible incompatibilities remains to be clarified. There is a wide agreement that certain values are necessary to create a climate in which modernization can be pursued, and that these values necessary for modernization are to be fostered and encouraged through education. This book focuses on societal values underlying successful modernization, paying particular attention to the content, philosophy, and processes promoted by educational institutions in developing countries. Created from the papers of Committee IV of ICUS XIV.

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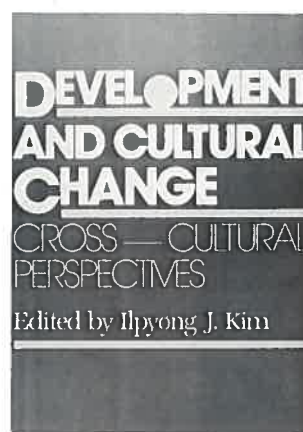
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