
***Absolute Values
and
The New Cultural Revolution***



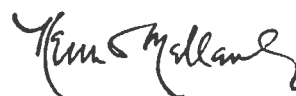
***Fifteenth International Conference
on the
Unity of the Sciences***

In welcoming you all to ICUS XV in Washington, D.C. for the third time in the history of this organization, I do so with mingled feelings of gratification, pride and humility. This is the third—and last—year in which I have the honor to be Chairman of ICUS, and in this period I have had the great satisfaction of working with hundreds of eminent scholars from all over the world, and with the dedicated staff of ICUS. To all of them I owe my heartfelt thanks.

During my period of office we have made some important changes in the organization of the conference, changes which have been possible because of the firm foundations established by previous chairmen. We hope now that you will feel that you, yourselves, will be able to make, everyone of you, a solid contribution to this conference, as well as receiving much from your contacts with the other members.

In today's world there is widespread criticism, almost hatred, and certainly fear, of science and technology. Much of this feeling is unfounded

and based on lurid press reports of imaginary or grossly magnified disasters. As a biologist, I am most concerned about the safety of our environment. Nuclear disasters, world pollution, the exhaustion of resources—ideas of doom loom very much in people's minds. These possible disasters are related to the misuse of science. But our difficulties can only be solved by scientific methods, properly used. We need more science, not less. But we need humane science, prompted by scientists who are humble and caring, who possess the vision that the Reverend Sun Myung Moon has stressed as the driving force of ICUS and the International Cultural Foundation. I hope and trust that this conference will do much to help us all to progress in this direction.



Kenneth Mellanby
Organizing Chairman
ICUS XV

Welcome to our nation's capital. This is the third time that ICUS is being held in Washington D.C., a capital city which symbolizes the ideals of not only one nation, but of an international community of nations which values political, economic and cultural freedom. ICUS, too, represents a distinguished international community which values intellectual freedom. For this reason, I think it is very fitting that the ICUS community has once again come together in this city.

At this meeting, we will examine many relevant issues across socio-cultural boundaries. The continued exploration of "Absolute Values and the New Cultural Revolution" will certainly stimulate new ideas and fresh approaches to

solving common problems. Our opportunity and responsibility is to invest ourselves in these next few days as a community of scholars concerned about the future of mankind.

Our staff is here to serve you. Please feel free to call on us with any needs you may have. Our office is located in the Russell Room. May you have a fruitful and rewarding experience at the conference.



Neil Albert Salonen
President
International Cultural Foundation

***Fifteenth International Conference on the Unity of Sciences
November 27–30, 1986 • J. W. Marriott Hotel, Washington, D.C.***

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Fifteenth ICUS Chairmen's Board



**Conference Chairman
Plenary Speaker
"Man and the Natural World"**

Kenneth Mellanby
*Director Emeritus
Monk's Wood Experimental Station
Huntingdon, England*



Conference Vice-Chairman

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



Conference Vice-Chairman

Alexander King
*President
Club of Rome
Paris, France*



**Plenary Speaker
"The Chain of Being"**

Robert Jastrow
*Professor of Earth Sciences
Dartmouth College
Hanover, New Hampshire*

Committee I

"Unifying Principles in Science"

Eugene P. Wigner
Honorary Chairman
Professor of Mathematics & Physics,
Emeritus
Princeton University
Princeton, New Jersey

Marcelo Alonso
Organizing Chairman
Executive Director, FITRE
Florida Institute of Technology and
Research
Melbourne, Florida

Committee II

"The Value of Human Life"

Claude A. Villee, Jr.
Honorary Chairman
Andelot Professor of Biological
Chemistry
Laboratory of Human Reproduction
and Reproductive Biology
Harvard University Medical School
Boston Massachusetts

Paul Badham
Organizing Chairman
Chairman of Church History and
Senior Lecturer in Theology and
Religious Studies
St. David's University College
University of Wales
Wales, United Kingdom

Committee III

"Towards Ecumenism in World Philosophy"

Sang Hun Lee
Honorary Chairman
President, Unification Thought
Institute
Seoul, Korea

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

Committee IV

"The Relationship Between Science and the Arts and Its Relevance to Cultural Transformation"

Tor Ragnor Gerholm
Honorary Chairman
Professor of Physics
University of Stockholm
Stockholm, Sweden

Maurice Goldsmith
Organizing Chairman
Director, International Science Policy Institute
London, England

Committee V

"Problems of Third World Development: The Case of Africa"

Alexandre J. Ohin
Honorary Chairman
President, Pan African Institute of
Ecology and Cancerology
Togo, West Africa

Jan Knappert
Organizing Chairman
Senior Fellow
School of Oriental and African Studies
University of London
London, England

Committee VI

"Eastern Approaches to Knowledge and Values: With an Emphasis on 'Gi'"

Manabu Nakagawa
Organizing Chairman
Professor of Economics
Hitotsubashi University
Tokyo, Japan

Committee VII

"Global 2000 Revisited: Reassessing Man's Impact on Spaceship Earth"

S. Fred Singer
Honorary Chairman
Department of Biology
George Mason University
Fairfax, Virginia

Hugh Ellsaesser
Organizing Chairman
Physicist
Atmospheric and Geophysical
Sciences Division
Lawrence Livermore National
Laboratory
Livermore, California

Committee I

Unifying Principles in the Sciences

A common aspiration of scientists and philosophers throughout the ages has been to reduce the "explanation" of the apparent diversity in the universe to a minimum number of concepts and of general principles or rules, an aspiration we may designate as unification of scientific thought. The Greeks tried to explain the material world in terms of four "elements," a situation that of course did not work. This explanation gradually evolved in complexity until, in the 19th century, 92 "elements" were required, an idea that was not esthetically very satisfying. During the first part of this century it became clear that the "elements" were themselves complex systems, but it seemed that only three elementary "particles" were needed to explain the structure of matter. Very soon it was discovered that many more "particles" seemed to exist. A similar process has occurred with the forces (or types of interactions) in nature. Modern physicists are trying to reduce all the interactions in the universe to a single or "unified" force after having reduced them to about four, and more recently, to three. In turn, biologists have successively approached a unified understanding of living beings until identifying a basic structure of the genetic code, which now appears to be much more diverse and complex, and its total explanation in terms of physical principles is still an unresolved problem. Philosophers and epistemologists have long been concerned with the concept of "reductionism," which in a sense implies a unification of thought similar to the efforts in the physical and biological sciences.

During the course of time, four major concepts have emerged that play a unifying role in our understanding of the universe and that also have philosophical and epistemological implications. They are symmetry, space-time, energy and entropy. The purpose of Committee I, ICUS XV (1986), is to examine in a coherent and interdisciplinary way these unifying concepts carrying one step further the work of Committee I, "Change and Organization in Complex systems," in ICUS XIV (1985) that touched upon those ideas in an "evolutionary" way.

Accordingly, the first four sessions of Committee I will deal with the following themes:

1. Symmetry: Beauty and Harmony in the Universe
2. Space-Time: The Fabric of the Universe
3. Energy: The Essence of the Universe
4. Entropy: A Characteristic of a Dynamic Universe

The fifth and sixth sessions of the Committee will consist of a general discussion of the four themes, led by a few general discussants, keeping in mind the possibility of a "grand unification" of the scientific and philosophical thought. Perhaps an "umbrella" question for these sessions is whether our model of the universe and our methods for its description are unique. Or, recalling Einstein's concern about the simplicity and intelligibility of nature, whether our understanding of the universe coincides with the form in which God created it. Put in another way, "Is the world intelligible to the human mind?"



Honorary Chairman
Eugene Wigner
*Emeritus Professor of Physics
Princeton University
Princeton, New Jersey*



Organizing Chairman
Marcelo Alonso
*Executive Director
Florida Inst. of Technology
Research and Engineering, Inc.
Melbourne, Florida*

Session I. Symmetry

Friday, November 28/2:30-4:30 pm

1. Symmetry and the Laws of Nature



Lloyd Motz
*Department of Astronomy
Columbia University
New York, New York*

2. Symmetry in Biomolecules: Its Physiological Meaning



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

3. Symmetry in Art and Nature



Bulent I. Atalay
Professor, Mary Washington College
and University of Virginia
Fredericksburg, Virginia

Discussants

Miguel R. Covian
Professor of Physiology
School of Medicine
University of Sao Paulo
BRAZIL

Inge Ellsaesser
University of Stuttgart
Stuttgart, WEST GERMANY

Carl Rau
Department of Physics
Rice University
Houston, Texas

3. The Conscious Organism in Space and Time



Percy Lowenhard
Associate Professor of Psychology
Department of Psychology
University of Goteborg
Goteborg, SWEDEN

Discussants

George Marx
Physics Institute
University of Budapest
Budapest, HUNGARY

K. V. Laurikainen
Emeritus Professor
University of Helsinki
Research Institute for
Theoretical Physics
Helsinki, FINLAND

Victor La Torre
Physics Research Director
National Council of Science
and Technology
Lima, PERU

Session II. Space-Time

Friday, November 28/5:00-7:00 pm

Session III. Energy

Saturday, November 29/9:00-11:00 am

1. Theories of Space and Time



Max Jammer
President
Association for the Advancement of
Science (Israel)
Jerusalem, ISRAEL

2. Psychobiology of Space and Time



Jose M.R. Delgado
Professor and Director
Center for Neurobiological Studies
Madrid, SPAIN

1. The Evolution of the Concept of Energy and its Role in Systems of Increasing Complexity



Bent Elbek
Professor, Niels Bohr Institute
Tandem Accelerator Laboratory
Roskilde, DENMARK

2. Energy and Matter in the Early Universe



Harald Fritzsch
Professor of Theoretical Physics
University of Munich and Max Planck
Institute of Physics
Munich, WEST GERMANY

3. Energy in Living Systems



Claude A. Villee, Jr.
Andelot Professor of Biological
Chemistry
Laboratory of Human Reproduction
and Reproductive Biology
Harvard Medical School
Boston, Massachusetts

Discussants

Mariano Bauer
Director, University Energy Program
Universidad Nacional Autonoma
de Mexico
Mexico City, MEXICO

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

Efraim Otero
Columbian Minister of Health
Professor of Endocrinology and
Nuclear Medicine
Bogota, COLUMBIA

Shuzaburo Takeda
Professor of Photonics
Tokai University
Hiratsuka, JAPAN

3. Entropy as a Unifying Concept



Masamoto Takatsuji
Senior Researcher
Advanced Research Laboratory
Hitachi, Ltd.
Tokyo, JAPAN

Discussants

Luis A. Romo
Director of Chemical Research
Central University
Quito, ECUADOR

Georg Sussmann
Professor of Theoretical Physics
University of Munich
Munich, WEST GERMANY

Andrew J. Reck
Department of Philosophy
Tulane University
New Orleans, Louisiana

Session IV. Entropy

Saturday, November 29/11:30 am -1:30 pm

1. The Genesis of the Concept of Entropy



Michael J. Higatsburger
Professor of Physics
Institute for Experimental Physics
University of Vienna
Vienna, AUSTRIA

2. Entropy in Equilibrium and Non-Equilibrium Systems



Leopoldo S. Garcia-Colin
Distinguished Professor
Universidad Autonoma
Metropolitana-Iztapalapa
MEXICO

Session V. Special Discussion

Sunday, November 30/9:00-11:00 am

Nicholas Georgescu-Roegen
Department of Economics
Vanderbilt University
Nashville, TENNESSEE

Karl H. Pribram
Professor of Neuroscience
Dept. of Psychology & Psychiatry
Stanford University
Stanford, California

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

C.F. von Weizsacker
Max-Planer Institute
Starnberg, WEST GERMANY

Session VI. General Discussion

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

Committee II

The Value of Human Life

The purpose of this committee would be to explore the value of human life, particularly in relation to modern advances in medical research. We should begin by considering the ethical issues raised by the development of research on "spare" pre-embryos produced in the context of in vitro fertilisation programmes. The need for such programmes would also be discussed, as well as the questions of donor insemination, surrogate motherhood and the desirability of promoting birth control policies. The Committee would also consider the value of human life in the context of arguments about the morality of abortion or of capital punishment, or concerning the appropriate treatment of seriously handicapped or extremely premature infants. We would include problems which arise at the other end of life, from the ability of modern medicine to keep life in being, possibly beyond the limits of what might be considered desirable for either the individual or society. Moreover, the committee would discuss the problems raised for those moralists who tend to support "absolutist" stands on the sanctity of human life in its formation and decay, while giving human life only a relative value in the context of justified warfare.

As a background to these specific ethical themes, the committee should consider underlying assumptions

about the dignity of the human person and the meaning of life which derive from the world's religious traditions.

It will be noted that the enduring ICUS theme of **Science and Value** is absolutely central to this proposal. But the other ICUS theme of **The Unity of Knowledge** would be no less important, for it is proposed that these ethical problems should be approached from the disciplines of natural science, family medicine, law, ethics, sociology, peace studies and social policy. And the underlying pre-suppositions of these discussions should be probed from the perspectives of both western and eastern religious thought.

It is proposed that Professor Claude Villee, Andelot Professor of Biological Chemistry, at Harvard University Medical School should serve as Honorary Chairman, and that The Rev. Dr. Paul Badham, Chairman of Church History and Senior Lecturer in Theology and Religious Studies at St. David's University College Lampeter in the University of Wales should act as Organizing Chairman. Papers in the areas suggested should be sought from the following, who have all intimated their willingness to participate in this Committee:



Honorary Chairman
Claude A. Villee, Jr.
*Laboratory of Human
Reproduction and
Reproductive Biology
Harvard Medical School
Boston, Massachusetts*



Organizing Chairman
Paul Badham
*Senior Lecturer in Theology and
Religious Studies and Chair of the
Church History Subject Committee
St. David's University College
University of Wales
Lampeter, Dyfed
Wales, UNITED KINGDOM*

Session I.

Friday, November 28/2:30-4:30 pm

1. The Present State of Research on Pre-Embryonic Material



Simon Fishel
*Sr. Lecturer in Obstetrics and
Gynaecology
University of Nottingham
Nottingham, ENGLAND*

Discussants

Alan Trounson
*Director, Centre for Early Human
Development
Queen Victoria Med. Centre
Melbourne, AUSTRALIA*

2. The Concept of "Person" in American Legal Theory



Jude Dougherty
*Dean of School of Philosophy
Catholic University of America
Washington, D.C.*

Discussant

Antony Flew
*Emeritus Prof. of Philosophy
University of Reading
Reading, ENGLAND*

Session II.

Friday, November 28/5:00-7:00 pm

1. Birth Control and the Value of Human Life



Shigemi Kono
Director-General
Institute of Population Problems
Ministry of Health & Welfare
Tokyo, JAPAN

Discussant

Dieter Cassell
Professor of Political Economy
University of Duisberg
WEST GERMANY

2. How People Argue About Abortion and Capital Punishment in Europe and America and Why



Christie Davies
Professor of Sociology
University of Reading
Reading, ENGLAND

Discussant

Michael Coughlan
Dean of Faculty of Arts
St. David's University College
Lampeter, University of Wales
UNITED KINGDOM

Session III.

Saturday, November 29/9:00-11:00 am

1. The High Tech and the "Wanted Life" or "Whose Life is it, Anyway?"



Nicholas Kittrie
Professor of Law and Director, Institute
of Law and Policy
American University
Washington, D.C.

Discussant

Jacob Sundberg
Institute of Public and International
Law
University of Stockholm
Stockholm, SWEDEN

2. Moral Implications of the Manipulations of the Genetic Nature of Man



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

Discussant

Masaru Takahashi
Associate Professor of Ethics
Hamamatsu University
School of Medicine
Shizuoka, JAPAN

Session IV.

Saturday, November 29/11:30 am -1:30 pm

1. Hard Choices: Ethical Questions Raised by the Birth of Handicapped Infants



Helga Khuse
Research Fellow and Deputy Director
Centre for Human Bioethics
Monash University
Victoria, AUSTRALIA

Discussants

Takahide Mori
Professor of Medicine
Kyoto University
Kyoto, JAPAN

Karoly Akos
Head, Research Group on
Psychochronography
National Institute of Medical Experts
Budapest, HUNGARY

2. The Appropriate Medical Care of the Terminally Ill



Jan Kryspin
Asst. Prof. of Physiology &
Rehabilitation Medicine
University of Toronto
Toronto, CANADA

Discussant

Katsutaro Nagata
Director, Research & Educ.
Life Planning Center
Toho University
Tokyo, JAPAN

Session V.

Sunday, November 30/9:00-11:00 am

1. The Right to Die



Dr. Patrick Nowell-Smith
Professor Emeritus
York University
Ontario, CANADA

Discussant

Ljubisav M. Rakic
Professor of Biochemistry and
Neurobiology
Medical Faculty
University of Belgrade
Belgrade, YUGOSLAVIA

2. Justified Warfare and the Relative Value of Human Life



Peter Van den Dungen
Lecturer in Peace Studies
University of Bradford
West Yorkshire, ENGLAND

Discussant

Dr. Jan Brogger
Professor of Social Anthropology
University of Trondheim
Trondheim, NORWAY

2. The Value of Human Life in Buddhist Thought



Sulak Sivaraksa
Coordinator, Asian Cultural Forum on
Development
Bangkok, THAILAND

Discussant

Siddhi Butr-Indr
Dept of Philosophy and Religion
Chiang Mai University
Faculty of Humanities
Chiang Mai, THAILAND

Deirdre Green
Lect'r in Buddhist Studies
St. David's Univ. College
Lampeter, Univ. of Wales
UNITED KINGDOM

Session VI.

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

1. Christian Belief and the Ethics of In Vitro Fertilisation and Abortion



Paul Badham
Senior Lecturer in Theology and
Religious Studies and Chair of the
Church History Subject Committee
St. David's University College
University of Wales
Lampeter, Dyfed
Wales, UNITED KINGDOM

Discussant

Christian Gaba
Professor of Religious Studies
University of Cape Coast
GHANA



Committee III

Towards Ecumenism in World Philosophy

The present world situation not only urgently needs but also remarkably favors the emergence of creative new interaction within the farflung variegations of the philosophical enterprise. The fragmentation of knowledge and the split between science and values continue to thwart the vision of a unific human purpose. To cope with the grim threats to our common future as epitomized in nuclear holocaust and ecological disaster, it is increasingly clear that humanity must get its heart and head together, not in reductive uniformity but in mutuality of understanding that will ground and promote cooperative endeavor. The fruitful work of all cognitive disciplines of science, art, and praxis we must and can reach today for wider and deeper sharing of intellectual vision.

The undertaking that challenges us is nothing less than an ecumenical movement of philosophy wherein the earth's vast heritage of thought will be potentiated afresh through the dialogical interaction of living traditions and newly arising viewpoints. An inventory is wanted of the world's philosophical resources, discerned in their wholistic integrity and critically appreciated in their respective salient contributions to the mutual coherence of the sciences and their integration with values. Thereupon, through the indispensable medium of actual dialogue, can ensue reciprocal inquiry, critique and reflexive serendipity—a process of interpersonal co-thinking that

has largely been lacking in the history of thought till now.

The **problem** which motivates this committee is on the one side precisely this standing lack, so far in the human adventure, of a genuine wider ecumenism in philosophy, while on the other side it is the dire need already mentioned to mobilize and integrate the human mind and spirit to cope with the crises we face. The unprecedented opportunity we enjoy today is sweeping access to world cognition and the chance to experience its evolving dynamism in the encounter of creative representative interpreters of our immense but divided hertiage. Building on the work of preceding ICUS meetings, it is proposed to continue with the format of last year's Committee V, eliciting papers that will focus the overarching thrust of major representative viewpoints as these address both the unity of knowledge and the integration of science and values. Care would be taken as before to engage authors who not only can expound expertly the content of living traditions but who also will be authentic witnesses to their contemporary personal meaning. In each case an "elephantine" paper would be sought, spanning epistemology, axiology, ontology and ethics, as all of these together form the embrace of wholistic cognition with human purpose. Eminently appropriate as Honorary Chairperson for the Committee's undertaking would be Dr. Sang Hun Lee, President of the Unification Thought Institute.



Honorary Chairman
Sang Hun Lee
President
Unification Thought Institute
Seoul, KOREA



Organizing Chairman
A. Durwood Foster
Professor of Christian Theology
Pacific School of Religion
Berkely, California

Session I.

Friday, November 28/2:30-4:30 pm

1. The Tradition of Advaita Vedanta



R. Balasubramanian
Director, The Dr. S. Radhakrishnan
Institute for Philosophy
University of Madras
Madras, INDIA

Discussant

Ewert Cousins
Professor of Theology
Fordham University
Bronx, New York

2. Hua-Yen Philosophy and Bodhisattva Ethics



Ki-Young Rhi
Professor of Buddhism
Department of Indian Philosophy
Dongguk University
Seoul, KOREA

Session II.

Friday, November 28/5:00-7:00 pm

1. *Philosophy, Theology and the Primordial Claim*



Huston Smith
Adjunct Professor
Graduate Theological Union
Berkeley, California

Discussant

George I. Mavrodes
Department of Philosophy
University of Michigan
Ann Arbor, Michigan

2. *Ti'en T'ai Buddhism and the Unity of Knowledge*



David W. Chappell
Department of Religion
University of Hawaii at Manoa
Honolulu, Hawaii

Discussant

Tom Selover
Center for Study of World Religions
Cambridge, Massachusetts

Session IV.

Saturday, November 29/11:30-1:30 pm

1. *The Liberation Philosophy of Ram Mohan Roy*



S. Cromwell Crawford
Department of Religion
University of Hawaii
Honolulu, Hawaii

Discussant

Bina Gupta
Department of Philosophy
University of Missouri
Columbia, Missouri

2. *John Dewey's Philosophy of Creative Intelligence*



Gene G. James
Professor of Philosophy
Memphis State University
Memphis, Tennessee

Session III.

Saturday, November 29/9:00-11:00 am

1. *The Fusion of Fact and Value in Jamesean Pragmatism*



David Kalupahana
Professor of Philosophy
University of Hawaii at Manoa
Honolulu, Hawaii

Discussant

Philip Mullins
Associate Professor of Humanities
Missouri Western State College
St. Joseph, Missouri

Session V.

Sunday, November 30/9:00-11:00 am

1. *Simone de Beauvoir: A Philosopher in Dialogue*



Linda Hansen
Associate Professor of Liberal Studies
Philosophy Department
St. John's University
Collegeville, Minnesota

Discussant

Joseph Bettis
Professor of Religious Studies
Western Washington University
Bellingham, Washington

2. *H. Richard Niebuhr's Radical Monotheism as a "World Theology"*



Lonnie Kliever
Professor of Religious Studies
Southern Methodist University
Dallas, Texas

Discussant

Richard Gelwick
Professor and Head, Department of
Religion and Philosophy
Stephens College
Columbia, Missouri

Session VI.

Sunday, November 30/11:30-1:30 pm

1. Jacques Derrida: The Dominance of Unity



Nona R. Bolin
Instructor in Philosophy
Memphis State University
Memphis, Tennessee

Discussant

Robert P. Scharlemann
Department of Religious Studies
University of Virginia
Charlottesville, Virginia

2. Unification Thought



Theodore Shimmyo
Assistant Prof. of Theology
Unification Theological Seminary
Barrytown, New York

Discussant

Avtar Singh
Professor and Dean
Punjabi University
Punjab, INDIA



Committee IV

The Relationship Between Science and The Arts and its Relevance to Cultural Transformation

There is only a pessimistic future for humankind if we do not concern ourselves with the One Culture, common understanding that there are different roads of endeavour within that One Culture—roads built and under construction—along which go humanists, philosophers, theologians, artists, writers, musicians and so on, and that these different roads lead but to one central point where humankind is to be found.

The different travellers along these different roads have their own conception of reality. I am concerned with seeking how far the reality made apparent by the scientist is in accordance with the reality revealed by the artist or by travellers along other roads. There is a non-linear relationship between discovery made along these different roads.

I see the relationship between cultural events as rather like physical events around an earthquake. From its focus, stimulated long before, the earthquake is responsible for happenings over a very wide area during a period of time. If we assume, for instance, that Einstein's General Relativity is a cultural earthquake, why cannot we seek out its focus, which probably lies along a different road, say that trodden by the artist? The music of Stravinsky or the art of Picasso may be regarded as cultural earthquakes. What and where were the foci which triggered them off, and where in other roads of endeavour can we trace the effects?

Let us consider the usefulness of this unverifiable hypotheses of the "cultural earthquake," by discussing it in the following fields:

1. Painting
2. Music
3. Literature (Prose and Poetry)
4. Architecture
5. Science (Natural and Social)

Let us assume as examples of "cultural earthquakes":

1. Einstein's **General Relativity** of 1918, concerned with the geometry of space-time, which states in essence space tells matter how to move and matter tells space how to curve. In 1905, Einstein had published his **Special Theory of Relativity**, formulating the amalgamation of space and time into a four-dimensional space-time continuum, and his equation $E=Mc^2$, that is the equivalence of mass and energy;
- Or, 2. **The Cubo Futurist Movement** in painting (Manifesto 1909), with its masterpiece **Nude Descending a Staircase** by Marcel Duchamp;
- Or, 3. **The Bauhaus** (1919-1928) under Walter Gropius;
- Or, 4. **Ulysses** (1937) by James Joyce.

Each paper writer is asked to consider what in his own field were the "stirrings" which had expression in the cultural environment in which such people as Einstein, Duchamp, Gropius and Joyce, for example, and their colleagues moved; and what he might regard as "cultural earthquakes" in his field with an impact outside.



Honorary Chairman
Tor Ragnar Gerholm
Professor of Physics
University of Stockholm
Stockholm, SWEDEN



Organizing Chairman
Maurice Goldsmith
Director
International Science Policy
Foundation
London, ENGLAND

Session I.

Friday, November 28/2:30-4:30 pm

1. Introductory Remarks

Maurice Goldsmith
Director, International Science Policy
Foundation
London, ENGLAND

2. Science and Art: A Study in Cultural Plate Tectonics

Tor Ragnar Gerholm
Professor of Physics
University of Stockholm
Stockholm, SWEDEN

Session II.

Friday, November 28/5:00-7:00 pm

1. Religion



Richard L. Rubenstein
Professor of Religion
Florida State University
Tallahassee, Florida

2. Far from the Epicentre: Social Science and Dramatic Art



Eileen V. Barker
Dean of Undergraduate Studies
London School of Economics and
Political Science
London, ENGLAND

Session III.

Saturday, November 29/9:00-11:00 am

1. Ars Sine Scientia Nihil Est (On Architecture and the Sciences)



Ervin Y. Galantay
Full Professor of Urban Design and
Planning
Swiss Federal Institute of Technology
Lausanne, SWITZERLAND

2. Music vs Science: The Contemporary Quest for the Unity of Musical Time



Daniel Charles
Professor and Chairman,
Department of Music
University of Paris VIII
Antibes, FRANCE

Session IV.

Saturday, November 29/11:30 am -1:30 pm

1. Art and Its New Interface



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

2. The Factionalisation of Science



George Hay
Council Member, Science Fiction
Foundation
North East London Polytechnic
London, ENGLAND

Session V.

Sunday, November 30/9:00-11:00 am

1. The Dream of China: the Swedish East India Company (1731-1813) and its Significance for Swedish Science, Art and Culture



Ingmar C. Hasselgreen
Head of Department
Goteborg Museum
Goteborg, SWEDEN

2. Science and Culture: Indian Context



Abdur Rahman
Former Director, National Inst. for
Science & Technology &
Developmental Studies
Council of Science & Industrial
Research
New Delhi, INDIA

Session VI.

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

1. The "I" in Science Literature: a Basis for Unity?



Michael Shortland
Research Director
Department of External Studies
University of Oxford
Oxford, ENGLAND

Committee V

Problems of Third World Development: The Case of Africa

The purpose of this Committee will be to attempt to test the value of science. Assuming that the purpose of science is to be an instrument for the well-being of humanity, it must be possible to develop a scientific solution to the problems of the Third World. These problems appear most acute in Africa, which is why this Committee was asked to concentrate its attention on the peoples of Africa.

The most pressing problems of Africa are poverty, desiccation, famine, violence, misrule, disease, lethargy and overpopulation.

To those who say that science is not equipped to solve such complex problems, the answer is that it must be **made** equipped for our purpose. In the same way as scientists designed a vehicle that carried people to the moon, something which many people considered impossible, so we too must design a scientific model that can help us solve the problems of Africa—each of which incidentally, are global problems (e.g. overpopulation, under-education, over-grazing, threatened species, etc.)

It is obvious from the above that one specialized science cannot solve this complex assignment. Many scientists have to contribute. It is only in the unification of the sciences that solutions may be found for the peoples of Africa. People have to learn to live in their environment without destroying it, and we have to teach them to do so; there is no escape from that necessity, from that duty.

The present writer is well aware that many of the suggested cures for Africa's problems may cancel each other

out, e.g. an improvement of the appalling health conditions will increase the population so that there will be yet more empty stomachs; giving food to the starving will keep alive many who will carry the mental and physical effects of starvation for life; in addition, it does not remove the causes of starvation. Improving methods of cattle breeding in order to increase milk production for children will cause yet more over-grazing and endanger large areas of Sahel land that are already close to desiccation.

Mass education is not possible before the language problem is solved, i.e. either all Africans become fluent in English or French, or they must expand the vocabularies of their national languages so as to make them potential vehicles for scientific thinking and technical concepts. Neither development is possible without practically destroying all authentic African cultures and altering African mentality completely. Finally, tackling Africa's major problem, over-procreation, is not possible as long as the major religions, African, Asian and European, resist every form of family planning or birth control, in other words, as long as all the women of Africa are compelled by the mentality of their societies to have the maximum number of children they can bear (an **average** of twenty pregnancies each). As long as this situation continues, the population of Africa will double every 20 years and increase a thousand fold every 200 years.

It is still our duty to search for new solutions to old problems. The claim on science is undiminished: it has to show its value by helping us to solve the problem of suffering.



Honorary Chairman
Alexandre J. Ohin
President
Pan African Institute of Ecology
and Cancerology
Lome, TOGO



Organizing Chairman
Jan Knappert
Senior Fellow
School of Oriental and African
Studies
University of London
London, ENGLAND

Introductions

Friday, November 28, 11:45 am - 1 pm



1. Introductory Remarks on the Problems of Modern Africa

Alexander King
President, Club of Rome
Paris, FRANCE

2. Problems of Language and Education in Africa

Jan Knappert
Senior Fellow
School of Oriental and African Studies
University of London
London, ENGLAND

Session I. Environment

Friday November 28/2:30-4:30 pm

1. Protecting the African Environment



Kenneth Mellanby
Director Emeritus
Monk's Wood Exper. Station
Huntingdon, ENGLAND

2. Water for Development in Africa



Letitia Obeng
Water, Health and Environment
Consultant
Achimota, GHANA

Discussant

John MacKinnon
Wildlife Consultant I.U.C.N.
Cambridge, ENGLAND

Session III. The Land

Saturday, November 29/9:00-11:00 am

1. Agricultural Development in Africa (The Case of Zimbabwe and Zambia)



Gustaaf P.A. Cosijn
Senior Agronomist
DHV Engineering Consultants
The Hague, NETHERLANDS

Discussant

Assefa Kuru
Researcher
Environmental Science
Helsinki, FINLAND

2. Roots of Deforestation and Soil Erosion Problems in Africa



Assefa Kuru
Researcher
Environmental Science
Helsinki, FINLAND

Discussant

Kathy MacKinnon
Wildlife Consultant I.U.C.N.
Cambridge, ENGLAND

Session II. Nature

Friday, November 28/5:00-7:00 pm

1. Deserts in Africa



Samir I. Ghabbour
Institute of African Research
Dokki, Cairo, EGYPT

2. The Illegal Trade in Rhinoceros Horn in Africa



Esmond B. Martin
Wildlife Trade Consultant
Nairobi, KENYA

Discussant

Donald L. Capone
Department of Geography
University of Miami
Coral Gables, Florida

Session IV. Society

Saturday, November 29/11:30 am-1:30 pm

1. The Problems of Women in Egypt



Ragia M. Effat
Lecturer in Swahili
Institute of African Research and
Studies
Cairo University
Cairo, EGYPT

2. African Women: Their Health and Their Future



Joyce E. Thompson
Associate Professor
Director, Nurse-Midwifery
Univ. of Pennsylvania
Philadelphia, Pennsylvania

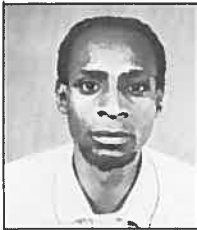
Discussant

Alexandre Ohin
President, Pan African Inst. Ecology
and Cancerology
Lome, TOGO

Session V. Education

Sunday, November 30/9:00-11:00 am

1. Education in Developing Africa: An Assessment of Post-Independence Achievements and Problems



Abel G. Ishumi
Prof. of Educ. Sociology
Department of Education
Univ. of Dar Es Salaam
TANZANIA, EAST AFRICA

Discussant

Toshio Toyoda
Prof. of Educational Sociology
Tokyo Internat'l Univ.
Tokyo, JAPAN

M.I. Abouegl
Dept. of African Languages
El-Azhar University
Cairo, EGYPT

2. Problems of Africa Today: the Waterpot on the Woman's Head or Automation?



Alice N. Wanekaya
Education Officer
Nairobi, KENYA

Discussant

Abel G. Ishumi
Prof. of Educ. Sociology
Department of Education
Univ. of Dar Es Salaam
TANZANIA, EAST AFRICA



Session VI. Politics

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

1. Political Impediments to Development in Southern Africa



William Theo Roy
Waikato University
Hamilton, NEW ZEALAND

Discussant

Gerhard Oosthuizen
University of Zululand
Westville, SOUTH AFRICA

2. On the Relative Fitness of Democracy and Communism in their Rivalry in the Third World



Stanislaw Andreski
Department of Sociology
University of Reading
Reading, ENGLAND

Discussant

Mervyn Hiskett
Professor Emeritus
University of Sokoto, NIGERIA
and Senior Research Fellow
Univ. of London, ENGLAND

3. Refugees in Africa



Richard D. Greenfield
Professor of Social Science
University of Oxford
Oxford, ENGLAND

Discussant

Thomas Unwin
United Nations
Displaced Persons
Bureau (Retired)
Khartoum, SUDAN

Committee VI

Eastern Approaches to Knowledge and Values: with an emphasis on "Qi"

In recent years the axis of world politics and economy has been shifting from the Atlantic to the Pacific, and the dawning of "the Asia-Pacific ERA" has become an oft-quoted phrase. General interest toward East Asia, in particular, has heightened and mutual exchanges in all fields ranging from goods, personnel, science, technology, culture, and thought between the East and the West are thriving.

Within "the dialogue between the Eastern and the Western civilizations" which is being activated the need for integration and unity of the sciences is gaining wider recognition. We see a marked trend among Western scholars to reevaluate the Eastern view of the world, and to incorporate the holistic viewpoint into their respective disciplines.

Newton, the father of modern science, established classical physics as a means for man to understand God, and for him, the relationship of science and absolute values was clear. However, since then, modern science not only became independent of values, losing sight of the ground of its very existence, but, moreover, it became impossible to place the respective disciplines in mutual relationships. The reason why Eastern thought is being reassessed by contemporary physics is none other than that the religious intuition revealed by the East seems to be indicating the existence of absolute values which the sciences ought to attain in a manner or method different from that of modern Western rationalism. The Japanese Nobel physicist Dr. Hideki Yukawa in his latter years has been constantly emphasizing the need to incorporate the thoughts of Lao-Tze and Chuang-Tze into the theory of elementary particles.

A certain amount of the knowledge accumulated in the classical texts of the East can be explained by modern science; however, there is much that is different in nature from modern science. Yet, it may be that what seems different merely awaits scientific verification, and that in time this will become an object of a scientific hypothesis, and will become established as a scientific truth. There-

fore, it is premature to reject Eastern knowledge because it cannot be explained by science at present. Such knowledge we will suspend before science for the time being. If the range of application of the methods of modern science should be expanded by its encounter with knowledge of the East, this will certainly contribute to the enrichment of science itself. As one approach to this Eastern knowledge, we have decided to focus on the issue of "Qi" this year. Our theme is "Eastern Approaches to Knowledge and Values: With an Emphasis on Qi."

The papers presented in this committee each deal with specific areas, which as a whole will illustrate "unity in diversity," and outline the characteristics of Eastern approaches toward knowledge.

At our pre-ICUS meeting in the spring of 1986, we discussed the idea of Qi based on the dimension of dynamics. However, Qi also embodies a spiritual element. In other words, it is considered in Japan that the realm of Qi transcends the entire system of knowledge. In contrast, the discussion this year, centering on participants from Korea and China, dealt with Qi on the level of mere knowledge. Hence the revision of the theme from "Nature of Science" to "Approaches to Knowledge." Knowledge is not necessarily science, and is therefore acceptable to Western scientists even if it is not science. In order to further research the issue of Qi upon this premise, it is necessary to study its spiritual aspect. This must lead to the study of Buddhism as a religion, through which I believe it is possible to bring the principle of Qi closer to the idea of the God of Heart, the God of Tears.

Another point that was brought up at the pre-ICUS meeting is the proposal of Professor Ravi Ravindra and Professor Joseph Jordens. They spoke of a transformation from the paradigm of physics to that of psychology, and within the various sciences it was emphasized that a paradigm shift was necessary. This shift may possibly provide one bridge between East and West, a means for the West to understand the Eastern world.



Organizing Chairman
Manabu Nakagawa
Professor of Economics
Hitotsubashi University
Tokyo, JAPAN

Session I. "An Eastern Approach to Psychological Knowledge"_____

Friday, November 28/2:30-4:30 pm

1. "The Human Psyche: perspective from the East"



Joseph T.F. Jordens
Dean
Faculty of Asian Studies
Australian National University
Canberra, AUSTRALIA

Discussant

Arthur J. Ellison
Prof. Emeritus
Dept. of Electronics
City University
Kent, ENGLAND

Session III. "Qi and Yoga"_____

Saturday, November 29/9:00-11:00 am

1. "Yoga and Knowledge"



Ravi Ravindra
Professor
Dept. of Physics & Religion
Dalhousie University
Nova Scotia, CANADA

Discussant

Padmasiri De Silva
Chairman, Department of
Philosophy & Psychology
University of Peradeniya
Peradeniya, SRI LANKA

Session IV. "West Encounters Eastern Qi"_____

Saturday, November 29/11:30 am-1:30 pm

Session II. "The Concept of Qi"_____

Friday, November 28/5:00-7:00 pm

1. "View of Nature as Seen from Oriental Philosophy"



Jong Ho Bae
Dept. of Oriental Philosophy
Won Kwang University
Chun Buk, KOREA

Discussant

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

2. "Qi Thought of the Orient"



Hang Nyong Lee
Former President
Hong-Ik University
Seoul, KOREA

Discussant

Mokusen Miyuki
Professor of Religious Studies
California State University
Northridge, California

1. "Techne and Qi: West Encountering East"



Frank Flinn
Consultant in Forensic Theology
St. Louis, Missouri

Discussant

Alfredo Lagmay
Dept. of Psychology
University of the Philippines
Quezon City, PHILIPPINES

2. "The Mechanistic Clock and the Dancing Shiva" (Reconciling Eastern and Western Approaches to Knowledge)



Henryk Skolimowski
Dept. of Humanities
College of Engineering
Univ. of Michigan
Ann Arbor, Michigan, USA

Discussant

Leticia Lagmay
Assoc. Prof. of Anthropology
Univ. of The Philippines
Quezon City, PHILIPPINES

Session V. "The Practice of Qi: Theoretical Basis"

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

1. "Qi and Wu Li in China"



Shuji Suzuki
Professor of Chinese Literature
Hiroshima University
Hiroshima, JAPAN

Discussant

Zu-Pei Li
Vice-President
Heilongjiang University
Harbin, PEOPLE'S REPUBLIC
OF CHINA

2. "The Chinese Theory of Qi and Modern Science"



Wu Huan Pei
Vice Dean, Dept. of Physics
Heilongjiang University
Harbin, PEOPLE'S REPUBLIC
OF CHINA

Discussant

Yong Woon Kim
Dept. of Mathematics
Hanyang University
Seoul, KOREA

Session VI. "The Practice of Qi: Medical Application"

Sunday, November 30/3:00-4:00 pm

1. "The Concept of Qi in Oriental Medicine and Psychosomatic Medicine"



Yujiro Ikemi
President, Japanese Society
of Psychosomatic Medicine
Kyushu University
Fukuoka City, JAPAN

Discussants

Masaaki Honda
Professor of Philosophy
University of Occupational
and Environmental Health
Kitakyushu, JAPAN
Yumiko Takahashi
Director, Natural Beauty
System Research Institute
Tokyo, JAPAN



Committee VII

Global 2000 Revisited: Re-Assessing Man's Impact on Spaceship Earth

In the quarter century of environmentalism begun with the appearance of *Silent Spring* in 1962, there has been much emotion but little light shed on problems of the environment. We have heard much of pesticides and non-biodegradables; of air, water and ocean pollution; radioactive and toxic wastes, and endangered species; of enhanced atmospheric greenhouse effect, reduced ozone uv-screen and acid rain and, more recently, of nuclear winter. But there has been little relative weighing of one hazard against another, the possible benefits from the offending agent or practice and, least of all, the cost of foregoing the condemned action. Instead, we have been exposed to the moralistic condemnation of every agent or practice considered to be detectably changing the environment in anyway. If we, as one species among the many sharing our terrestrial environment, are to cope effectively, or even rationally, with man's ever growing impact on the ecology of Earth, we must abandon moralisms and imprecise and prejudicial terminology and develop scientific evaluations of the comparative total impacts of alternate courses of action.

What in fact is the most serious long-term threat to man's continued existence and enjoyment of this terrestrial environment he has come to know and to love—and how can it be mitigated? I addressed this question some time ago, shortly after air pollution became a lively topic. I concluded that 'Air Pollution: (was) Our Ecological Alarm and Blessing in Disguise' (EOS, 52, 92-100, 1971). That is, air pollution was but an early and comparatively benign symptom of the basic malady of man's overgrazing of his ecological niche.

But the issue is more than science; it has strong political (competitional), moral and theological connotations as well. In every subject area there have been and are significantly different viewpoints or value judgements competing for dominance—a competition waged unfortunately

through attempts to control the flow of information to the voting public through the mass media. Those seeking to regulate air pollution mobilized public support by attributing to it health hazards—hazards now accepted by the public but which still remain to be demonstrated (remember CHESS?).

This aspect of the problem is not new. It is as old as human nature—else we would never have heard of the judgement of King Solomon to partition the babe, or of the fable of *The Emperor's New Clothes* or of the many other allegories and satires that have come down to us as monuments to human exploitation by humans. This aspect involves the ICUS theme of Science and Values at its most fundamental level. In its newest and broadest aspect it is epitomized by the sharp contrast between *The Resourceful Earth* and *The Global 2000 Report to the President*. It is for this reason that I have adopted the title *Global 2000 Revisited*.

It is too much to hope that we can definitively resolve either issue—identification of the final nemesis of human kind or elimination of the filters and blinders so prevalent in the discussions of scientific issues bearing on public policy. But we can help bring the issues to the attention of a wider audience and we can offer a rostrum for some of the views most successfully excluded from public discussion in the past. We can attempt an objective reevaluation of some of the issues raised by *Global 2000* and perhaps can discover even more serious and immediate problems that have not as yet been considered or publicized.

Neither issue is going to go away by itself. A public policy arrived at by subterfuge is unlikely to promote the best interest of all of us. And if man does not come to a planned equilibrium with his terrestrial environment, an abiding equilibrium will eventually be provided for him—and in a manner unlikely to be to his liking.



Honorary Chairman
S. Fred Singer
Department of Biology
George Mason University
Fairfax, Virginia



Organizing Chairman
Hugh W. Ellsaesser
Atmospheric and Geophysical
Sciences Division
Lawrence Livermore Nat'l
Laboratory
Livermore, California

Session I

Friday, November 28/2:30-4:30 pm

1. Keynote Address: Alternative Perspectives on the Earth's Prospects. The Global 2000 Report (GTR) vs. The Resourceful Earth (TRE))



Max Singer
The Potomac Organization, Inc.
Washington, D.C. 20005

Open discussion

2. Study of Changes of Paleo-Coastal Environment of Fujian (Southeast China) Caused by Sea-Level Variations



David K. Lin
IGACP Sea Level Project
Institute of Geology
Fujian Teachers University
Fuzhou, PEOPLE'S REPUBLIC OF CHINA

Discussant

Heng Lun Sun
Sea-Level Research Center
Research Institute of Geography
Fujian Teachers University
Fuzhou, PEOPLE'S REPUBLIC OF CHINA

Session II

Friday, November 28/5:00-7:00 pm

1. The Role of Alkaline Particulates on pH of Rain Water and Implications for Control of Acid Rain



L. T. Khemani
Senior Scientific Officer
Indian Institute of Tropical
Meteorology
Pune, INDIA

Discussant

Kunihiko Watanuki
Department of Chemistry
College of Arts & Sciences
University of Tokyo
Tokyo, JAPAN

2. Importance of Biogeochemical Processes and Weathering for Norwegian Streamwater Chemistry



Ivan Th. Rosenqvist
Institute of Geology
University of Oslo
Blindern, NORWAY

Discussant

Hisatoki Komaki
Komaki Peace Foundation
Shiga, JAPAN

3. Our Present Understanding of Acid Rain

D. W. Schindler
Fresh Water Institute
Dept. of Fisheries & Oceans
Winnipeg, Manitoba, CANADA

Session III

Saturday, November 29/9:00-11:00 am

1. Forest Conservation in Tropical Asia: The Individual Dimension



Warren Brockelman
Faculty of Social Sciences
Mahidol University
Bangkok, THAILAND

Discussant

Marion Clawson
Resources For The Future
Washington, D.C.

2. Affluence Versus Effluents—Marine Water Pollution Control in the USA and in Developing Countries



Harvey Ludwig
Chairman, SEATEC
International and
Advisor on Environment
Board of Thailand
Bangkok, THAILAND

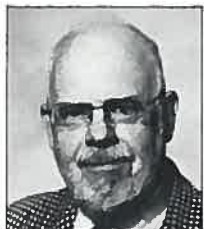
Discussant

Willard Bascom
Director (retired)
Southern California Coastal Water
Research Project
5137 Vista Hermosa
Long Beach, California

Session IV

Saturday, November 29/11:30 am-1:30 pm

1. Hormesis and Nurture with Ionizing Radiation



T. Don Luckey
Consultant in Life Sciences
and Retired Professor of
Biochemistry
University of Missouri
Columbia, Missouri

Discussants

Hiroo Kato
Chief of Epidemiology Dept.
Radiation Effects Research Foundation
Hiroshima, JAPAN

Shu-Zheng Liu
Norman Bethune University
of Medical Sciences
Changchun
PEOPLE'S REPUBLIC OF CHINA

2. Nuclear Waste Disposal: The Nature of the Problem



Jerry J. Cohen
Lawrence Livermore National
Laboratory (retired)
Livermore, California

2. Replacements for Fossil Fuels and Comparative Environmental Impacts



Mark Mills
Science Concept, Inc.
Washington, D.C.

Session VI

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

1. Cancer: A Result of Incidental Exposures or of Senescence, or of Both?



John R. Totter
Institute for Energy Analysis
Oak Ridge Associated Universities
Oak Ridge, Tennessee

Discussant

Gio Batta Gori
Franklin Institute
Chevy Chase, Maryland

2. Managing Toxic Materials: Bio-ethical Perspective



Margaret N. Maxey
Biomedical Engineering Program
University of Texas at Austin
Austin, Texas

Discussant

James R. Dunn
Dunn Geo-Science Corp.
Latham, New York

Session V

Sunday, November 30/9:00-11:00 am

1. Possible Replacements for Fossil Fuels and Comparative Environmental Impacts



Jovan V. Jovanovich
Physics Department
University of Manitoba
Winnipeg, Manitoba
CANADA, R3T 2N2

Discussant

Kazem Omidvar
NASA Goddard Space
Flight Center
Greenbelt, Maryland

Agenda

Fifteenth International Conference on the Unity of Sciences

November 27–30, 1986

**J.W. Marriott Hotel
Washington, D.C.**



The Symbol of ICUS

The symbol of ICUS employs at its center the symbol of ICF. The symbol of ICUS portrays the give and take relation and interdependence between 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 27

- 10:00 am** Registration Opens
Registration C
- 12:00— 3:00 pm** Buffet Luncheon
Capitol F
- 5:00— 6:30 pm** Survey Panels Meeting
State, Treasury
- 7:30 pm** Welcoming Reception
Salon I, II

Friday, November 28

- 7:00 am** Breakfast
Capitol E, F
- 9:00 am** Opening Plenary Session
Salon II, III, IV
- 10:30 am** Refreshment Break
Capitol Lobby
- 11:00 am** Plenary Address: "The Chain of Being"
Robert Jastrow
Salon III, IV
- 1:00 pm** Luncheon
Salon I, II
- 2:30 pm** Session 1
Capitol H/J, Capitol B/C, Hart-Cannon, Rayburn, Dirksen, State, Treasury
- 4:30 pm** Refreshment Break
Capitol Lobby
- 5:00 pm** Session 2
Capitol H/J, Capitol B/C, Hart-Cannon, Rayburn, Dirksen, State, Treasury
- 7:00 pm** Dinner
Salon I, II

Saturday, November 29

- 7:00 am Breakfast**
Salon I, II
- 9:00 am Session 3**
Capitol H/J, Capitol B/C,
Hart-Cannon, Rayburn, Dirksen,
State, Treasury
- 11:00 am Refreshment Break**
Capitol Lobby
- 11:30 am Session 4**
Capitol H/J, Capitol B/C,
Hart-Cannon, Rayburn, Dirksen,
State, Treasury
- 1:30 pm Luncheon**
Salon I, II
- 2:30 pm Recess**
(Optional Tour)
- 5:30 pm World & I Reception**
Capitol F
(All Welcome)
- 6:30 pm Dinner**
Salon I, II
- 8:00 pm Plenary Address: "Man and the
Natural World"**
Kenneth Mellanby
Salon III, IV

Sunday, November 30

- 7:00 am Breakfast**
Salon I, II
- 9:00 am Session 5**
Capitol H/J, Capitol B/C,
Hart-Cannon, Rayburn, Dirksen,
State, Treasury
- 11:00 am Refreshment Break**
Capitol Lobby
- 11:30 am Session 6**
Capitol H/J, Capitol B/C,
Hart-Cannon, Rayburn, Dirksen,
State, Treasury
- 1:30 pm Luncheon**
Capitol E, F
- 3:00 pm Summary Session**
Capitol H/J, Capitol B/C,
Hart-Cannon, Rayburn, Dirksen,
State, Treasury
- 4:00 pm Closing Plenary**
Installation of ICUS XVI Conference
Chairman
Capitol E/F
- 6:00 pm ICF Reception**
Ballroom Lobby
(All Welcome)
- 7:00 pm Farewell Banquet**
Salon II, III, IV

Monday, December 1

- 5:00 am Continental Breakfast**
(early departure)
Salon I
- 7:00 am Breakfast**
Salon I

ICUS: Goals and Perspectives

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 the 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 the past fifteen years, 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."

Apart from the annual meeting, ICUS also has an impressive and expanding publication program, ICUS Books, which includes volumes that come from conference committees as well as other single-authored manuscripts. Moreover, an ICUS journal, dedicated to publishing quality articles that reflect ICUS' concern with interdisciplinary studies and values, is scheduled to begin publication very soon.

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. 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 with 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 future 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 annual 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 resource 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

There are two fundamental criteria which underly 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. In the past, conference themes have included, "The Responsibility of the Academic Community in the Search for Absolute Values" or "Modern Science and Moral Values." The most recent conference theme, "Absolute Values and the New Cultural Revolution," suggests a need for inquiry into the foundations for a new global vision grounded in comprehensive knowledge as well as in moral and spiritual values. This conference theme encourages 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.

The specific conference theme since 1984, "Absolute Values and the New Cultural Revolution," is interpreted by the participants as connoting a historic transition whose many dimensions we are only now discerning. As scholars with very diverse perspectives, the participants consider this transition to be a social process worthy of serious study and analysis. Participation in ICUS, however, does not entail commitment to, or involvement in any particular view of, this Cultural Revolution. Thus, 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

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 given to developing publishable book manuscripts from committee themes, securing specific contributions to the two fundamental ICUS themes, and enhancing the cross-disciplinary dialogue.

Conference Chronology



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

ICUS Planning Board

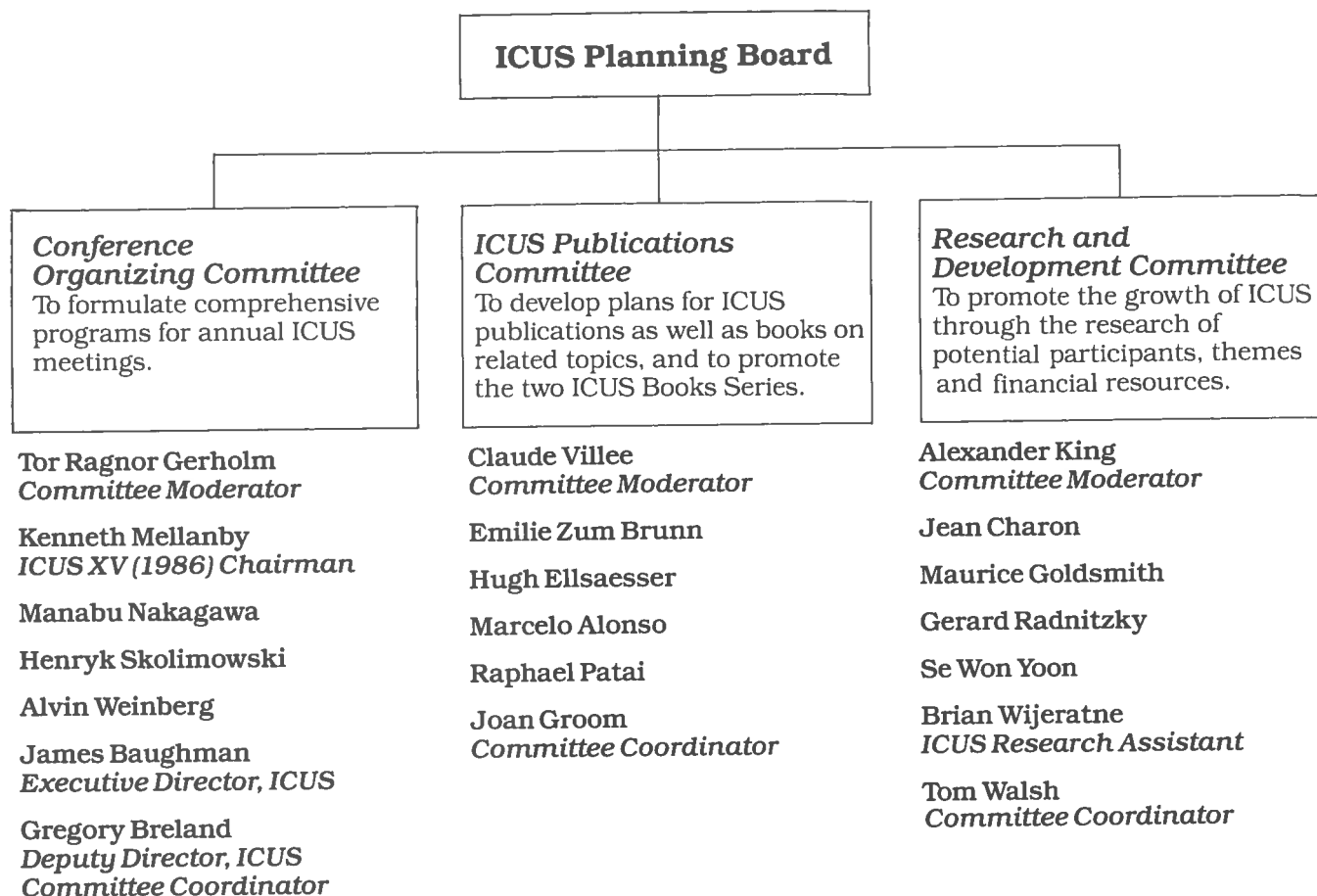


ICUS Planning Board members, together with the ICUS staff, at the Spring 1986 Planning Board meeting.

Left to right, front row: Sang Hun Lee, Alvin Weinberg, Kenneth Mellanby, Chung Hwan Kwak, Alexander King, Tor Ragnar Gerholm, Laura Lykes.

Second row: Neil Salonen, Masaya Okada, Akihiro Otani, Takeshi Furuta, Jack Hetema, Maurice Goldsmith, Mrs. Raphael Patai, Durwood Foster, Marcelo Alonso, Joan Groom, Mija Baughman, Cheryl Glass, James Baughman.

Third row: Hugh Spurgin, Brian Wijeratne, Theodore Shimmyo, Claude Villee, Thomas Walsh, Hugh Ellsaesser, Gerard Radnitzky, Raphael Patai, Paul Badham, Gregory Breland, Jean Charon, Jan Knappert, Henryk Skolimowski, Ken Stuart.



ICUS Publications

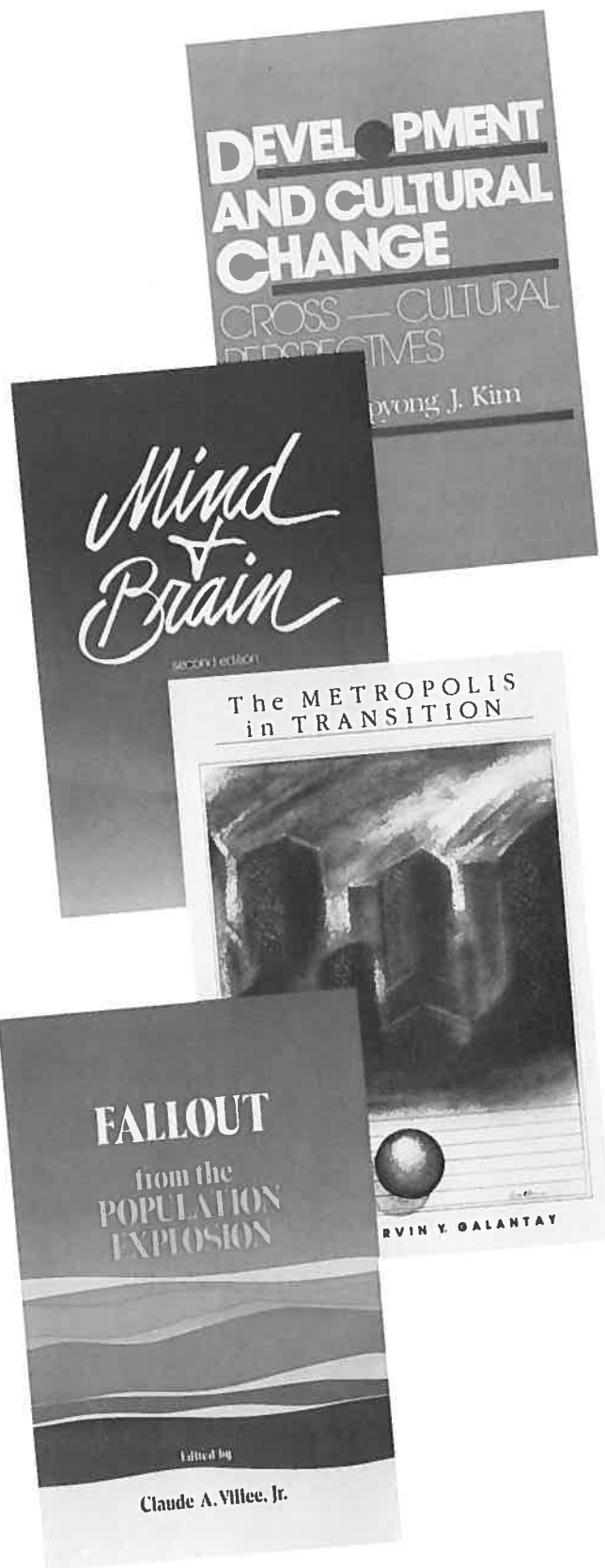
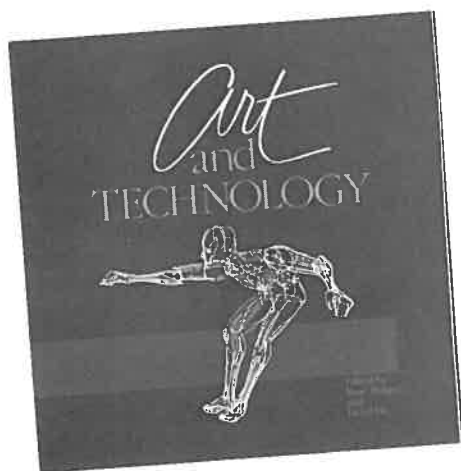
ICUS Books

Owing to the quality of scholarship, as well as the significance of the issues discussed, ICUS meetings have generated the need for and emergence of a substantial ICUS Publishing program. At the center of this program is ICUS Books, which is a major imprint of Paragon House Publishers. In keeping with the ICUS tradition, ICUS Books aims to advance human understanding by publishing manuscripts that approach specific topics with a special regard for the question of Science and Values and the Unity of Knowledge.

ICUS Books publishes both multi-authored and single authored volumes. The multi-authored volumes often derive from and are the fruits of the conference committee discussions on timely issues in the sciences. Hence, they tend to be interdisciplinary, addressing the overall subject of the volume from scientific, philosophical, historical, cultural and religious perspectives. The single authored books are both enlargements upon papers presented at ICUS and solicited manuscripts on subjects relating to the concerns of ICUS.

ICUS titles reflect the broad range of interests of the conference organizers and participants: *Mind and Brain*, *Art and Technology*, *Centripetal Forces in the Sciences*, *Fallout From the Population Explosion*, *Development and Cultural Change*, *Dominance, War and Aggression*. Numerous other titles are currently in the process of being published or considered for publication.

While the ICUS Books program allows for the publication of many single-authored and multi-authored volumes that derive from the ICUS community of scholars, it has been recognized for some time that there exists a need for a distinguished ICUS journal. It is our hope that in the very near future an ICUS journal will begin publication.



The Founder's Page



As a religious leader and scientist, I have long been interested in the concerns of religion and philosophy as well as science. These conferences which I have initiated stem from these concerns. I believe that there is a relationship between different academic fields whether a person be engaged in the contemplation of eternal values or whether he be observing an event. Indeed, how could it be possible to conceive of events occurring in space and time unless it be in relation to transcendent realities?

Religion and philosophy concern themselves with metaphysical and moral questions that have long occupied man's consciousness. Where do we come from? Why is there suffering? What is good and evil? Is there life after death? These questions are a concern to all of us no matter what our academics discipline.

Science limits itself to concern with the regularities of the universe and understanding things in space and time. As we all know, scientists have made tremendous advances in knowledge in the last few hundred years. However, science without a standard of value to guide it could be destructive. The possibility of nuclear war attests to this.

In my view, the whole range of knowledge from theology to the physical sciences has no meaning unless there can be an understood purpose and direction to this knowledge. The search for the standard of value is the search for this purpose. In this common quest, the knowledge of all the different fields of study relate to one another.

The ideas and findings of you scholars and scientists influence governments, the media and social trends—not to mention the direct influence you have on your students. Thus, you have a great responsibility to do what you can to improve the conditions of man and the world in which he lives. It is important for all attending this conference to recognize and appreciate the findings and developments which have been happening in your various pursuits, so that we might better understand the future.

Founder's Address
The Reverend Sun Myung Moon
ICUS VI, 1977
San Francisco

The International Cultural Foundation

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.

Funding

The International Cultural Foundation, which sponsors ICUS, is authorized to receive and is supported by contributions. Grateful appreciation is given to the Unification Church International for its financial support which makes these programs possible. Participation in the programs of ICF implies neither acceptance nor endorsement of the tenets and activities of the Unification Church.

Headquartered in New York, ICF, Inc. is a non-profit organization supported by contributions. It has thus far spawned the following affiliate organizations:

International Conference on the Unity of the Sciences (ICUS). An annual meeting of eminent scholars and scientists to discuss issues of *Unity of Knowledge and Science and Values*.

Professors World Peace Academy (PWPA). A membership organization of scholars working cooperatively for the peace and prosperity of the world.

Introductory Seminars on the Unification Movement (ISUM). A series of seminars teaching scholars about the ideas and activities of the Unification Movement.

The Washington Institute for Values in Public Policy (WI). A research institute in the nation's capital which focuses on the value issues of public-policy questions.

Paragon House Publishers (PHP). A publishing company which distributes works spanning the fields of religion, the humanities, the social and natural sciences.

The ICF Founder's Award

On the foundation of fourteen year's of support for scholarly activities, 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 cause 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 Founder's Award.

Other ICF Sponsored Programs

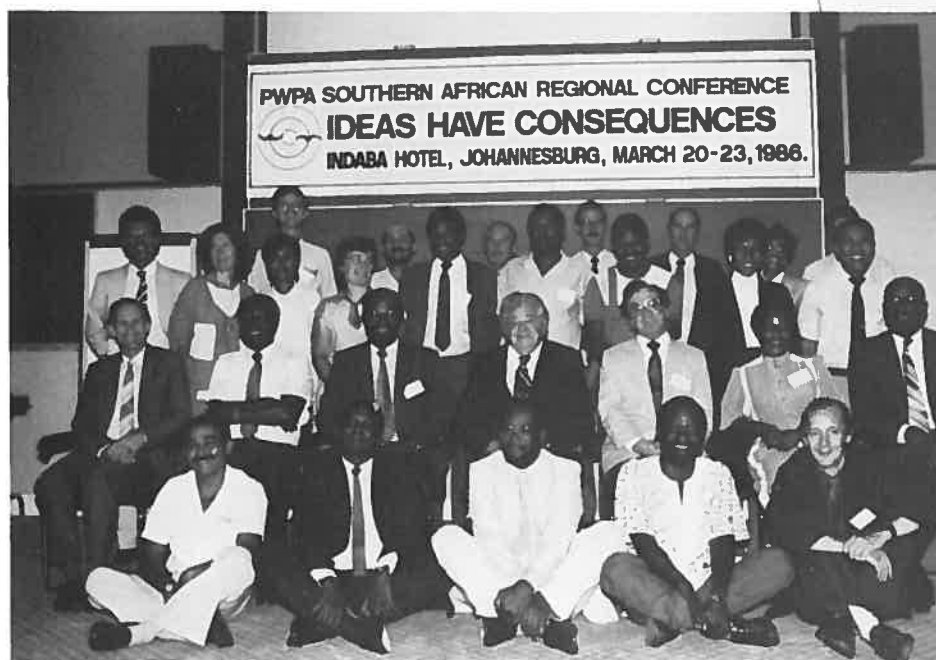
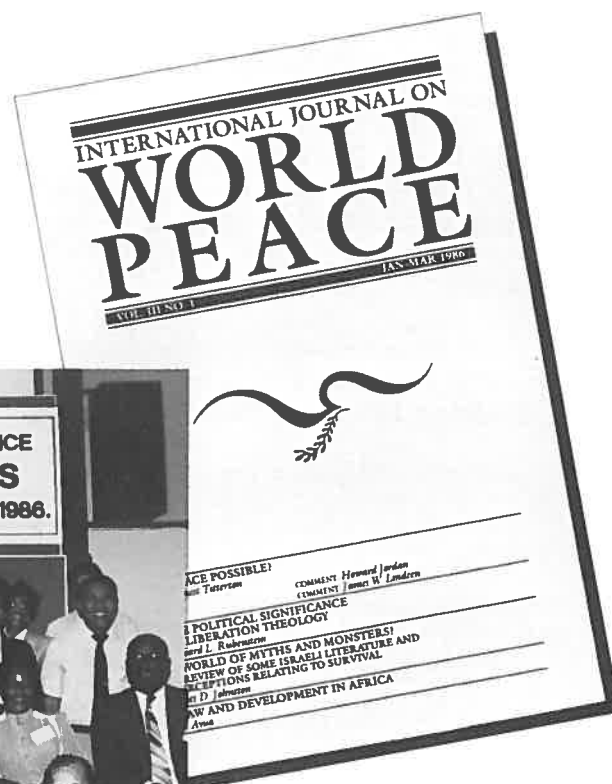
Professors World Peace Academy (PWPA)

The Professors World Peace Academy (PWPA) is an educational organization composed of scholars from a diversity of backgrounds, disciplines and political persuasions working cooperatively for world peace and human well-being. Through its interdisciplinary and intercultural approach to world problems, the Academy sponsors may programs where scholars from conflicting national backgrounds can meet and engage in open and non-violent discussion of realistic solutions to the problems of peace.

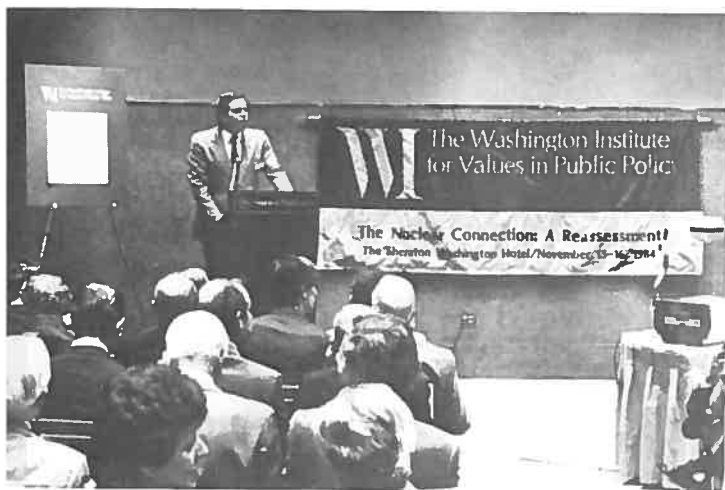
The Academy was founded by the Reverend Sun Myung Moon at a gathering of professors in Seoul, Korea in 1973. Activities soon spread to Japan and in 1974 the organization sponsored its First International Conference on World Peace (ICWP) with the theme "World Peace and Asia." The fifteenth ICWP was held in Tokyo in July 1985. As the scope of ICF and ICUS conferences expanded, PWPA spread throughout the world. In 1983 the first International Congress of PWPA, which had 72 national leaders in attendance, met in Seoul, Korea. In 1985, at the second International Congress in Geneva 100 PWPA leaders representing 82 nations met. PWPA now has chapters in over ninety nations from Argentina to Zimbabwe.

The approach of PWPA is broad, with its programs encompassing practically every field of human endeavor. The wide range of activities includes:

- Conferences, lectures and seminars for the academic community organized by national chapters.
- World congresses of PWPA leaders and experts on major issues bearing on world peace.
- Publication of conference proceedings, single author volumes and monographs relating to world peace.
- The quarterly *International Journal on World Peace*
- Involvement in the New *World and I* magazine.
- International exchange programs for scholars.
- A speakers bureau.
- Awarding of prizes to academicians for contributions to peace.
- Peace-related research projects.
- Other academic projects which might further the cause of world peace.



The Washington Institute for Values in Public Policy (WI)



The purpose of The Washington Institute for Values in Public Policy is to sponsor research that helps provide the information and fresh insights necessary for formulating policy in a democratic society.

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

The Washington Institute serves as a catalyst to increase the interaction among policy-makers and their academic counterparts. Each often deals with similar issues, from different yet equally valuable perspectives. What they often lack is the opportunity to benefit from an exchange of viewpoints and information.

The Washington Institute has sponsored more than 40 conferences, debates and forums where these experts share ideas. Results of research sponsored by the Institute have been disseminated through the publication of more than 85 books, monographs and occasional papers.

Programs of The Washington Institute during 1986 include the following conferences:

"Facing Up to U.S. Policy Choices in the Philippines"

"Ballistic Missile Defense: Defense-Protected Builddown"

"The Dissolving Alliance: The United States and the Future of Europe"

Forums include:

"African Views of U.S. Policy Toward Africa"

"Indo-U.S. Relations"

"Constitutional Values and Contemporary Policy"

Book Releases:

Beyond Constructive Engagement: United States Foreign Policy Toward Africa
Elliott P. Skinner, editor.

Human Rights in East Asia: A Cultural Perspective
James C. Hsiung, editor.

Ideology and American Experience
John K. Roth and Robert C. Whittemore, editors.

The Terrible Meek: Essays on Ideology, Religion and Revolution
Lonnie D. Kliever, editor.

Spirit Matters: The Worldwide Impact of Religion on Contemporary Politics
Richard L. Rubenstein, editor.

Economic Consequences of Mass Migration
Sidney Klein, editor.

Monographs include:

"Soviet Asian Strategy in the Brezhnev Era and Beyond"
by Richard C. Thornton.

"The Political Significance of Latin American Liberation Theology;
by Richard L. Rubenstein.

"El Salvador: A Case History of U.S. Media Influence Upon Public Attitudes Toward Central America"
by Daniel James.

"On the Influence of the U.S. Constitution Abroad"
by Albert P. Blaustein.

"India, the United States and the Indian Ocean"
by Selig S. Harrison.

Other ICF Sponsored Programs

Paragon House Publishers (PHP)

Paragon House, as independent publisher, is a producer of quality books from the religious, scientific and scholarly communities. One hundred titles are currently available in the humanities, theology, philosophy, political science and trans-disciplinary studies.

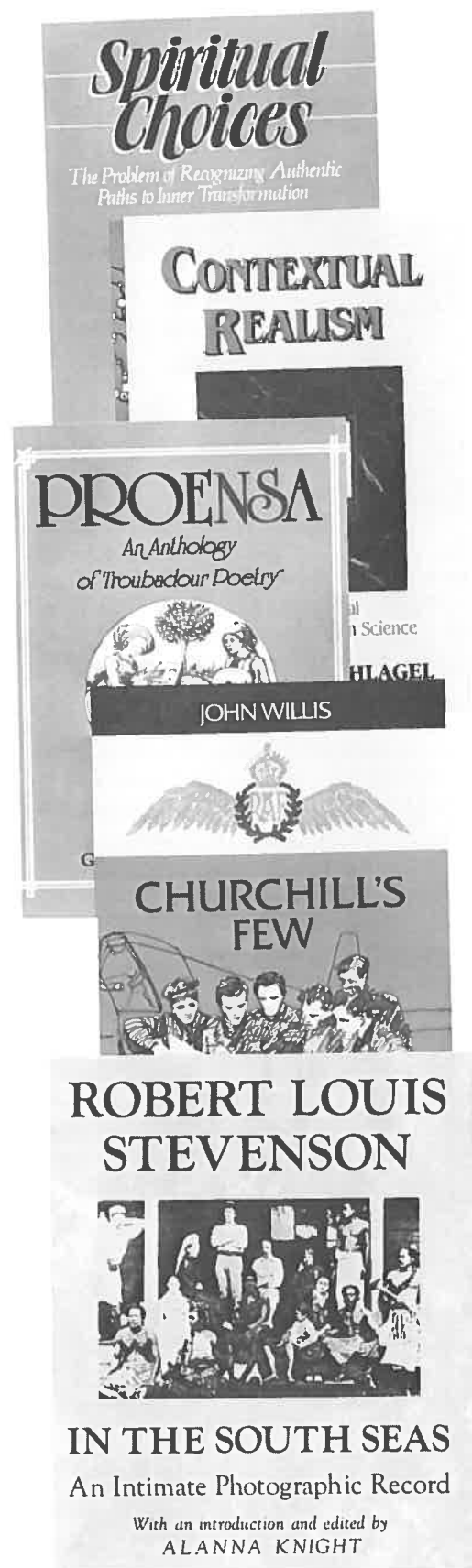
Paragon House was organized in 1982 as an outgrowth of the International Cultural Foundation. Books authored in connection with ICF-related organizations—The International Conference on the Unity of the Sciences, the Professors World Peace Academy, and the Washington Institute for Values in Public Policy—are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

Over the past year Paragon-ICUS has published proceedings from various ICUS conferences grouped topically into volumes on the subjects of education, oceanographic and atmospheric ecology, evolutionary theory and economics. Recently released titles include: *The Real and the Imaginary: A New Approach to Physics*, edited by Jean Charon; *Dominance, Aggression and War*, edited by Diane McGuinness; *Centripetal Forces in the Sciences*, edited by Gerard Radnitzky. Presently in production, the following volumes have evolved from ICUS XIV: *Modernization, Values and Education*, edited by John Oxenham; *The Universe and Its Origins*, edited by Fred Singer; *In Search of Global Philosophy*, edited by Durwood Foster; and *Organization and Change in Complex Systems*, edited by Marcelo Alonso.

In addition to its ICF-related imprint series, Paragon House publishes two other series, a general line of scholarly books to which it has added 40 new titles in 1986 and new ERA books, an imprint of the International Religious Foundation, which has thirty-five current titles in the field of religion.

Under the supervision of its independent advisory editorial 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. A representative of Paragon House is available at ICUS XV to confer with participants about initiating a publishing relationship with Paragon House.

Paragon House Publishers is located at 2 Dag Hammarskjöld Plaza, New York, NY 10017. Telephone: (212) 223-6433. Please feel free to write with any questions you may have. Address your enquiries to Mr. Ken Stuart, Editor-in-Chief.



The World & I

The World & I is an encyclopedic magazine that covers topics from many 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 in

Benjamin Franklin's words at the signing of the Declaration of Independence, "We must all hang together or most assuredly we shall all hang separately."

The World & I is designed to provide literate adults and intellectually engaged students with a cumulative and encyclopedic account of contemporary and modern life in the many different 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
- quality entertainment in a digestible form
- topics of conversation for every member of the family



's Urban Bias

the urbanization of Cairo and the problems gripping the city

In short, he considers the high rate of urbanization without industrialization a new pattern in modern society and a natural outcome of modern advances in technology.

It seems there is no doubt that urbanization, provided it takes place within the right limits and necessary prerequisites, is a healthy and natural phenomenon. It is a sign of progress on the national level, since it conforms with long-term global trends. However, measures to the growth of urbanization must be directed away from industrial development in order to relieve the strains on urban infrastructure and services, thereby avert a period of overurbanization.

A dramatic rise in the percentage of urban dwellers is shown in Table I. The major change came during World War II, when the percentage of those living in urban areas suddenly jumped to 30 percent. For a whole decade after that, the urbanization process continued rapidly. Then it began to slow down. This trend is expected to continue until, by the year 2100, Egypt's urban population will be 50 percent. This will give Egypt the same urbanization rate as the rest of the world by the beginning of the twenty-first century.



View of Cairo, the largest city in the Middle East and Africa.

The situation is complicated by the fact that Egypt's pattern of urbanization has been dominated by the growth of the country's capital, Cairo. The largest city in the Middle East and Africa, Cairo ranked the sixth largest among the capitals of the world in 1960. However, Egyptian regimes have been strongly urban biased for centuries, long before important substitute industrialization strategies were known. This urban bias has always meant and continues to mean a bias in favor of the capital.

Cairo became a city of one million inhabitants for the first time in 1927. In the following two decades it doubled in size, and by 1957 it occupied 30 percent of the country's habitable land. By 1960, the Cairo population rose to 2.1 million, which was more than 12 percent of the total population. And the growth continues unabated.

The Egyptian population grew 5.7 times in one century (1962-1975) while Cairo grew 12.2 times (see Table II). This means that Cairo's population grew at double the national rate.

It is significant that the Cairo government (65

square miles) no longer represents the true image of Cairo. Greater Cairo, or the metropolitan region, is today a vast area. The Greater Cairo area covers 1,000 square miles—a region 13.5 times the size of the Cairo government. Greater Cairo's population was about six million in 1960, in 1975 it rose to seven million, and by 1975 the number rose to eight million. The 1975 estimates show that Greater Cairo's population was 9.3 million or 28.2 percent of Egypt's total.

Table III shows Greater Cairo's population in 1975. By the year 2000, it may reach over 20 million. The total population of the country at that time is expected to reach 65 million—39 million of which will probably be located in urban areas. There are, therefore, Cairo undoubtedly will comprise about one-third of the total Egyptian population and at least half of the total urban mass. Greater Cairo now represents more than 20 percent of Egypt. Since most urban capitals are home to about one-third of their total population, Cairo stands double its proportionate size.

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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 nine years these seminars have been held in 25 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 ICUS and PWPA participants who expressed an interest and desire to learn more about the Movement, its Founder, the Reverend Sun Myung Moon, and the sponsorship of contributing organizations such as ICF and PWPA. The agenda consists of ten to twelve lectures given over three to four days and includes an "Outline of the Principle"—the religious teaching of Reverend Moon. These lectures are presented by doctoral scholars, Ph.D. students and Church Leaders.

The content of the lectures is clarified during informal discussion groups designed to encourage an exchange of ideas and to provide an opportunity to understand the lifestyle of those who live as active members of the Movement, and to give an

overview of the worldwide activities of the Movement. The lectures are supplemented by Photostide and video presentations covering various aspects of 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 the ICF Director of Seminars at ICF Headquarters: G.P.O. Box 1311, New York, NY 10116 (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
Gayana**

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



ICF Leadership

Founder

Sun Myung Moon

Executive Members

Chung Hwan Kwak
Neil A. Salonen
Michael Leone
Hugh Spurgin
Bo Hi Pak
Shunichiro Yoshida

Ex-Officio Members

Martin Porter
Paul Werner
Reiner Vincenz
Young Whi Kim
Henry Blanchard
Kae Hwan Kim
Dennis F. Orme
Osami Kuboki
Se-Won Moon

Senior Consultants



Mortan A. Kaplan
Professor of Political Science
University of Chicago
President
Professors World Peace Academy,
International



Kenneth Mellanby
Director Emeritus
Monk's Wood Experimental
Station
Huntingdon, England
Conference Chairman
Fourteenth International
Conference on the Unity of the
Sciences



Karl H. Pribram
Professor of Neuroscience
Departments of Psychology and of
Psychiatry and Behavioral
Sciences
Stanford University

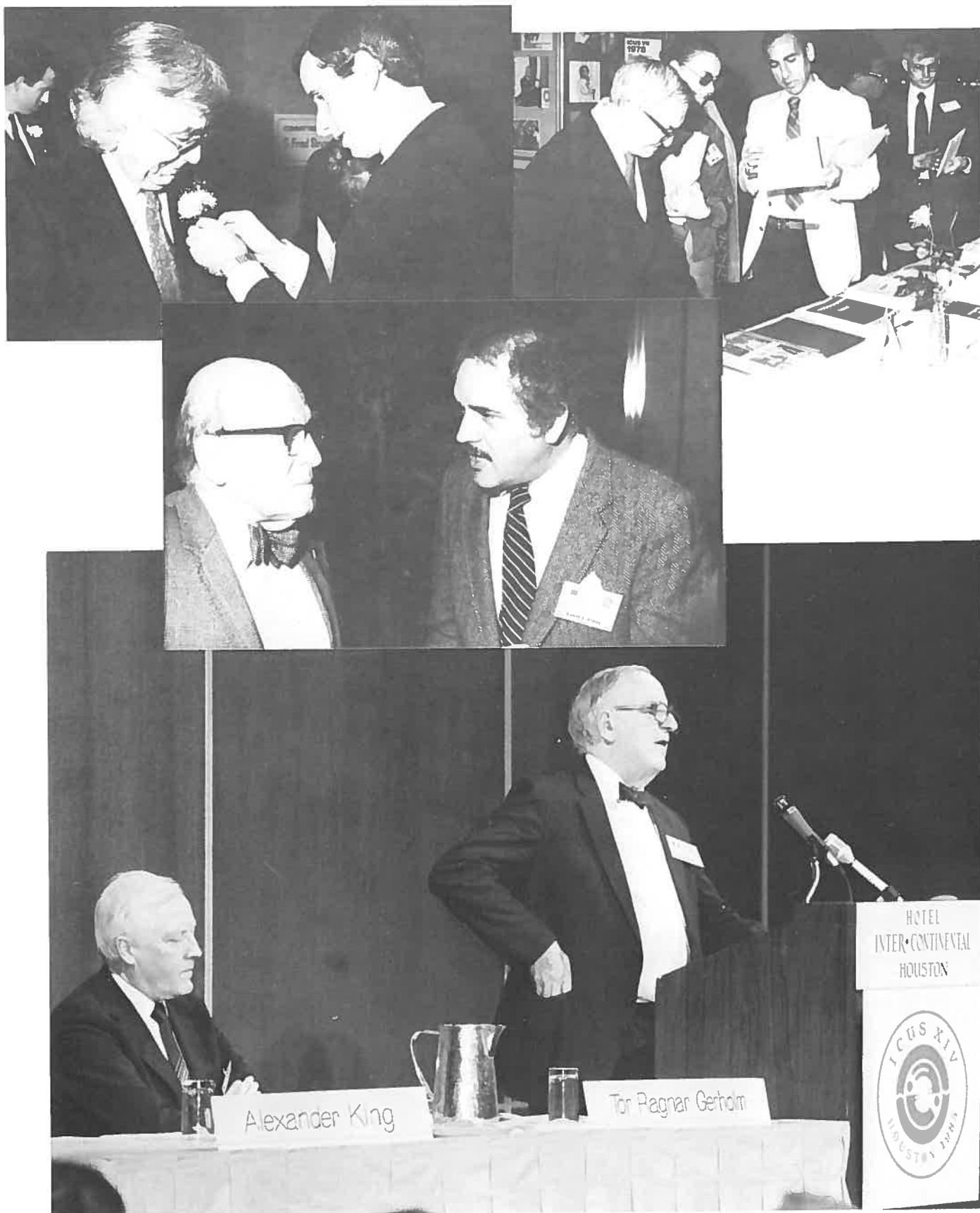


Richard L. Rubenstein
Robert O. Lawton Distinguished
Professor of Religion
The Florida State University
Tallahassee, Florida
President
Washington Institute for Values in
Public Policy



Frederick E. Sontag
Robert C. Denison Professor of
Philosophy
Pomona College
Claremont, California
Chairman of the Editorial Board
Paragon House Publishers

Scenes from ICUS XIV



In Memoriam

Robert S. Mulliken

Born June 7, 1968; Died October 31, 1986

Dr. Robert S. Mulliken served as Conference Chairman for ICUS IV in 1975. A distinguished physical chemist and Nobel Prize winner for his work on Molecular Orbital Theory, Dr. Mulliken made invaluable contributions to ICUS during his many years of participation in the conference.



Dr. Mulliken, known as "Mr. Molecule," was honored with the Nobel Prize for Chemistry in 1966 for theoretical studies of the chemical bond that holds atoms together in a molecule, a concept that he began working on in high school. Having devoted his life's work to the electron and the quantum theory, he was considered the creator of the molecular orbital theory.

The Royal Academy of Sciences in Stockholm cited him for his contributions to the understanding of molecules. He had, it said on the occasion, opened the way for studies on molecules "inaccessible to experiments, such as compounds of importance for life processes."

Actually, the complexity of his field of expertise was such that Dr. Mulliken did not even attempt to explain things for the layman when he won the Prize.

"Mulliken," noted Ugo Fano, a colleague and physicist at the University of Chicago, "did more to lay the foundation of and to develop molecular science than anyone else."

And Leon Stock, chairman of the university's Department of Chemistry, described him as "truly the father of modern theories of structural chemistry." Dr. Mulliken's concepts, he added, were "so original and creative that they are still very widely used."

At the time of his death, Dr. Mulliken, the recipient of numerous awards and honors, was the Ernest DeWitt Burton Distinguished Service Professor emeritus in the departments of physics and chemistry.

Robert Sanderson Mulliken was born in Newburyport, Mass., the son of Samuel P. Mulliken,

a professor of organic chemistry at the Massachusetts Institute of Technology. As a child, Dr. Mulliken showed more interest in nature than in molecules and became a lifelong amateur botanist who knew the names and characteristics of more wild flowers, ferns and other plants than some professionals.

Having graduated from M.I.T. in 1917, Dr. Mulliken earned his doctorate at the University of Chicago in 1921, with time out in World War I for research on war gases for the Army in Washington.

After pursuing his work in Chicago, at Harvard and New York University's Washington Square College, he returned to Chicago as an associate professor in 1928. He became a full professor of physics in 1931 and Ernest DeWitt Burton Distinguished Service professor in 1956, adding the chemistry professorship five years later.

Dr. Mulliken, on leave during World War II, played an important role in the development of the atomic bomb, coordinating eight projects doing related work throughout the country. Over the years, he also lectured at many other universities in the United States and overseas.

He was elected to the National Academy of Sciences at the age of 32 in 1928, shortly after he introduced his theory, which made him one of the youngest men to gain that distinction. His work and associations at the University of Chicago continued from that year until last spring, just before he turned 90.

Dr. Mulliken's wife, the former Mary Helen von Noé, died in 1975. He is survived by his daughter, Lucia Maria Heard of Arlington, two grandchildren and two great-grandchildren.

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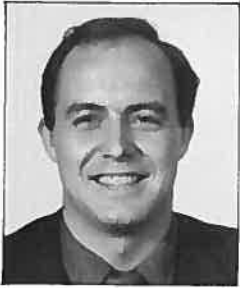


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