

- 9:30AM "A Christian Critique of Development Perspectives: Modernization and Dependency," Douglas **Kennard**, Warner Southern College, Lake Wales, Florida
- 10:00AM "Cross Cultural Medicine: Answering Indigenous Questions," Miriam **Adeney**, Seattle, Washington
- 10:30AM Break
- 11:00AM "Overproduction, a North American Problem," Gordon R. **Lewthwaite**, Northridge, California
- 11:30AM "North American Resources and World Needs in the Area of Eye Care," Roy B. **Clunes**, Corvallis, Oregon

12:15-1:15PM Lunch

PARALLEL SESSION C: PROBLEMS IN THE SOCIAL SCIENCES

- Chair: Russell Heddendorf (Kirshner Lecture Hall)
- 1:30PM "Is a Christian Social Science Possible?: Sociology as an Example," David O. **Moberg**, Dept. of Sociology, Marquette University, Milwaukee, Wisconsin
- 2:00PM "Motivational Theory in the Light of Scripture," Kenneth **Reddington**, Tatebayashi Shi, Gunma Ken Japan
- 2:30PM "Man and His Environment: The Perspective of a Biblical Anthropology," R. Clyde **McCone**, Long Beach, California
- 3:00PM Break
- 3:30PM "Spiritual Sins that Masquerade as Psychiatric Diseases and Symptoms," John M. **Vayhinger**, Anderson, Indiana
- 4:00PM "An Analysis of Family Breakdown: The Implications for the Christian Social Science Community," Lyle E. **Larson**, Dept. of Sociology, University of Alberta, Edmonton, Alberta

PARALLEL SESSION D: PROBLEMS IN PHILOSOPHY OF SCIENCE

- Chair: Harry Cook (H 218)
- 1:30PM "Teaching Science: Communicating a Hermeneutic," Richard H. **Bube**, Dept. of Material Science and Engineering, Stanford University, Stanford, California

- 2:00PM "The Responsibility of Science Educators to Uphold the Integrity of Science," David L. **Haury**, The Dalles, Oregon
- 2:30PM "What the Physical Sciences Have to Say to Biblical Studies," Fred **Jappe**, LaMesa, California
- 3:00PM Break
- 3:30PM Implications of the Philosophy of Quantum Physics," Donald L. **Grigsby**, School of Education, University of Alabama in Birmingham, Alabama
- 4:00PM "The Bible as Data," David L. **Dye**, Bellevue, Washington

PARALLEL SESSION E: SPECIAL TOPICS

- Chair: Hector Munn (H 215)
- 1:30PM "Gnosis, The False and the True," Edmund R. **Woodside**, Pasadena, California
- 2:00PM "Health Resources and Christian Responsibility," Jay **Hollman**, Cleveland Clinic Foundation, Cleveland, Ohio
- 2:30PM "Nutritional Concerns in Today's Society," Harold J. **Northup**, Pawcatuck, California
- 3:00PM Break
- 3:30PM "Para-psychological Dimensions of Spiritual Growth," David **Pinto**, Kalamazoo, Michigan
- 5:30-6:30PM Supper
- 7:00PM Film: "Footprints in Stone." This film presents evidence that men and dinosaurs lived at the same time in the past.
- 7:45PM Videotape: "Footprints in the Mind." This videotape argues that other interpretations are possible for the evidence presented in the above film.



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American Scientific Affiliation
P.O. Box J
Ipswich, Massachusetts 01938

Official Program

THIRTY-EIGHTH ANNUAL MEETING

of the

**AMERICAN
SCIENTIFIC
AFFILIATION**
(Incorporated)

AUGUST 5-8, 1983

GEORGE FOX COLLEGE
Newberg, Oregon

OFFICIAL PROGRAM

Thirty-eighth Meeting of the ASA
 Theme: North American Resources and World Needs
 August 5-8, 1983
 George Fox College, Newberg, Oregon

FRIDAY, AUGUST 5

- 4:00-6:00PM Registration
 6:00-7:00PM Supper
 7:15PM Opening Session (Kirshner Lecture Hall)
 Chair: Robert L. Herrmann,
 Executive Director, ASA
 Welcome: Ed Stevens, President, George
 Fox College
 Introduction: Howard Claassen, Chair
 of Program Committee
 7:30PM Address: Edwin Yamauchi, President
 of ASA *Bible - monotheistic*
 8:15PM Audio Visual Presentation: "The Christian's
 View of Science," Mark C. Biedebach, Dept.
 of Biology, California State University,
 Long Beach, California
 9:00PM Mixer, with refreshments available

SATURDAY, AUGUST 6

- 7:30-8:15AM Breakfast
 8:30AM Group Devotions

**PLENARY SESSION: CHRISTIAN RESPONSIBILITY
 IN TODAY'S WORLD**

Chair: Martin Price
 (Kirshner Lecture Hall)

- 9:00AM "Biblical Perspectives on Caring for the Earth
 and its Resources," Wesley Granberg-
 Michaelson, Missoula, Montana
 9:45AM "Christian Stewardship in an Ambiguous
 World," James Titus, Oregon Extension,
 Trinity College, Ashland, Oregon
 10:15AM Break
 10:45AM "Military and Social Funding in Third World
 Countries: Guns vs. Bread," Stanley W.
 Moore, Dept. of Political Science, Pepperdine
 University, Malibu, California
 11:30AM "From Nuclear Deterrence to Nuclear Freeze:
 The Journey of a Christian Biologist,"
 Wilbur L. Bullock, Durham, New Hampshire
 12:15- 1:00PM Lunch

**PARALLEL SESSION A: DEVELOPMENT STRATEGY--
 ONE**

- Chair: Miriam Adeney
 (Kirshner Lecture Hall)
 1:30PM "Research on World Hunger at Christian
 Colleges," Martin L. Price, Educ. Concerns
 and Health Organ., N. Ft. Myers, Florida
 2:00PM "Science Interns in the Third World,"
 Raymond Brand, Dept. of Biology,
 Wheaton College, Wheaton, Illinois
 2:30PM "Agricultural Science Manpower," Dennis
 R. Ridley, Cornell University, Ithaca,
 New York
 3:00PM Break
 3:30PM "Agromedical Approaches to Some Food
 and Health Problems in Third World Coun-
 tries," Virgil H. Freed, Head, Dept. of
 Chemistry, Oregon State University, Cor-
 vallis, Oregon

**PARALLEL SESSION B: TOPICS RELATED TO CRE-
 ATION AND EVOLUTION**

- Chair: David Willis
 (H 218)
 1:30PM "An Adult Education Curriculum on Cre-
 ation, Evolution and Christology," George
 L. Murphy, Wartburg Seminary, Dubuque,
 Iowa
 2:00PM "The Time Problem," H. Harold Hartzler,
 Mankato State University, Mankato, Minne-
 sota
 2:30PM "Religion in Geology Textbooks," Kenneth
 J. Van DeHlen, Dept. of Geology, Macomb
 Community College, Warren, Michigan
 3:00PM Break
 3:30PM "A Primer on Plate Tectonics," Kenneth
 J. Van DeHlen, Dept. of Geology, Macomb
 Community College, Warren, Michigan

NATIONAL BUSINESS MEETING OF THE ASA

- 4:00PM Everyone is invited to the Annual Business
 Meeting

ANNUAL BANQUET AT TILlicum RETREAT CENTER

- 6:30PM Salmon Bake Dinner (M.C., Walt Hearn)
 7:45PM First of Three Addresses on North American
 Attitudes toward Stewardship of the Earth.
 "The Natural World as a Frontier to be De-
 veloped," Loren Wilkinson

SUNDAY, AUGUST 7

- 8:00-9:00AM Breakfast
 9:00AM Group Devotions
 10:00AM Participation in local churches
 12:15-1:00PM Lunch

PLENARY SESSION

- Chair: Edwin Yamauchi
 (Kirshner Lecture Hall)
 1:30PM Second of Three Addresses: "The Natural
 World as a Wilderness to be Preserved,"
 Loren Wilkinson
 2:30PM Slide Presentation: "God's Abundant Re-
 sources for Those Working to Alleviate
 World Hunger," Martin L. Price, ECHO,
 N. Ft. Myers, Florida
 3:30-5:00PM **SPECIAL INTEREST DISCUSSION
 GROUPS.** Topics, leaders and locations
 to be announced at meeting
 5:30-6:30PM Supper

PLENARY SESSION

- Chair: Donald Munro
 (Kirshner Lecture Hall)
 7:30PM Third of Three Addresses: "The Natural
 World as a Garden to be Tended," Loren
 Wilkinson
 8:30PM Slide Presentation: "Geology of North-
 west Oregon," (a preview of the Mt. Hood-
 Columbia River Field Trip) Hector Munn,
 George Fox College, Newberg, Oregon

MONDAY, AUGUST 8

- 7:30-8:15AM Breakfast
 8:30AM Group Devotions

**PLENARY SESSION: DEVELOPMENT STRATEGY--
 TWO**

- Chair: Stanley Moore
 (Kirshner Lecture Hall)
 9:00AM "North American Resources and World
 Needs: Overcoming Sociological Barriers,"
 Jack O. Balswick, Dept. of Sociology,
 Fuller Theological Seminary, Pasadena,
 California

ABSTRACTS OF PAPERS TO BE PRESENTED
AT THE 1983 ANNUAL MEETING OF THE ASA
AUGUST 5-8

CROSS CULTURAL MEDICINE: ANSWERING INDIGENOUS QUESTIONS
Miriam Adeney, Seattle, WA 98133

Modern medicine is not received unquestioningly everywhere. This paper calls attention to cognitive, psychological, social, and economic factors which may be barriers to effective cross-cultural medical efforts. Similar barriers may appear not only in medical work but in any social change or development program.

For example, intellectuals have pointed out that modern medicine, when it precedes industrialization, increases population problems. Nationalists have viewed modern medicine as a front for the products of Western pharmaceutical companies. Ordinary villagers have eluded modern medical and public health efforts because often they have felt the programs were "scratching where they didn't itch," answering questions that they weren't asking but leaving unanswered questions that burned on. Specifically, people:

- * ask for a theology of suffering
- * ask how to die richly
- * ask that human relationships be taken seriously
- * ask that healing occur in a context of community support
- * ask that healing occur within the context of economic realities
- * ask for supernatural power, if any exists
- * ask for diagnosis and therapy that is reasonable in terms of their own worldview

Suggestions are made for changing cultural barriers into bridges for effective communication. Specific American values which may impede interaction are delineated. Illustrations of successful adaptation in the various dimensions are given. Appropriate technology; paramedic training programs; native healers' techniques; what we can learn from witchcraft; alternative decision-making units; and indigenous categories of sickness and medicines are discussed.

As we follow the One who went about doing good and healing all who were oppressed, we commend the Western impetus to disseminate healing throughout the world. At the same time, we are reminded that all people exist in the image of God, regardless of their standard of living. The uneducated in poor countries dominate nature less. Fewer alternative products, customs, and ideas are available to them. But they experience friendship, love, parenthood, creativity, learning, responsibility, choice, dignity, adventure, and relationship to God. They may have as many significant experiences as any modern Western man.

Certainly, we want to reduce suffering and mortality, and to increase wholeness. Yet, rather than plastering our programs with naive optimism, let us not be afraid at times to sit in silence with

the poor, to empathize, to share our mutual lack of answers. Then we may discover that sometimes a crisis is not a crisis, a failure is not a failure. We may become more open to partial successes, slow successes, and successes in terms which are not easily quantifiable.

NORTH AMERICAN RESOURCES AND WORLD NEEDS: OVERCOMING
SOCIOLOGICAL BARRIERS

Jack Balswick, Fuller Theological Seminary,
Pasadena, CA 91101

The basic thesis of this paper is that the major problem of economic needs among the poorer people of the world is not a technological one, but rather sociological. Most centrally this involves a perpetuation of dependency of the poorer countries by technologically richer ones. Attention is also given to the possible social and ideological barriers within a given country which prevents the emergence of economic development. In light of the relative importance of the various barriers to economic development in poorer countries, the paper concludes with a discussion of the appropriate types of social action on the part of the Christian community.

(This may not be the correct abstract): TITLE
Mark C. Biedebach, California State University
Long Beach, CA 90840

The subject includes an examination of historical aspects of the development of science since the time of Galileo, including a number of points of tension with the culture at large. The essentials of the scientific method are outlined with a view toward establishing its limitations as clearly as possible. Once this is done, it is easy to see the inconsistency of the contribution that has been drawn from science to support a materialistic world view. When the distinction is made between evolution and evolutionism (a'la C.S. Lewis and Bob Fischer) most of the "creation-evolution controversy" boils down to a "theism vs. materialism controversy" instead of a conflict between "scientific creation" and evolution.

TEACHING SCIENCE: COMMUNICATING A HERMENEUTIC

Richard H. Bube, Stanford University
Stanford, CA 94035

An essential perspective on the Christian teaching of science sees it as the communicating of a hermeneutic, a framework of interpretation that is at the same time powerful and limited. Three attitudes characterize the Christian approach to scientific hermeneutics; these may be described under the categories of "listening," "caring," and "discerning." A proper perception sees science as enabling us to do marvelous things and to understand the intricacies of a complex universe, but not to do everything and as leading us to destruction if we suppose it can. The maintaining of this tension is crucial for communication of an authentic scientific hermeneutic. Finally the Christian teaching of science must prepare

the student to discriminate against the aberrations of pseudo-science, whether invoked in defense of or in attack against the Christian faith. A Christian education that can prepare gifted young men and women in the practice of authentic science with the understanding of that science in the larger scheme of things and a secure faith in the Lord Jesus Christ can indeed be said to be blessed of God.

FROM NUCLEAR DETERRENCE TO NUCLEAR FREEZE:
Wilbur L. Bullock, University of New Hampshire
Durham, NH 03829

During the 1960's, like many of my fellow biologists and others, I became increasingly concerned with the numerous environmental crises that seemed to be developing at an alarming rate. At the time I saw nuclear war as an additional potential crisis, a form of war that threatened the environment and even civilization itself. However, I remembered all too well Neville Chamberlin's "peace in our time", a hope that was quickly and cruelly crushed with the Nazi aggression in Europe. Therefore, the "domino theory" and "nuclear deterrence" seemed a sound foundation for national policy. It was peace through terror.

In the past few years many respected scientists, medical doctors, and theologians (including some well-known evangelicals) have raised their voices in concern and protest. These people, through their lectures and publications, have led me to re-examine my position on nuclear weapons, particularly from the perspective of disease-oriented biologist and an evangelical Christian.

Having taught for many years a course that emphasized the horrors of the Black Death, yellow fever, and other epidemics, I realized that these were nothing compared to the known and potential horrors of nuclear war. The more I read the more I became convinced that nuclear stockpiles threatened rather than enhanced security. My reading of the writings of fellow Christians as well as more serious Bible study convinced me that as a Christian I could not condone what I as a biologist had concluded was the ultimate horror, the final epidemic. I don't believe that a nuclear freeze can be easily negotiated, but I can no longer accept nuclear deterrence as compatible with my commitment to Jesus Christ; neither my science nor my theology will allow it.

NORTH AMERICAN RESOURCES AND WORLD NEEDS IN THE AREA OF EYE CARE
Roy B. Clunes, Oregon State University
Corvallis, OR 97330

THE WORLD NEED

"Where there is no vision the people perish" - both spiritually and physically.

A slide presentation (80 slides, 30 minutes) showing eye projects into Latin American countries such as Honduras, the Dominican

Republic, Haiti, etc. Sponsored by the Medical Group Missions of the Christian Medical Society.

From 1969 - 1979 the projects grew from a limited eye project to Honduras in '69 to a group of highly organized, well equipped, highly skilled professional volunteers doing the screening of over 7,000 people, prescribing 5,735 pairs of glasses and performing 165 eye operations in the Dominican Republic in '79. The cost of such eye care can be prohibitive to most in countries where the annual per capita income can be less than \$500.00.

NORTH AMERICAN RESOURCES

Involved were Optometrists, Ophthalmologists, Anesthesiologists, Physicians, nurses, technicians, wives, children, college students and medical school students from Canada, and the USA and Mexico.

Medical supplies have been obtained from Pharmaceutical companies in the U.S. and Canada. Also from 'MAP' and other medically oriented mission agencies.

Equipment has come from many sources, even a fully equipped mobile hospital unit from the USA.

Optical supplies included over 60,000 used eye glasses carefully marked and stored.

HOW CAN NORTH AMERICAN RESOURCES BE CHANNELLED?

One of the best re-cycling programs is the collection of used eye glasses. Only by stocking thousands of eye glasses and storing and retrieving them by computer means can immediate correction of vision be done by professionals in eye care. You can be that person in your community in North America to bring vision to needy persons in Latin America by organizing the collection of otherwise useless eyeglasses. The need and the results have to be seen to be believed.

THE BIBLE AS DATA
David L. Dye,
Bellevue, WA 98006

Data, i.e., observables, have a unique (not to say "sacred") place in the processes of scientific inquiry. With slight conceptual adaptations, it is helpful to view the Bible as revealed, spiritual world data, in analogy with data of the physical world. This view provides a basis for and means of illuminating discussions and resolutions of the traditional Bible-science conflicts. Also it can help evangelicals who, by definition accept Biblical data, to resolve value-judgment conflicts such as the political/moral/environmental/technological issues discussed at this conference. This way of thinking about the Bible is particularly useful in reminding all of us of the distinctions that must be made between data and their interpretation, and thereby helps in reducing dogmatism and aiding communication.

IMPLICATIONS OF THE PHILOSOPHY OF QUANTUM PHYSICS

Donald L. Grigsby, University of Alabama
Birmingham, AL 35226

The physical implications of quantum physics are hardly debatable. The micro-miniaturizations of electronic circuitry is just one example. The philosophical implications of quantum physics are quite another matter. The widespread disagreements on the philosophical interpretations of quantum formalism have produced implications more profound than those since the rise of empirical science. One such implication is a form of reductionism. Not only are the statistical methods of quantum physics being touted for application elsewhere, the epistemology associated with this methodology is also being claimed as valid elsewhere.

A second area in which these implications are emerging is found in the ontology associated with the statistical nature of quantum physics. Basically, the question emerges as to what is real. One concept is that the reality is the physical phenomena being described by the statistical distributions. However, some are declaring that the distribution is the physical reality and not that which it describes.

Finally, the objective characteristics of reality are being questioned. Based on the uncertainty principle where only one characteristic of a particle may be measured (momentum or position, but not both) observer created reality is introduced. Referring again to a form of reductionism this principle is already having implications in some sectors of American Science and portends more widespread applications.

But what does this have to do with the North American resources and world needs? Generally, the tenets of Western Science and Philosophy appear to be the bases to deal adequately with these implications and finally, the American Scientific Affiliation provides an optimum forum for their discussion.

THE RESPONSIBILITY OF SCIENCE EDUCATORS TO UPHOLD THE INTEGRITY OF SCIENCE

David L. Haury, Judson Baptist College
The Dalles, OR 97058

One of the great resources of our day is a large store of empirical knowledge. Using the gift of scientific inquiry, we have accumulated a wealth of information about creation, information that reveals the handiwork of God, that enables us to improve human living conditions, and that makes it possible for us to mitigate the effects of our activities on the environment. There is evidence, however, that the resource is being abused.

Among the abuses are obstacles to scientific literacy within educational institutions. Students fail to acquire a functional grasp of essential concepts and unifying principles in science, and

perhaps more unfortunate, they fail to understand the nature of scientific enterprise. As adults, they emerge from schools ill-prepared to draw from the reservoir of empirical knowledge personally, and unable to judge accurately the legitimacy of scientific endeavors.

For Christians there is an additional obstacle. Beyond a failure to understand the concepts and nature of science, many are skeptical of the processes of inductive science. In homes, through media, and in churches, young Christians learn to fear empirical knowledge and doubt our human ability to interpret the revelations of nature.

This is a serious condition which we as Evangelicals must address more forthrightly. Like Galileo, we must persuade the authorities within our spheres of influence to acknowledge the revelation of nature to be trustworthy, and to acknowledge that we as humans can err in interpreting the revelations of both nature and Scripture. We must help the next generation integrate more functionally faith and empirical knowledge, and lay aside fruitless and misguided controversy.

HEALTH RESOURCES AND CHRISTIAN RESPONSIBILITY

Jay Hollman

Atlanta, GA 30322

Health care costs are rising faster than the gross national product. Such a disproportionate rise will not be forever tolerated, but will likely be opposed by government restriction. It is uncertain how this restriction will come, but the possibilities include such things as a two tiered health care such as exists in the Third World with the wealthy having one standard of care, the the poor another. Another possible reaction to the pressures would be increased pressure for abortion, infanticide, euthanasia and eugenics. Such reactions would cheapen the sacredness of human life.

Against these alternatives the Christian in health care or health care research is called to make some difficult decisions. There are some areas of the health care industry that are of dubious value: proprietary nursing homes and hospitals which are charged not only to provide health care, but also to make a profit for the stockholders. The difference between the health care expenditures of the Western World and the Third World is both growing and shameful. Is human life truly priceless? Can we afford the estimated \$5.5 billion annually for the 66,000 Americans who would qualify for an artificial heart?

Christian alternatives include: individual Christian physicians controlling health care costs and their own practice size, upholding rigorous indications for procedures and diagnostic tests, making new technologies as cost effective as possible, eliminating technologic junk that adds little to patient care, reward people for being healthy and not for being ill. There is a need for increased individual responsibility for one's own health care.

THE TIME PROBLEM
H. Harold Hartzler, Mankato State University
Mankato, MN 56001

Time is usually considered to be one of the fundamental constants useful to describe a variety of quantities used in the physical sciences. Others are space and matter. We think of the flow of time as being constant. Yet experience tells us that the flow of time is not always the same. Sometimes it accelerates. At other times it slows up.

Factors both external to ourselves and some that are internal seem to have an influence on the rate of the flow of time. Man lives three score years and ten. That period is long relative to the life of an insect. If we lived as long as the pre-flood patriarchs, a geological age might appear to us as not quite such a long period. To those who suffer from progeria, the presently allotted span of life must appear as the pre-flood patriarchs do to us.

Augustine observed that time was created when the universe was created. Time does not exist in its own right. Einstein stated it this way: "If we assume that all matter were to disappear from the world, then, before relativity, one believed that space and time would continue existing in an empty world. But according to the Theory of Relativity, if matter disappeared, there would not longer be any space or time."

After briefly discussing some psychological, philosophical and scientific aspects of time, this paper examines some of the arguments for a rather young universe. It is interesting that a large number of articles concerning dating the earth and the universe have appeared in the Journal ASA and in the CRS Quarterly.

Seven answers for the age of the universe are discussed. These vary from the 6000 years commonly mentioned, through the 4.5×10^9 years, the answer of many scientists today, to the concept that the universe had no beginning. Since it has been indicated that time has subjective elements involved, perhaps the real age of the universe is a fiction.

WHAT THE PHYSICAL SCIENCES HAVE TO
SAY TO BIBLICAL STUDIES
Fred Jappe, La Mesa, CA 92041

The discipline of the physical sciences can provide valuable insights to the field of Biblical studies. Five areas of contributions will be addressed in this paper. They are in the areas of 1) probabilities, 2) certainty and uncertainty of statements, 3) treating people as logic machines, 4) failure to test, and 5) the lack of appreciation for the value of the negative in testing theories.

A CHRISTIAN CRITIQUE OF DEVELOPMENT PERSPECTIVES:
MODERNIZATION AND DEPENDENCY
Douglas B. Kennard, Warner Southern College

Modernization and dependency have become major competing paradigms in international development during the last two decades. Modernization, or the "classical development paradigm" is rooted in equilibrium theory and utilitarianism. Development is conceived of transferring technology, skills and "achievement" attitudes from the industrialized countries to the lesser developed ones for bringing the latter out of their backwardness. The dependency perspective, on the other hand, involves some sort of commitment to Marxist assumptions: here, it is maintained that the developed countries have enriched themselves at the expense of the lesser developed ones first through colonial exploitation and then later through monopoly capitalism and imperialism. In this case, exploitation relations must be broken in order for true development to occur.

This paper will present a Christian critique of both perspectives and attempt to highlight their strengths and limitations in light of Biblical assumptions relating to the social consequences of technology use, man's ability to historically interpret social change, and the role of the creature/Creator distinction in these issues. Because of the distorting effects of the fall and our creaturely finiteness, our abilities to control the use of technology for development and social change are bounded at certain points in space and time. Yet, in attempting to absolutize any one perspective at a given historical-cultural space and time coordinate blinds us to the true needs of others who live in different socio-cultural contexts.

As part of this critique some alternative suggestions for understanding Third World development will be made which share the concerns of both modernization and dependency perspectives. Liberation theology will also be evaluated as one strategy of applying faith in practice.

AN ANALYSIS OF FAMILY BREAKDOWN:
THE IMPLICATIONS FOR THE SOCIAL SCIENCE COMMUNITY
Lyle E. Larson, University of Alberta
Alberta, Canada

The purpose of this paper is twofold. The first section will review census and vital statistics evidence on marriage and family patterns and trends in the United States and Canada. In addition, a concise but accurate summary of current research evidence (as drawn from surveys, interviews, and related technologies typically employed in social science research) on marriage and family relationships will be presented. The implications of these patterns in understanding and interpreting the nature of family life, and the processes of human development will be discussed.

The second section of the paper will review the issues and alternatives these considerations pose for Christian Social Scientists as teachers, researchers, and advocates in both the Christian and secular communities.

OVERPRODUCTION: A NORTH AMERICAN PROBLEM
Gordon R. Lewthwaite, California State University
Northridge, CA 91324

One facet of the interface between "North American Resources and World Needs" involves chronic overproduction of foodstuffs. Characteristically, the issue is presented in terms of overproduction of people and underproduction of goods, and not a few Christians have espoused neo Malthusianism. Yet this involves oversimplification, if not gross misrepresentation. Despite "standing room only," the entire population of the globe could stand on one-quarter of Los Angeles County: despite widespread starvation, this is far from coincidental with overcrowded populations. Potentially vast resources are overlooked or needlessly exploited in destructive fashion: resources are both perceived and utilized within the limitations and opportunities of particular cultural systems. North American productivity, only partially related to market demand, generates surpluses which, by dumping or donation, disrupt the vulnerable economies of other exporters and raise serious and complex questions regarding the virtues of generosity.

MAN AND HIS ENVIRONMENT: THE PERSPECTIVE OF BIBLICAL ANTHROPOLOGY
R. Clyde McCone
Long Beach, CA 90815

The role of the environment through natural selection in evolutionary explanation of human origins appears to be as out of touch with the environmental problems of modern man as it is with the Biblical origins of man. The Bible not only sheds light on the origins of human cultures but on the modern problem of those cultures. Cultures are human adaptations to the natural environment. The Bible suggests at least two kinds of those cultures, civilization and familization as coming out of Babel. Civilization's possessive conquest of the earth has moved eastward. North America is one of their meeting grounds.

A crucial dimension of the environmental problems of Western civilization is spiritual. This appears to be hidden from Christians as well as unbelievers. "Ye cannot serve God and Mammon: is a spiritual principle which cannot be violated without reaping a disastrous environmental harvest. The spiritual and moral processes involved in this harvest--not predictions of events in the 1980's--are found in the opening of the seven seals of the Apocalypse.

IS A "CHRISTIAN SOCIAL SCIENCE" POSSIBLE?:
SOCIOLOGY AS AN EXAMPLE
David O. Moberg, Marquette University
Milwaukee, WI 53233

Numerous theoretical, methodological, ideological, applied, and other perspectives within each of the social sciences are sometimes given labels which seem to imply that they are distinctive sub-disciplines. In contemporary society the term "Christian" is ambiguous; currently at least five types of definitions of Christians (civilizational, societal, inheritance, ethical, and committed) are often confused with each other. Requirements for a "Christian Social Science" include uniquely Christian presuppositions, values, theories, methods, subject matter, and applications. That there are clearly Christian perspectives within sociology cannot be denied, and many sociologists are Christians, but whether this creates a "Christian Sociology" is problematic.

NATIONAL SECURITY, THIRD WORLD DEVELOPMENT AND
MILITARY AND SOCIAL PRIORITIES
Stanley W. Moore, Pepperdine University
Malibu, CA 90265

Politics has been defined as "who gets, what, when and where." It has also been defined as the allocation of values for a society. Today it is the allocation of scarce resources, of who does not get in our society and around the world. The United States budget for 1984 gives priority, in terms of \$265 billion, to our military establishment, in contrast to less than \$9 billion for economic and social development in the third world. Are these priorities and values wise ones? Are they Christian? Will they actually buy us greater security?

The paper examines briefly the historical search for security, presents the objective and subjective criteria for a viable collective security system, and examines the probability of meeting the prerequisites for such a system in today's international milieu. The focus then switches to third world development needs and examines the barriers confronting the newer states simply because they are latecomers to development. The role of multinational corporations in both aiding and retarding development is examined and the issue is raised as to the responsibility of the United States for the behavior of, and the resulting consequences of, basically unregulated economic actions on the part of roughly half of the multinational corporations that are American based.

United States military sales and loans to third world governments are examined in light of the fact that most of these are dictatorships suppressing their citizens. What is the American church's responsibility to mold and direct the spending priorities of our nation?

GEOLOGY OF NORTHWEST OREGON
Hector Munn, George Fox College
Newburg, OR 97132

Western Oregon and Washington geology is seen as a classic example of plate collision with subduction. The coast range is the crustal surface of the Juan de Fuca plate as it was subducted under the North American plate. The model continues to explain that as the subducted edge pushed downward and melted it pushed up to the surface with at least three periods of volcanism. The Western Cascades, the Columbia River flood basalt, and High Cascades resulted. The Willamette Valley between the Coast Range and the Cascades gives a record of the pre-collision period when the edge of the North American plate was a shallow sea which was uplifted in the Miocene epoch. The pleistocene epoch provided glacial sculpturing of the High Cascades and as it ended, produced an enormous flood that carried sediments from Eastern Washington down the Columbia gorge to the Willamette Valley.

AN ADULT EDUCATION CURRICULUM ON
CREATION, EVOLUTION AND CHRISTOLOGY
George L. Murphy, Wartburg Seminary
Dubuque, IA 52001

I report here on curriculum material dealing with creation and evolution which I developed for adult religious education for my M.Div. thesis at Wartburg Seminary. The doctrine that God is creator of all things and the scientific understanding of evolution are both taken seriously. Christ is the center who allows those themes to be held together. The approach is christological, and not concerned simply with "Genesis and geology". Major topics are as follows:

The biblical doctrine of creation. Creation out of nothing is "The Trademark of God", seen not only "in the beginning" but also, e.g., in Exodus and justification of the ungodly. This mark is ultimately seen to be the sign of the cross.

The scientific picture of the universe. The ideas of modern cosmology and biological evolution are discussed. Darwinian evolution, development of life through competition and extinction, has precisely the "creation out of nothing" trademark which the Bible always associates with God's creative work.

Trouble spots. Some of the tensions between theology and science in the area of creation and evolution are examined.

The mystery of evil. How can we think of the origins of evil, sin, and death in an evolutionary context? Such questions are difficult, and some possible ways of dealing with them are suggested.

Christ the center. We look at the universe from the standpoint of the cross. The church's teachings about the person and work of Christ illuminate what science tells us about our relationship with

the rest of the universe. From this we can show that evolution is theologically superior to "creationism".

What difference does it all make? The ethical, social, and eschatological consequences of a Christian view of evolution are considered.

Some comments will be made on the educational methodology used in this work.

NUTRITIONAL CONCERNS IN TODAY'S SOCIETY

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There is an increasing awareness of the effects of nutrition on health, disease, problem behavior, rehabilitation, and longevity. The mechanism of nutrition in the human body is explained. The staggering nutritional problems of developing countries is presented together with their causes. The efforts of the international organization CHEMRAWN (Chemical Research Applies to World Needs) to increase the world food supply and make it available where needed are summarized. The nutritional concerns in our own country with its food surpluses, uneven food distribution, and high incidence of nutritionally related deaths are discussed. The effects of good nutrition on disease and health are given with several examples. The various kinds of food are classified with regard to their harmful or beneficial effects on human health. The effects of aging, cooking, canning, freezing, and exposure to air and light of various types of foods are enumerated. Important information is given concerning the principal vitamins and minerals, including augmenting nutrients, anti-vitamins, food sources, bodily parts affected, bodily parts facilitated, deficiency symptoms, and therapeutic applications. A summary is given of the various nutritional methods of reducing the risk of contraction and alleviating various diseases. Nutrition and other factors that produce excellent health and longevity without senility are discussed. The increasing amount of crime, hyperactivity, and short tempers are caused to a large extent by alcohol, drugs, allergies, chemical pollutants, some types of fluorescent lighting, excessive sugar intake, and a deficiency of needed foods and supplements. Improved nutrition has had dramatic beneficial effects on the behavior and rehabilitation of prison inmates. A detailed bibliography is given.

GOD'S ABUNDANT RESOURCES FOR THOSE WORKING TO ALLEVIATE WORLD HUNGER

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Few of us would even consider accepting a diet containing only plants that were native to the area in which we live. It is said that only 9 common vegetables were native to this hemisphere and all of them originated in or south of Mexico. The introduction of soybeans during this century transformed agriculture. The

introduction of potatoes transferred Ireland. There is still a long way to go in introducing new plants in tropical countries where many of the world's hungry people live. The National Academy of Sciences has identified many plants for introduction and trial around the tropical world. They call them "under-exploited plants."

Many missionaries and scientists are interested in trying these plants, but cannot find a source of seed. The Educational Concerns for Hunger Organization (ECHO) has established a seed bank for free distribution of many of these seeds. We also coordinated information on performance of various introductions by missionaries.

We have taken photographs of many of these plants at their prime stage of growth on our five acre farm in southern Florida. This talk will be an illustrated lecture on some of God's abundant resources. Included will be winged beans, jicama, edible hibiscus, amaranth, tepary beans, wax gourd and others.

RESEARCH OF WORLD HUNGER AT CHRISTIAN COLLEGE

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Most Christian colleges do not conceive of themselves as potential centers of excellence for applied research and especially not in the area of agriculture. I submit that their potential for both doing research that would be helpful to Christian development workers and for instilling a global consciousness in their students is enormous.

The usual objection is that land grant universities are doing so much that the contribution of a Christian college would be only a drop in a bucket. These universities make an enormous contribution. But most of their efforts are directed toward something other than problems of the millions of subsistence or very small scale farmers. Many areas of applied research that could be of significant help in supporting Christian missions cannot be addressed at these universities for two reasons. (1) They must obtain large grants before they can do anything. (2) Research is done by graduate students who must stick to a narrow discipline, while most applied problems require interdisciplinary research.

The Educational Concerns for Hunger Organization (ECHO) which I direct is interested in helping Christian colleges identify potential research topics. We are in communication with roughly 300 missionaries who are involved in some way with food production. This provides the base for both identifying practical problems and for getting results quickly to those who can use them.

Will Christian colleges not have the same budgetary problems as universities? Those who are doing research at Christian colleges now have nearly all found ways to do research with much more modest means. Projects must be selected that can be done within a budget that is available. It is suggested that one untapped source of funds is the Christian public. People might be willing to give to support research on hunger at their local college as they are for research on disease at unknown universities.

PARA-PSYCHOLOGICAL DIMENSIONS OF SPIRITUAL GROWTH

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The means and manner of sharing and of being present to all of humanity, must advance along a common line which can be seen as valid by everyone who desires to be open to possibilities. The common line upon which all of humanity must focus is the direction of greatest truth, a challenged truth, a comprehensive truth, a truth which is honest.

Through a re-born scientific attitude, more honest research is being given to the "hidden" powers of the mind. Slowly attention is being given to those areas for evidence once only considered in the realm of miracles. Out of a wider horizon will come a new vision of what science has to offer the spirit which will result in a sharing in which humanity's spirituality might advance a new formulation of the scientific method. The desire is not to focus on defence or validity based on a particular method of examination but in a direction of discovery based on a merging of science and human spirit, which by its very nature is open-ended, whose only objective is truth and the sharing of such. At this point the area in which this merging is most noticed is the field of para-psychology. Any order examination based on the established scientific method must give certain new acceptable limits to the mind and the consciousness of humanity. The conscious-awareness of the human species must give to the scientific discipline evidenced proof that the steps advancing a theory are indeed provable. In this one area alone is seen the opportunity to advance the growth of not only science but the human spirit by establishing a theoretical basis for the creditable study of the "hidden" powers of the mind.

The willingness to be open and the desire for establishing relationships between all elements of existence advance a realization that a new species person is emerging. A true synthesis will require that no possibility be rejected as being acceptable to human movement without being subjected to the most honest and complete examination possible within this space-time continuum. Through such sharing the realms of the spirit and the boundaries of science will merge opening before human vision the continuums of growth and that species of "HOMO-" can look to the future and witness the next challenge of The Human Adventure.

MOTIVATIONAL THEORY IN THE LIGHT OF SCRIPTURE

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God is concerned about people's motives - Proverbs 16:2

Scripture presents what appears to be an 'all-inclusive' motivation theory in I John 2:16. People are motivated to (1) do, (2) have, and (3) be. People seek experiences, seek to possess things, and seek to be something.*

(* "Pride of life in I John 2:16 can be translated "arrogant assumption." This seems to be the point where Lucifer fell - Ezekiel 28. It is pride in what I am, as well as in what I can do. Humans seek education, fame, position and titles.)

This 3-fold motivation is illustrated in the temptations of Eve (Genesis 3:5-7) and Jesus (Matthew 4:1-11). This motive of 'self-gain' (to do, have, be) is a temptation only when fulfillment is sought outside the will of God. Jesus acted from these same motives: to do in John 6:38, to have in John 17:6,24, and to be in John 8:46,58; 13:13. Jesus also appeals to these same motives in us. All three are illustrated in Ecclesiastes and in II Timothy 3:2-4.

Scripture also presents approval-seeking as a basic motive in John 12:42-43. Whether this is a distinctly different motive from self-gain, or whether gaining approval of men is an instrumental value, is not clear. Approval-seeking is a temptation when fulfillment is sought outside the will of God - Galatians 1:10. Approval should be sought first from God and His approval should take precedence over all human approval - II Corinthians 5.

How do these Bible teachings fit in with current psychological theory? One example is Maslow's Hierarchy of Needs. II Kings 6:28-29 strongly supports the theory behind this hierarchy. Maslow's lowest levels of need are physical and safety needs, and fit the motive 'to do.' (Here Scripture also supports traditional please-pain psychology.) Maslow's higher levels of belongingness, love, self-esteem and self-actualization needs fit well the motive 'to be.' This hierarchy does not seem to include the motive 'to have,' but human experience does attest to this motive.

Maslow's belongingness and love needs seem to fit approval-seeking well.

My own research with Japanese demonstrates that 'self-esteem' and 'self-concept' are antecedents of human behavior. These manifest the need 'to be.'

PLOWSHARES AND TEST TUBES: THE ROLE OF AGRICULTURAL EXPERIMENT
STATIONS IN PRODUCING AGRICULTURAL
SCIENCE MANPOWER

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"What has Athens to do with Jerusalem?" Tertullian's challenge has a counterpart in agriculture: "What does the laboratory have to do with the farm?" While no one doubts there is a relationship, the difference of perspective--short-run, pragmatic perspective vs. longer range and more abstract--raises the question. Along with questions of natural resources, the Christian needs to be concerned with the human (science manpower) resource. In particular, how are scientists produced and developed who can and will bring their talents to bear on practical, agricultural problems?

Background. In 1862 the Morrill Act established the land grant colleges. The promotion of high quality, full time research within each college culminated in the Hatch Act of 1887. This produced the land grant college stations and allocated federal monies to the states for cooperation in agricultural research.

With the centennial of this event approaching, it is appropriate to ask what discernible role the stations have played in producing highly trained scientific manpower for agricultural research. This addresses one important, if often overlooked, link in the improvement of agriculture. Contributions of graduates to agricultural productivity, made possible by their training, has never been systematically undertaken. A related issue is how the research environments may have molded scientists' careers. The case of the Cornell Experiment Station, which has existed since before the Hatch Act, may provide some insight into these questions. Therefore, a study was undertaken with the sponsorship of Cornell, to document and analyze, to the extent possible, what role the science training had in particular graduates' careers.

The Study. Sixteen departments of the College of Agriculture and Life Sciences provided nominations of outstanding graduates during the decade of the 1950's. The major criteria regarding scientific work were: its quality, its impact, recognition for it, and social benefits which derived directly or indirectly therefrom. These nominations were screened by a special committee, yielding 20 participants representing 14 departments of the College. Participants were contacted and individually interviewed. The interview plan accomplished two purposes: to document the major contributions of individuals, and to explore the relationship between the training received and career developments.

Major Findings. The study documented many scientific contributions, most frequently ones with practical or economic importance. Some also cited their own students as part of their contribution. Others had their major contribution in leadership in implementing new technology for the improvement of world agriculture. Briefly, the impact of Cornell as suggested by these retrospective accounts were; selecting research topics, establishing crucial personal relationships, acquiring research skills, gaining interdisciplinary and applied research experience, and gaining a "sense of mission" and global perspective.

Implications. The study must be viewed in perspective of the historical tension between basic and applied research within the experiment station. Founders and scientists stressed basic, original research while farmers and legislators pushed for work on problems with an immediate return. The study suggests, at least for exemplary contributors, that a marriage between these perspectives, in a sense, is possible. The "sense of mission" showed that rigorous scientific training was marshalled for real agricultural needs. Economic and practical benefits, although deferred, were often substantial. Thus, the environment which ostensibly helped produce these outcomes needs to be better understood. A challenge in relation to Christian stewardship can also be made.

CHRISTIAN STEWARDSHIP IN AN AMBIGUOUS WORLD
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Honduras, like most of the less-developed nations of the world, gives an example of Murphey's Law in action. What can go wrong seems to be doing so. The whole paraphernalia of contemporary American environmentalism and evangelical idealism seems to become suddenly obsolete when one enters the Third World. The American ideals of "trickle-down" or "alternative this-or-that" don't fit the developing world where major fundamental choices and changes must be made to secure a lot more in a real big hurry, just to stay where they are. The core problems of widespread poverty, rampant pollution and misuse of the earth, growing inequality, rapid population growth, and rising unemployment all seem to be out of control. And although Central America has its special problems, the concerns and interests of all people and nations today are so similar and so inevitably woven together in a web of interdependencies that the whole world seems out of control as well. Disasters in all possible forms have flooded the globe to an extent never known before, and the international structures are no better equipped to deal with today's overriding problems than are those of Honduras.

The further we go, the more "progress" we make, the more we find the inadequacy of human solutions for tackling these problems and that we are incapable of "fixing up" the world which we have made. And the universal catastrophes we face are not due to accident, nor are they mere breakdowns in the mechanism of progress. They are the inevitable product of the essentially uncertain structure of the natural order in which we live. In reality, all solutions, all economic, political, and other achievements are only temporary, and are always ambiguous. We think and act otherwise, but study of our best intentions to once and for all fix up the problems of the planet reads like a compendium of horror stories. More often than not they lead to further deterioration of the natural environment and severe social and economic disorders.

His economy is not our economy. His ways are not our ways. But He nevertheless demands action in the world for Christians, because we are His "earthen vessels" which He wishes to use to pour out the message about what He has already accomplished for us. Our task is therefore not to "improve" or to "fix up" this world, but to realize what God has already done for the world and why. We need to spread the Gospel--the message that we and the world are judged, but that we are also forgiven. Actions that point to this ultimate truth are what Christians ought to pursue in trying to heal this broken world. As God's warriors on earth, we are called to use His weapons--faith, hope, truth, justice. We fight for the Kingdom of Love, even while embracing the absurdity of the life in the world. We fight and act out against conditions as they are, not to win, but only to show them for what they really are--meaningless, absurd and evil--and to show that a hope for redemption is the crucial end, for there is nothing in the world apart from this hope to explain the world. There are then no strategies for change, just hope and the actions that a hope in God demands.

RELIGION IN GEOLOGY TEXTBOOKS

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Many geology textbooks have at least a passing reference to the Bible in connection with a discussion of creation or special creation; evolution; the Flood, Noah, or the Deluge; catastrophism; or other topics. These references are seldom neutral, and apparently never positive. Their purpose is usually to give a history of the development of geological science, but they imply that the student has a choice between up-to-date science and out-of-date religion. An anti-religious bias, on the order of sexism or racism, is perceived. While such textbooks may do harm to the faith of some students, it can open the door to discussion by a Christian teacher which might otherwise be awkward to introduce.

A PRIMER ON PLATE TECTONICS

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A basic knowledge of this unifying principle of geology is essential to the understanding of certain environmental hazards: most of the major earthquake belts and zones of volcanic activity are related to plate tectonics. On the positive side, important mineral resources are associated with plate boundaries. Furthermore, processes of plate tectonics have implications for the age of the earth.

SPIRITUAL SINS THAT MASQUERADE AS PSYCHIATRIC DISEASES AND SYMPTOMS

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One has only to go back a hundred years to find a majority of persons, including physicians, who assumed that most suffering came from sin's results. But in the last hundred years a myth has grown that most painful and antisocial behavior comes primarily from emotional and mental disease.

The discussions around Hinkley, the attempted murderer of President Reagan, seems to focus around how his parents failed in bringing him to adulthood, and a judge and jury found him, in the clear presence of so many witnesses including the media, as NOT GUILTY BY REASON OF INSANITY. Our discussion today is around those moral, ethical and spiritual conditions that appear in society today as Emotional and Mental Diseases, that are realistically, both sins and illnesses.

To be sure, many are a mixture of the two, i.e. to use beverage alcohol is a moral-social decision, but alcoholism and cyrosis of the liver are both obviously physical diseases.

While we will deal with logically clear cut alternatives in this discussion, it will be apparent that most human situations that demand healing or forgiving include both illness and sin.

Theoretically, Freud ("I have never doubted that religious phenomena are to be understood only on the model of the neurotic symptoms of the individual") and Skinner (Beyond Freedom and Dignity) along with the average mental health practitioner often either ignore religious phenomena or interpret it as a neurotic defense or an "illusion."

The Christian therapist, on the other hand, explores conflicts from a much wider perspective. He/she treats LONELINESS with Sonship and Daughtership as well as sexual intimacy; WORRY with Providence and Trust as well as support and reflection; DEATH FEARS with Eternal Life as well as courage in facing the Last Stage of Growth; GUILT with Forgiveness as well as with insight and extinction; ANXIETY with constructive uses instead of analysis; and ENNUI-LOSS OF MEANING and BOREDOM with Evangelism and God's Purpose as well as education and psychotherapy; and REBELLION and CRIME with Scriptural Conversion and Holiness and Authority as well as rehabilitation and social work.

This presentation will explore basic spiritual problems that are often treated superficially by psychological and pharmacological means.

GNOSIS (KNOWLEDGE) THE FALSE AND THE TRUE
(I Tim. 6:20)

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Timothy was to guard his entrustment and avoid opposing arguments of gnosis, variously translated as knowledge, science (Lat. scientia) or Erkenntnis. It emphasizes perception and realization. True gnosis is an attribute of God (Rom. 11:33) and available to the Christian believer (I Cor. 8:1). With this and alongside paganism was a falsely-called knowledge of heretical Christians. It challenged orthodoxy, especially in the 2nd century. In many respects it rightly portrayed basic Christianity as James Robinson has pointed out. In other points, though in Christian dress, it challenged orthodoxy and was completely at variance, a trajectory through the Hellenistic world. It was answered by Iranaeus (c.135 - 202 AD) in Denunciation and Refutation of the So-Called Gnosis (Adversus Haereses Lat.), translated into English, and other heresiologists, and in modern times by Walter Bauer in Rechtoglaubekeit und Ketzerei (Orthodoxy and Heresy). Biblical knowledge came to be expressed by epignosis or full knowledge by Paul as in Eph. 1:17, Col. 1:6-10 and elsewhere. The ancient gnosis largely disappeared with the Arab conquest in the 7th century, but features of it are reappearing today.