

# NEWSLETTER

of the  
American Scientific Affiliation &  
Canadian Scientific & Christian Affiliation



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## ANNUAL MEETING SPECIAL EDITION

### New Facts, New Facets

Most "Eureka moments" are fleeting. But this one lasted an entire weekend—a cornucopia of new facts coming to light and familiar facts being seen from new facets. We who experienced it are still pondering its implications. On the George Fox University campus the first weekend of August, person after person remarked that it was probably the best Annual Meeting they had ever attended. I heartily agree; coming from an "Annual Meeting junkie" who has missed only four since joining in 1979, that's high praise.

Specifically, what did we love and why? Well, in the words of Elizabeth Barrett Browning, "Let me count the ways."

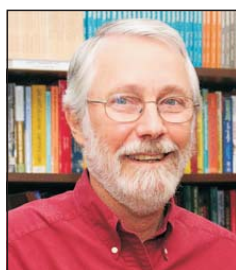
The unifying thread was Micah 6:8, "... [W]hat does the Lord require of you, but to do justice, love mercy, and to walk humbly with your God." As the sessions progressed, that thread wound through a Philippine jungle, a bioethics dilemma involving a severely retarded child, a climate change panel, a NASA observatory, sustainable agriculture, and what engineers can do to serve the world. And those were just the plenary sessions. Parallel sessions probed the myriad ramifications of Micah's inspired words.

Scientists are sometimes perceived as isolating themselves in ivory towers. The first weekend of August, 201 attendees debunked that image and listened to role models demonstrating practical ways they are discharging "what the Lord requires."

Co-Editor **Margaret Towne** asked several attendees for their "reactions to the action." We're sharing those on p. 12. But first, let's summarize the action that occurred at the podium and lectern. Let's "count the ways" that they made their points. —**Dave Fisher**

### Exiled in Babylon

Many anthropologists have a low opinion of missionaries, saying things like "You can tell a missionary by looking in his ear. If you can see daylight, you know he's a missionary." Anthropologists criticized Wycliffe Bible Translators for allegedly destroying cultures. So Wycliffe asked



Thomas Headland

missionary and linguist Thomas Headland to earn a PhD in anthropology, one goal being to help anthropologists to see missionaries more favorably. Headland devoted Friday night's opening plenary session to his experience as "An Exile in Babylon: The Personal Story of a Christian Anthropologist in the Secular Academy."

Geographically, Headland's foreign land was the Philippines, where he was involved in various translation roles from 1962 through 1979. But he sensed a greater "foreignness" between himself and secular anthropologists, with whom he began interacting in 1979. Could God use a missionary to crack that barrier? He resolved to follow 1 Peter 2:11, 12, "Dear friends, I urge you, as aliens and strangers in the world, ... live such good lives among the pagans ... that they may see your good deeds and glorify God." He summarizes the reaction, "God gave me favor in the eyes of some; others hate my guts."

### Steps to Acceptance

In 1972 *National Geographic* published a cover story, alleging the discovery of a tribe of Stone Age people

*Continued on p. 3, Exiled in Babylon*

### Decisions That Would Challenge Solomon

If you were parents of a 6½-year-old whose mental age would never exceed three months—and who would never walk, talk, or care for herself—what would you do? That was the situation two parents faced. In his talk "Love, Justice, and Humility: Reflections on Bioethics and Medicine," University of Washington pediatrics professor Douglas Diekema used that case to illustrate the complex ethical decisions unleashed by today's advanced medical technology. Which of the many things medical personnel *can* do, *should* they do?

At an age when most children are in first grade, Ashley X needed assistance even to sit or roll over. She had signs of early onset of puberty. She was in the 75<sup>th</sup> percentile for length; if she continued exceptional growth, she would be



Douglas Diekema

even more difficult to handle. Her parents wanted to care always for her at home but feared they might not be able to if she grew larger. So they requested that the doctor attenuate her growth and give her a hysterectomy and breast bud removal. It wasn't an unusual request, but it's difficult to obtain permission for a person who can't consent. Now that it's done, they're happy with the results, explaining,

Ashley can continue to delight in being held in our arms and will be moved and taken on trips more

*Continued on p. 3, Decisions*

## The Executive Director's Corner

Randall D. Isaac

The 63<sup>rd</sup> annual meeting of the ASA is now history but far from forgotten. If you haven't done so already, I encourage you to check our website at [www.asa3.org](http://www.asa3.org) and listen to the plenary and contributed talks. If you weren't there in person, you missed the personal interaction but you can still listen, read most of the slides, and comment electronically.

As is the custom, the executive council met just prior to the annual meeting. A special item on the agenda was a presentation by **Jim Smith, MD**, chair of the advisory council for Medical Education International (MEI), a mission of the Christian Medical and Dental Associations (CMDA). Jim also gave a contributed paper on Sunday afternoon in Parallel Session IV-B. It is well worth hearing.

I am delighted to announce that the council approved an alliance between ASA and CMDA to focus on science education through MEI. I'd like to devote this column to introducing this alliance and to getting the ball rolling.

**Jay Hollman**, who has previously served as a council member and president of the ASA, introduced me to David Stevens, MD, CEO of CMDA, who spoke with our council by phone at the March 2008 meeting. We agreed to pursue the possibility of working

together. David introduced us to the director of MEI and to Jim Smith, Chair of the MEI Advisory Council. Jim lives in the Portland area where he is professor emeritus of the Oregon Health & Science University. It was very convenient for Jim to come to George Fox University and to meet with us.

The role of MEI is explained on their website [www.cmda.org/mei/](http://www.cmda.org/mei/) as follows:

- Do you like to teach?
- Are you interested in going on a trip with other medical and dental colleagues?
- Are you willing to travel to some of the least reached areas of the world with the love of Christ?

If so, consider serving with Christian Medical and Dental Associations' Medical Education International or MEI. MEI will give you the opportunity to do all of these things and "teach your way to the nations!"

The MEI staff has realized that in addition to the medical and dental education needs, many of the international educational institutions need a more basic, or more general, science education. Jay recognized that the ASA membership includes many Christians in science working in education. More than 60% of those responding to our recent survey had worked in an educational institution. The opportunity for ASA members is to join one of the MEI teams. In the words of the MEI website:

MEI teams consist of 2 to 10 energized individuals who commit to share their expertise via clinical and/or academic instruction of healthcare providers around the world. MEI teams spend from one to two weeks in a foreign country, sharing their knowledge in medical schools, universities, and on hospital wards. Participants pay their own trip costs.

The council fully expects that needs for science education will extend beyond the medical and dental schools that are the MEI focus. This alliance is a great start for us since MEI al-

ready has experience and the necessary infrastructure in place. Many of you have previously traveled abroad to contribute your science education expertise in developing countries. We plan to establish a website where you can share your experiences and where we can identify and provide information about new possibilities.

Two specific opportunities identified by MEI are a trip to Mongolia in April 2009 and a possible team going to Liberia next year. We will be providing more information on these teams via email news notes and website postings. Please be sure that we have your current email address on file.

ASA members have shown an eagerness to help our brothers and sisters around the world through the application of science and appropriate technologies for sustainability. Education is a critical piece of that process and I know that many of you will participate as the opportunities arise.

### Welcome, New Members! June–July 2008

- Bonnaillie, Laetitia M. –West Chester, PA
- Braun, Eric M. –Winter Park, FL
- Cisco, Jr., Taylor A. –Oak Park, IL
- Combs, Alan B. –Austin, TX
- Creamer, Daniel –Wheaton, IL
- de Visser, Ewart J. –Fairfax, VA
- Dieterle, Megan E. –Kitchener, ON Canada
- Dornbos, Jr., David L. –Grand Rapids, MI
- Fick, Gary W. –Ithaca, NY
- Franklin, Patrick S. –Oakville, ON Canada
- Gillis, Helice A. –North Attleboro, MA
- Graven, Richard –Fayetteville, PA
- Hansen, David M. –Newberg, OR
- Hinrichs, Roger A. –Edmonds, WA
- Kerns, James –Perris, CA
- Key, Peter B. –Charleston, SC
- King, Rollin –St Paul, MN
- McMahon, Kerry C. –Beaver Falls, PA
- Nelson, Michael P. –Ventura, CA
- Platt, Heather A. –Corvallis, OR
- Platt, Andrew D. –Corvallis, OR
- Polachic, Chris J. –Edmonton, AB Canada
- Riggs, Robert J. –Spokane, WA
- Siemens, Larry A. –Redding, CA
- Smith, Trenton H. –Redding, CA
- Sollereder, Bethany N. –Edmonton, AB Canada
- Stager, Joshua P. –Corvallis, OR
- Trulson, Michael E. –Richardson, TX
- Whorton, Mark S. –Huntsville, AL
- Young, Sharon –Mustang, OK
- Zhao, Yaliang –Andover, MA

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Managing Editor: Lyn Berg



## Exiled in Babylon, from p. 1.

in the Philippines. Several years later, another anthropologist found them and learned they were driving jeeps. To settle the conflicting reports, the American Anthropological Association (AAA) asked Headland to investigate and report at the next annual meeting. He achieved such respect that he was elected an AAA Fellow. Yet, the chair of anthropology at his university decided he could no longer teach there—despite the fact that he had published more papers than the rest of the department combined. He is still an adjunct professor of linguistics at the University of Texas at Arlington, in addition to serving Wycliffe’s Summer Institute of Linguistics as International Anthropology Consultant.

### Doing Justice to a Critic

Napoleon Chagnon was the best-known American anthropologist, whose books had outsold even Margaret Meade’s *Coming of Age in Samoa*. He had made numerous unsubstantiated charges against missionaries. He got a taste of his own medicine when he was charged with purposely infecting one people group with measles to see how fast a new pathogen would spread in a virgin population. Headland discovered the measles epidemic had begun 5 days after Chagnon went in, and measles has a 12- to 15-day incubation period. The real source of infection was the 27-month-old daughter of a New Tribes missionary. Headland spoke for 3 min. 37 sec. to 3,000 anthropologists, exonerating Chagnon from starting the epidemic. The attitude suddenly changed from hostility to wanting an encore.

Some time later Chagnon asked Headland, “Why did you defend me that night?” Headland answered, “Not because I like you. I haven’t appreciated the way you’ve talked about missionaries. But the truth is you didn’t cause the epidemic,” and truth trumps every other consideration.

If critics see a light emerging from his ears, it’s not sunlight passing through a hollow head. It’s a combination of cerebral brilliance plus sterling integrity.

## Decisions, from p. 1.

frequently and will have more exposure to activities and social gatherings ... instead of lying down in her bed staring at TV (or the ceiling) all day long.

### No Decision in a Vacuum

Each decision involves a network of both intended and unintended consequences. Diekema answered various objections that critics raise:

- “This is not natural.” Neither is almost anything we do in medicine. Immunizations, antibiotics, and surgery are interventions to avoid “letting nature take its course” in detrimental ways.
- “You are playing God.” We play God nearly every time we intervene medically. We also play God when we decide *not* to offer treatment. The only real “playing God” in the negative sense is a decision made in hubris.
- “It’s a Slippery Slope.” Avoiding all potentially “slippery slopes” would restrict our options unacceptably. We would never have invented the wheel, if we had worried that it could be developed into a military vehicle.

When faced with difficult decisions, Diekema recommends managing them with humility and courage—which sometimes conflict with each other. Even the choice not to move forward is a choice.

## Responding to Global Climate Change

Larry Schweiger, president and CEO of the National Wildlife Federation, spoke Saturday evening on “A Proper Response to Global Climate Change.” Larry is concerned about the exploding use of energy. For example, China has doubled its carbon production in seven years. It has added a new power plant every five days, to the extent that it needed to close several to obtain air quality acceptable for the Beijing Olympics. NASA says CO<sub>2</sub> concentrations above 350 parts per million can trigger “positive feedback” changes; we are now at 389 ppm.

He cited a wide range of data to establish that climate change is unequivocal. Arctic ice, about the size of the US



Larry Schweiger

minus Arizona, is now melting at a nonlinear rate. The Greenland ice sheet melted the equivalent of three Nile Rivers in 2007. Two hundred million Asians live 2 feet or less above sea level and could die as oceans rise.

### Bipartisan Involvement

He said, “It’s not a left-wing/right-wing issue; it’s a moral issue,” involving love of neighbor and care “for the least of these.” Schweiger is co-chairman of the “We Can Solve It” campaign, which Al Gore founded. It consists of 4 Democrats, 4 Republicans, and Schweiger as the Independent.

### Action Points

- We’ve burned carbon out of our soils through use of chemical fertilizers. Putting it back would enrich the soil and sequester large amounts of carbon that would otherwise be in the atmosphere—200 million tons per year, about ½ ton per acre. High carbon soils also reduce water pollution and runoff.
- Energy efficiency could cut usage 30–50%.
- It’s ironic that we are making huge investments in coal technology. Meanwhile, costs of all renewables are coming down. Wind energy is competitive and clean and could produce 30% of our energy, and Schweiger supports increasing nuclear power.
- If we’re betting on our future, renewable energy is the path in which we should invest. Sources can be decentralized throughout the system and thus less vulnerable to terrorist attacks.

### An Intergenerational Legacy

Schweiger believes that Prov. 13:22, “[leaving] an inheritance to his children’s children,” refers to more than money. He concluded, “Let’s work together for our children’s sake.”

**Join Us at the 64<sup>th</sup> Annual Meeting**  
Baylor University, Waco, Texas  
July 31–August 3, 2009

## Serving God by Exploring the Cosmos

NASA astronomer **Jennifer Wiseman** began by showing an image from spacecraft Cassini, showing Earth as a small “pale blue dot.” She asked, “Is studying the heavens a service to God?” She answered in the words of Psalm 111:2, “Great are the works of the Lord; they are pondered by all who delight in them.”



Jennifer Wiseman

The biblical writers viewed the heavens as evidence of the God who created. Modern science was enabled by the realization that celestial objects were not divine, but created.

### Images and Interpretation

A map derived from the Wilkinson Microwave Anisotropy Probe pictures what she calls the “Let there be light” event: the Big Bang left radiation that fills the universe and can be observed today.

The universe’s expansion is attributable to dark matter, which Wiseman calls “matter that we don’t know what it is.” The energy budget of the universe contains about 73% dark energy, 22% dark matter, and “the stuff we work with” (including atoms) is 4%. This is a fertile field for anyone seeking a career where significant facts remain to be discovered. God would be very pleased if we found out things that he has known all along.

### What the Heavens Tell Us about God

Based on the nature of God’s astronomical creation, we can infer certain characteristics about his nature. God appears to be powerful, extravagant (making multiple billions of stars), creative, a lover of beauty, patient (to allow creation to take billions of years), faithful, and the giver and enabler of life. The Christ who walked around Galilee, healing lepers and performing other miracles, is the same one who existed from “before the foundations of the earth.” Our Savior is not an afterthought!

### Are Humans Significant?

She answered, “No and Yes. We’re not significant because of our size and place in the universe or our lifespan. But we are significant because of God’s choice to love us.” She quoted Psalm 8, “What is man, that You are mindful of him? ... You have made him a little lower than the angels and crowned him with glory and power.”

The worship service followed. What an amazing preparation this presentation was for worshipping the Creator!

### Regenerative Design for Sustainable Agriculture

Decades before most people had heard the word “ecology,” C. Dean Freudenberger was practicing it. He served the United Methodist Church for 17 years in agricultural and rural community development across six continents. Next, he taught at the Claremont (CA) School of Theology and at Luther Theological Seminary in St. Paul, MN. One colleague observed,



C. Dean Freudenberger

Dean was a landscape architect and environmental activist all rolled into one. I think it was an unofficial graduation requirement that every student had to spend time behind a shovel, actually planting trees or they weren’t going to get out of here with Dean’s blessing.

In that life context, Freudenberger told the Sunday night plenary session that he was gratified to see what had unfolded in earlier presentations, especially those dealing with “sustainability.” The Hebrews understood humans to “have dominion” not to exploit, but to retain order within nature.

### What Can We Do?

Just asking that question is progress. A Chinese proverb says, “A good question is an answer in embryonic form.”

To achieve an adequate and sustainable food supply, we must make agriculture sustainable in marginally productive areas. That involves reducing farm runoff and finding alternatives

to slash/burn agriculture and livestock factories. Production efficiencies must measure all factors, all production costs, social and economic. Among Freudenberger’s recommendations are:

1. Evaluate your scientific pursuits to assure their relevance. Prepare students for positions that do not yet exist.
2. Ask tough questions. Propose questions that many would consider absurd. Innovative ideas are “off the beaten path,” so don’t be derailed by the fact that traditionalists oppose them.

### Engineering as Service

“Don’t just be an engineer to work with gadgets” but to help people worldwide. That was the challenge Cornell University Dean of Engineering **W. Kent Fuchs** (pronounced Fox) presented in the Monday morning plenary session.



W. Kent Fuchs

### Not “Just a Job”

Fuchs listed numerous projects that can give engineers a sense of having contributed something to society. His “Engineering Grand Challenges” include

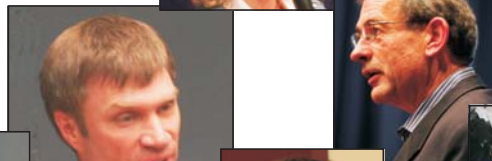
- Energy, environment, global warming;
- Expand and enhance human capability and joy;
- Improve medical and healthcare delivery; and
- Reduce vulnerability to human and natural threats.

A supplementary video added reverse engineering the brain, health informatics, developing technologies to reduce the Internet’s vulnerability, and carbon sequestration.

Engineers need to be more people-focused, more sensitive to societal concerns. So, Kent is involved with Engineers for a Sustainable World, which is planning a national conference at Northwestern University, Jan. 29–Feb. 1, featuring tracks on Global Public Health, Building the Green Economy, Social Entrepreneurship, and Educating the Next Generation. For more information, email: [esw@northwestern.edu](mailto:esw@northwestern.edu)



# George Fox University Welcomes the Joint Meeting of the ASA and CSCA August 1-4, 2008





## Parallel Sessions

Sometimes attendees wish they had the divine attribute of omnipresence when two or three sessions occur simultaneously in separate rooms. Failing that, we asked the moderators to summarize the high points of sessions ranging from gender roles to alternative energy, alleviating hunger and sickness, and a range of other issues.

### I-A and II-A. *Special Symposium: Human Gender, Sexuality and Sex*

The Saturday morning session focused on “Gender Issues in the Sciences.” NASA astronomer **Jennifer Wiseman** traced the inspiring histories of women in astronomy who overcame skepticism and barriers. She identified the “two-body” problem: Across the scientific disciplines, a high number of women compared to men have spouses with doctorates and face the additional pressures of dual-career job searches and no at-home spouse to provide household support. Christian women in science face special challenges because they don’t fulfill religious stereotypes.

Calvin College organic chemist Carolyn Anderson reviewed the prevalence of women receiving degrees in chemistry and working in the professorial ranks of chemistry over the last 25 years. Social research shows that women benefit from mentoring more than men, but far fewer women receive mentoring. She called for gender equity, not necessarily parity: women who wish to pursue science careers shouldn’t be at a systemic disadvantage compared to men. Both presentors observed that the number of women in their disciplines has grown slowly, but appears to be peaking with women remaining significantly under-represented in tenured and leadership positions.

McMaster University physician, bioethicist and researcher **James Rusthoven** observed that health occupations overall are dominated by women, averaging around 80% in Canada over the last two decades. More women physicians are in family practice than all specialty areas combined. On average, they practice about 15% fewer hours per week than men, attributed to women carrying major responsibilities for home support and child care. To

respond to the demand, we must consider flexible, creative ways to cooperate to deliver health care.

University of Pennsylvania cognitive neuroscientist **Gwen Schmidt** reflected upon her career path from wife and mother to graduate student and post-doctoral researcher after raising her children. She keenly felt God’s calling to use her talents in psychological research, yet people in her evangelical faith community downplayed education and career while emphasizing her primary role as pastor’s spouse and family caretaker. She observed that an essentialist perspective, that women are “by nature” equipped solely for domestic tasks, leads to systemic obstacles for those who seek a different role.

The speakers noted that despite considerable progress, women tend to remain disproportionately responsible for household chores and child raising, taking time from professional activities and lessening the likelihood of advancement. Institutional efforts to provide released time for childbearing, daycare assistance, active mentoring, and additional time for advancement and tenure are helpful.

The afternoon session focused on “What the Sciences Tell Us About Sex, Gender and Sexuality.” Calvin College bioethicist **Bud Bouma** addressed issues of persons who are intersexed—neither clearly male nor female. They struggle with self-identity, low self-esteem, and suicidal ideation as well as numerous legal issues. Christian faith traditions need to articulate normative teachings on God’s intent in creating us as sexual beings, how sex and gender are affected by the Fall, and how we might best exercise our sex and gender as imitators of Christ. He concluded by advocating an acceptance of intersexed persons to enable them to flourish as imitators of Christ (Matt. 19:11–12).

**Heather Looy**, The King’s University College psychologist, addressed issues of sexism and phobias associated with sexual variations, particularly homosexuality. While the prevalence of divorce is far greater than homosexuality, the Christian community disproportio-

nately focuses passionate negative emotional responses on the latter, producing rejection from parents and church communities (distancing, alienation, and stigmatization). She advocated that Christians become aware of the positive and negative ways emotions influence their moral priorities and judgments, how others use emotional language and images to direct our energies, and to respond with humility, mercy and justice to persons with sexual variations.

Both sessions generated lively discussion that continued throughout the conference. Of particular interest is the question of how ASA can support and nourish Christian women in science, and both women and men who earnestly seek to follow Christ in their careers and in their family lives.

✉ **Hessel Bouma III and Heather Looy**

### I-B and II-B. *Ecology, Environmental Studies, and Global Warming*

The Saturday morning presenters shared stories of success in the improvement of ecological and environmental care, and the story of a work in progress.

**Dave Clements**, Trinity Western University Professor of Environmental Science and leader in Christian environmental organization *A Rocha*, said *A Rocha* believes spiritual health is connected to the land’s health. It sponsors hands-on conservation projects at field study centers in 18 countries, including planting trees in Ghana to sequester carbon dioxide and to benefit both people and wildlife and working to resolve elephant and human conflicts in India. By helping to restore natural ecosystems, it helps the poor and praises God through incarnational care of his creation.

US Fish and Wildlife Service biologist **Angela Kantola** shared her project to recover four large endangered fish species native to the Colorado River upper basin. Their numbers have plummeted due to water depletion, competition from nonnative fish, the addition of large reservoirs, and fish barriers. Angela has fostered a coalition—including states, agricultural

groups, and four federal agencies—effectively working on improving problems since 1988. The patience and collaboration are paying off, with two species initially showing large population gains and others stabilizing.

Industrial chemist **Walter Partenheimer** explained how he used green chemistry principles to improve processing of terephthalic acid and polyethylene terephthalate, the primary material in water and soda bottles. By changing catalysts, he helped the industry reduce greenhouse gases produced during processing; recycle solvents, catalysts, and plastics; and avoid unnecessary derivatives. At an annual production rate of 14 billion pounds per year, these changes have a big impact on both the environment and the bottom line.

**Jack Swearingen** has been helping the governments of Sonoma and Marin Counties, north of San Francisco, in evaluating options for improving transportation, especially in light of \$4/gal gasoline. Weighing traditional cost/benefit analysis plus elements reflecting biblical “shalom,” he concluded that diesel trains would work the best in that situation, but voters have rejected the proposal twice. Jack fears trains are perceived as “old” technology, and “anything but trains” seems to be the message. Despite this mindset, the assessment process he developed should be useful to anyone faced with a similar decision. ☒ **Lynn Billman**

The afternoon session began with four Calvin College students reporting on a combined engineering and ecology project. **Jessica Driesenga, Dan Engel and Daniel Vanden Akker, and Christina Prins** assessed the possibility of achieving carbon neutrality at the college. The students and faculty advisors estimated the CO<sub>2</sub> emissions from on-campus activities plus associated external sources such as commuting, electric power generation, heating and cooling. After estimating sequestration by photosynthesis on campus, they compared generation and sequestration rates and determined that carbon neutrality could be attained by a combination of conservation and renewable energy such as wind power.

Kansas State geologist **Keith Miller** provided global and geological context for the Calvin project. Changes in Earth’s orbit and in solar radiation operate in conjunction with generation and sequestration of greenhouse gases (GHG) to produce epicyclic variations in Earth’s climate. Industrial-era human activities are producing and releasing GHG at high rates. Operating in conjunction with incipient positive-feedback mechanisms such as changes in Earth’s albedo from melting of polar and glacial ice, release of methane from Arctic and deep sea ice, and reduced sequestration, runaway changes in temperature are possible. Over geologic time scales, temperature changes have been slow enough that biological species could adapt; especially over the past half century, the rate of GHG accumulation may be faster than biological life can adapt—leading to widespread suffering and death, especially among the poor. Thus for Christians this problem contains a moral imperative. ☒ **Jack Swearingen**

### III-A. Social Sciences, Anthropology, and Issues of Faith

“Teaching That Moves Beyond Ideas toward Action” was the subtitle of George Fox University sociologist Lisa McMinn’s presentation. Encouraging students to go beyond theory to become “priests, prophets, and politicians” in the world, she cited Wheaton’s Human Needs and Global Resources program and inviting students home to learn about vegan cooking. Stories from the audience provided other ways to put ideas into action.

Scientific theory and research need to inform the church’s response to mental illness. **Matthew Stanford**, Baylor professor of psychology, neuroscience, and biomedical studies, studied “the attitudes and perceptions encountered by mentally ill Christians in the local church.” Those suffering serious mental illness often turn to clergy or fellow congregants, but they are often met with denial (“you’re not really ill”), victimization (“you’re sinful or demon-possessed”), or pointed to inappropriate treatments (“you should stop taking drugs”). These silencing or misguided

approaches deny the struggling a vital resource for healing. Stanford’s upcoming book, *Grace for the Afflicted*, illustrates one way scientists can use their work to heal and transform.

Both Lisa and Matthew provided a vision and encouragement to use our power as scientists and teachers to help heal a hurting world.

☒ **Heather Looy and Dave Fisher**

### III-B. The Natural Sciences and Issues of Faith

An underlying theme reflected the creative power of God and the positive trend in evangelical science toward acceptance of such topics as quantum mechanics and evolution.

**William Collier** raised the question of how we should define science. He argued that a true definition of science was virtually impossible to get at, especially when you juxtaposed diverse perspectives (e.g., the historian of science and the practitioner of science).

**George Murphy** talked on “Theology and Time Machines.” He mathematically justified particles that exceeded the speed of light and appeared to travel backwards in time. George paralleled this idea to the suggestion that God, too, can influence present processes from the future.

**Benjamin McFarland’s** talk on artificial protein folding deconstructed protein “dogma.” Benjamin’s lab predicted that the more enthalpically stable the tertiary structure of a protein is, the more stable the binding domain would be and therefore the greater the affinity that protein would have for the substrate or binding partner. They found almost the opposite: proteins with *unstable* tertiary configurations have enhanced function! They put this finding down to compensation mechanisms in entropy-enthalpy interactions.

**Gary Patterson** took elements from his book in his talk “An Evangelical Natural Theology.” Gary stressed the continued need for humility as about 90% of the universe consists of dark matter, about which we know very little. He demonstrated that the past travesties of the evangelical attitude toward science are changing for the better.

☒ **Phyllida Drummond**



#### IV-A. Alternative Energy Sources and their Impact: Engineering and Appropriate Technology

**Tjalle Vandergraaf** discussed energy use relative to four areas: residential (17%), commercial (14%), industrial (38%), and transportation (29%). We must modify these energy needs now by using more nuclear, wind, hydroelectric, and solar energy. We should use railroads more than highways and build smaller buildings, hydrodams, and nuclear and wind generators. Societies based on current energy mix can't be sustained. Hopefully, the increase in population can be offset by increased energy efficiency.

**Chip Mansure** spoke on "Geothermal Energy Update: The Solution, a Contributor, a Diversion, or Part of the Problem?" What does it mean to love our neighbor regarding energy use? We must make better technological choices and consider the environment for future generations. He discussed geothermal energy sources such as volcanic eruptions, heat pumps, and hydrothermal resources.

Electrical engineer **Annabelle Pratt** addressed "Mitigating the Growth of the Internet's Energy Use through Improved Power Distribution." Today the internet uses 1.5% of US electricity and the percentage will go up if we don't change. We've improved but the demand goes up.

In May 2007, a tornado destroyed 90% of Greensburg, KS. **Lynn Billman**, of the National Renewable Energy Laboratory, participated in disaster recovery. To rebuild with more efficiency and more renewables, they used new kinds of insulation and windows, discussed alternate transportation possibilities, and introduced wind and solar ordinances and renewable energy. Children are learning about renewable energy and this strong faith community (9 churches for 1,400 people) is applying the green theme and integrating it with their faith. ☒ **Margaret Towne**

#### IV-B. Medicine, Global Infectious Disease, and World Health

This session was an eclectic collection of topics on health care. Kathleen Thiessen claimed the decision to fluo-

ridate public water supplies was based more on assumptions than on evidence, saying scientific evidence doesn't show improvement in socioeconomic disparities in dental health. She said growing concern over fluoridation's ineffectiveness and potential adverse effects have made little impact on convincing officials to discontinue fluoridation. However, a dentist in the audience challenged her, testifying to a dramatic drop in dental caries with fluoridation.

**Jay Hollman** addressed ethical issues in US health care reform. He said a lack of *justice* occurs in a system that allows a large proportion of the population to be uninsured. It provides access for prisoners and the desperately poor while denying it to those who work but remain in poverty. He linked *dignity* to the ability to carry out useful work but said such dignity is often denied by the disincentive of rewarding disability with steady income and health care. There is a lack of *stewardship* in distributing the limited resources available for health care as well as excessive waste in health care delivery.

**Anne Carpenter** updated the benefits of new computerized digital-imaging technologies in physically characterizing microorganisms for diagnostic and potentially therapeutic purposes. Such technology can be administered with relatively inexpensive computer software and camera hardware, making it potentially accessible to resource-poor, developing countries.

That presentation dove-tailed nicely into the final presentation, when **James Smith** summarized numerous opportunities for Christians in health care fields to educate and exemplify Christian love in developing world settings. The use of affordable tools for clinical medicine and for the generation of local research for local problems was but one example of Christian interdisciplinary discipleship that can improve health care for the poorer among us. ☒ **James Rusthoven**

#### IV-C. Science Teaching—Methods & Expectations

**Leslie Wickman** from Azusa Pacific University began the session, giving

methodologies to accomplish "Faith Integration in the Science Classroom." Students and colleagues recognize excellence, and it should characterize our teaching and science. Examining Christian and rival truth-claims should sharpen our own faith. Exploring God's world should be encouraged because it can lead to truth about the Creator.

Biola University's **John Bloom** asked, "Should Intelligent Design Be Taught in Public Schools?" He said ID has become a lightning rod for teaching evolution in public schools. Although its major proponents haven't advocated including it in the classroom, the definition and limits of science and academic freedom are at stake. He emphasized the difference between "how things work" and "how things originated."

**Brian Greuel** of John Brown University shared "how-to" insights in "Encouraging Excellence and Building Community in the Undergraduate Research Lab." His research area is mammalian gene regulation, with undergraduate lab assistants. To encourage them to strive for excellence and see the project as their own, he makes individualized contracts with them and compartmentalizes the project into smaller achievable goals. Through shared social experiences, lab meetings, and encouragement to attend regional/national meetings, students see research as more than mere resumé-building.

University of Washington medical student **Thomas Robey** spoke on "Weblogs as Foundations for Discussions about Science and Christianity." He uses Weblogging to start conversations about integrating faith and science. Blogging requires patience and humility, but it helps start the dialogue between regular contributors. Participants can expect harsh criticism, but this helps define a student's position. Thomas is willing to share his expertise and enthusiasm for this method of learning and teaching.

Those of us entrusted with students need to model our faith as we train the next generation of scientists and build the faith community.

☒ **Dwight Kimberly**



## V-A. Sustainable Agriculture and World Hunger

Four scientists with extensive experience in developing-world crop production led this session. **Martin Price** told of his call to found ECHO, a ministry that assists missionaries to increase food production and nutrition in countries where they serve. He highlighted services available and success stories achieved in the past three decades.

**David Dornbos, Jr.** of Calvin College discussed new approaches that can be used in achieving the Millennium Development Goals (MDGs) of eliminating poverty and attaining environmental sustainability in sub-Saharan Africa by 2015. He stressed that neither modern Western industrial agriculture nor a rebirth of the Green Revolution can provide suitable models for achieving these goals. He concluded by comparing sustainability challenges in America and developing countries.

**Ron Vos** of Dordt College discussed soil-related challenges that impede achievement of MDGs in Zambia. He detailed efforts to employ sustainable polycultural techniques while moving away from use of moldboard plows (albeit primitive) as a tillage tool.

State University of New York botanist **George Crosby** shifted the emphasis to food-yielding plants. Based on his work in Nigeria, Uganda and Mexico, Crosby advocated agricultural education as a great way to provide opportunities for sharing the gospel through meeting the needs of people in developing nations. Evaluation of Moringa leaves, rather than the beans, as a source of food was among the novel applications explored in his talk.

A truly novel approach to sustainability came from **Carl Resler** of the University of Texas-Austin, who presented a mathematical model for a system to promote artificial upwelling of nutrient-rich ocean water as a way to facilitate sustainable biological production in coastal ocean regions with the goal of enhancing food availability.

Throughout the talks ran the thread of ideas and techniques to boost food production toward the goal of achieving sustainable agriculture in developing countries. ☒ **Jerry Hess**

## V-B. The Natural Sciences and Issues of Faith

Five presentations that varied in style and content illustrated the diversity with which the interaction of science and faith may be investigated.

**Ted Davis** of Messiah College led with a historical account of Robert Millikan, the first president of Cal Tech and among the best-known scientists of the early 20<sup>th</sup> century. Ted focused on several famous essays addressing the religion/science relationship. A religious modernist, Millikan held both the “spirit” of science and the “spirit” of religion as primary. Though denying the miraculous nature of Christ in favor of a pragmatic and morality-focused view of the value of Christianity, he used his popularity and prestige as a spokesperson for the relationship between science and religion.

Mark Shelhamer of Johns Hopkins presented examples that illustrate randomness in nature and framed it within the context that randomness is an intrinsic and beautiful part of God-ordained natural law. He captivated the audience with a selection of demonstrations that illustrated the limitations of both visual and auditory processing.

**David Newman** (retired from Boeing) continued with the theme of randomness. He noted that nonscientists often do not understand randomness from a scientific perspective and that this misconception has led to confusion and rejection of scientific ideas as being counter to spiritual truth.

**Kirk Bertsche** from Stanford gave an overview of radiocarbon dating. He framed his presentation in the contexts of science both as service and as a response to the recent RATE report from the Institute of Creation Research which questioned the validity of radiocarbon dating. The rebuttal was data-focused and drew from the research of numerous experts, including his own doctoral work. Of particular note were the numerous corroborating calibrations of C-14 dating techniques as well as an overview of a newer technique, Accelerator Mass Spectrometry, for increasing sensitivity in radiocarbon dating. A summary of his written rebuttal is available on the ASA website.

The session was concluded by an atypical yet fascinating response to the question, “Why Did God Create the Sun on the Fourth Day?” given by **Paul Seely**, a graduate of Westminster Seminary. In poetic style, Paul wove between biblical accounts and other ancient Near Eastern texts, completely from memory, to paint an image of the ordering of the natural world from the perspective of ancient peoples.

The session carried through it the themes of respect for creation, service to Christ, and dedication to excellent science—complimentary themes that bring insight to both the natural world and the nature of God.

☒ **Alison R. Noble**

## V-C. Science Careers Panel for Student and Early Career Network

Each speaker gave a 15-min. presentation discussing his/her career path, current position, and how he/she sees the interface between faith and his/her profession. Careers represented by the panel included teaching chemistry at a small Christian college, acting as principal investigator of a psychology/neuroscience laboratory at a research university, leading a multidisciplinary team of scientists conducting functional genomics research at a nonprofit research institute, managing a team that designs products for a large company in the high-tech industry, and doing science policy and program management at a government agency focused on biomedical research. Participants were:

- Carolyn Anderson, Assistant Professor of Chemistry at Calvin College
- **Matthew Stanford**, Professor of Psychology, Neuroscience, and Biomedical Studies at Baylor University
- **Anne Carpenter**, Director of the Imaging Platform at Broad Institute of Harvard and MIT
- **Annabelle Pratt**, Power Research Engineer at the Intel Corporate Technology Group
- **Susan Daniels**, Health Scientist Administrator at the National Institute of Allergy and Infectious Diseases/National Institutes of Health.

The speakers described reasons for choosing their careers, preparation and training, how previous jobs led to their current positions, their current work, useful skill sets, lessons learned along the way, how they balance work and family or other nonwork activities, and how their Christian worldviews impact their professional lives. After the talks, the speakers engaged in a panel discussion with the audience, with topics, including strategies for succeeding in academic careers and the role of networking in building a career.

✉ *Susan Daniels*

### VI-A. Ethical Issues in Science and Engineering

**David Opderbeck** explained that the current model for information access is as a nonrival, public economic good—allowing everyone to share without using it up as a resource. Information is “nature as it is.” Postmodern theory says we aren’t learning anything new; information is being constructed from previous ideas. Critical realism says we have a reality of culture given to us, but we can also create/construct culture from it and alter the reality of culture as co-creators with God. Critical realism would treat knowledge and technology as part of an ecosystem. In the case of the internet, idealists would keep information as completely open-source, no governance pragmatists would have the US Government or the Federal Trade Commission govern, and critical realism would have self-government, i.e., participants in the community govern themselves.

To demonstrate how technological distractions can be very harmful, Kenneth Funk presented two examples from aviation (pilots turned off the good engine) and medicine (a surgeon is distracted while filling out a chart, indicates and later removes the good kidney). He brought out the thesis, “Technology can draw our attention from greater good to lesser good, and that is a kind of evil.” As Christians, technological distractions can take us away from pursuing the greatest good: serving God and his kingdom and other people.

Though the Hippocratic Oath is an admirable ethic, **James Rusthoven** discussed how Christian-based covenantal physician-patient relationships and the patient-supporter relationships could ultimately provide better care. Past covenantal models have lacked a transcendental nature, point to Greek mythology for justification, and focus the power handling on the caregiver side of the relationship. A Christian perspective includes a necessary dependence on a more primary, superhuman relationship and the essential elements for ethical deliberation and decision-making. ✉ *Michael Foster*

### VI-B. Scientific and Theological Contributions to Cosmic History and the History of Life

University of Waterloo physicist and astronomer **Robert Mann** spoke on “The Puzzle of Existence: A New Question for Science and Theology.” Calling himself a “Multiverse curmudgeon,” Mann presented the current model of the evolution of the universe. He explained why special effects were needed to explain the high degree of uniformity of the cosmic temperature field and that “inflation” was the currently-accepted model. While some cosmologists are infatuated with the multiverse model, the implications for both science and theology are not benign. Mann cited problems with causality and simplicity as scientific objections, and problems with responsibility and uniqueness as theological issues. For example, Jesus was offered once for all, but in a multiverse, he must have died many times.

Washington State physicist and astronomer **Philip Marston** spoke on “Humility, James Clerk Maxwell’s Perspective on Creation, and the Reaction of His Peers.” Maxwell was one of the most exemplary Christian scientists of all time, known and respected by leading scientists and leading theologians of his day. He even introduced Christian themes into his Presidential addresses at the British Association for the Advancement of Science. Because of this respect, public atheists were eager to discredit his thoughts. Maxwell defended the faith against atheism, but

was always circumspect about making extravagant claims. He had “a head made for the ages and a heart made for eternity.”

Third, Norwich University biologist **Carlos Pinkham** spoke on “Nine Phenomena That Recur throughout Cosmological, Abiological and Biological Evolution.” He has developed a set of nine criteria for analyzing actual phenomena. He illustrated the process by considering cosmic fine-tuning, the value of the cosmological constant, the element carbon, the water molecule, cell metabolism, and sensory perception. The virtuoso performance included very detailed slides and cogent thoughts. This level of metaphysical and analytical thinking was a credit to Christian philosophy of science.

A very stimulating session was completed by **Denis Lamoureux**, St. Joseph’s College, University of Alberta, Canada. In “Evolutionary Creation: A Christian Approach to Evolution,” Lamoureux presented the latest incarnation of his sermon on the creation and history of the cosmos. He removed the standard objections to the compatibility of evolutionary and creational thought and demonstrated a consilient version of natural history. One strength of his approach is a complete commitment to the highest levels of both science and biblical hermeneutics. He replaced standard objections with positive positions on all issues of natural and human history, stressing the importance of this approach for pastoral work. ✉ *Gary Patterson*

### VI-C. Alternative Energy Sources and Their Impact: Engineering and Appropriate Technology

**Leonard Bond**, Staff Scientist at Pacific Northwest National Laboratory, pointed out that when human population was much smaller, per capita human consumption and waste production didn’t matter so much; Earth’s systems were large enough to sustain the activity. But with Earth’s population heading toward nine billion, “carrying capacity” is very important. Earth won’t be able to “carry” nine billion humans who consume resources and generate greenhouse gases at the rates



presently operative in the G-8 nations. New energy-production technologies are needed, and also population stabilization. Leonard believes the Christian community should lead the way, adding "Business as usual won't work and rapture theology is irresponsible." A solution to the war on carbon will solve a plethora of problems—in energy, environment, economy, and foreign policy.

Kansas State University Electrical engineering professor **Ruth Douglas Miller** followed with a report on her participation in a project to install small- and mid-size wind turbines at K-12 schools in several western states. The installations reduce the schools' electricity bills and pay for themselves in six to ten years. Additional benefits include teaching students about renewable energy, kindling their interest in science and engineering, and reducing public opposition to wind energy and small utilities' apprehension about it. "God brought this project about," Ruth says. The project has been sponsored by National Renewable Energy Laboratory, and Ruth is hoping for renewal and extension with the next administration.

Environmental biologist Joe Sheldon recently retired from Messiah College and has built his dream home "as green as possible," adjacent to Au Sable's facility in Coupeville, WA. Joe described his talk as "a report on what one person has done to create solutions rather than environmental problems." Some of the home's features include minimal tree removal; geothermal ground-source heating and cooling by means of a heat pump; passive solar design; Structural Insulated Panel walls, and R-25 to R-38 closed-foam floors and ceilings. Photovoltaic panels reduce the electricity bill and in Joe's estimation offset 4 tons of carbon per year. The home's final SIBA green building score was 409—making it a candidate for a green building award. Joe says, "Solar water heating will be added when I can afford it. Then we will really approach a zero carbon footprint." ✉ **Jack Swearingen**

**NOTE:** Summary of III-C. Students and Early Career Network had not reached us by press time. All sessions are available in audio format on the ASA website, [www.asa3.org](http://www.asa3.org).

## Coming Events

- Sept. 18.** ASA Greater Chicago chapter, Cress Creek Country Club, Naperville, IL. Speaker: William Carroll, president of Benedictine U. Informal buffet. RSVP [Drjamesbaird@aol.com](mailto:Drjamesbaird@aol.com).
- Sept. 18–19.** "Are We Safe Yet? Vulnerability and Security in an Anxious Age," Yale Center for Faith & Culture. Explores the moral implications of crucial questions and problems impacting society today. More information at [www.yale.edu/faith/ssmc-2008.htm](http://www.yale.edu/faith/ssmc-2008.htm).
- Sept. 21–23.** Villanova University is hosting "Mendel in the 21st Century: The Scientific, Social, and Ethical Impact of Genetics in Our World." Featured speakers: Sean B. Carroll and Kenneth R. Miller. Free and open to the public. Information at [www.villanova.edu/events/yearofmendel/mendelsymposium/](http://www.villanova.edu/events/yearofmendel/mendelsymposium/)
- Sept. 26–27.** The Biblical Archaeology Society seminar, Dallas, TX. "Jesus and All Those Gospels," and other items. See [www.biblicalarchaeology.org](http://www.biblicalarchaeology.org) or call 1-800-221-4644
- Sept. 29.** Consortium Faculties' Convocation, Virginia Theological Seminary, 3 p.m. Keynote: **Francis Collins**. Choice of five science and religion workshops. Register at [wtc@washtheocon.org](mailto:wtc@washtheocon.org)
- Oct. 2.** Metanexus Lecture Series, "The Dignity of Difference," Stanley Hauerwas, Prof. of Theological Ethics, Duke U. Divinity School, at Eastern U., St. Davids, PA. (610) 341-5800. 7:00 p.m. Free.
- Oct. 3–4.** Skeptics Society Conference, Caltech, Pasadena, CA. Speakers include Paul Davies, Michael Shermer, **Hugh Ross** and Leonard Susskind. Information at <http://origins.skeptic.com/>
- Oct. 19.** Mini-Conference on "Faith, Integration and the Life of the Christian Scholar," 1–5 p.m. Rivendell House, New Haven, CT. Information available from [neil.arnet@yale.edu](mailto:neil.arnet@yale.edu)
- Oct. 23–25.** "Bottom-up Approaches to Global Poverty: Appropriate Technology, Social Entrepreneurship, and the Church." Baylor University, Waco, TX. Contact **Walter Bradley** at [Walter\\_Bradley@baylor.edu](mailto:Walter_Bradley@baylor.edu)
- Oct. 30–Nov. 2.** The International Christian Studies Association, under the leadership of **Oskar Gruenwald** is having a conference in Pasadena, CA, on "Christianity & Democracy: Jacques Maritain in Perspective." See [www.JIS3.org](http://www.JIS3.org). Participants can contact Hilton Pasadena at 1-800-445-8667 and mention ICSA for the group rate.
- Nov. 14.** Christian Fellowship of Human Geneticists, Philadelphia Conference Center, Room 102, 6:30–8:00 p.m. Speaker: **Ted Davis** talking about the Dover trial on Intelligent Design. Faculty and grad students invited (during annual meeting of 4,000+ geneticists). **Francis Collins** is also expected to be present. For additional information, contact **Elving Anderson** at [ander675@umn.edu](mailto:ander675@umn.edu).
- Nov. 21–23.** Bible and Archaeology Fest, Radisson Hotel, Boston. Features 20 renowned Bible and archaeology scholars. Call 1-800-221-4644, ext. 208. Email: [travelstudy@bib-arch.org](mailto:travelstudy@bib-arch.org)

## With the Lord

• **Maurice F. Knott** died on June 3 at age 94. He was a military chaplain during World War II. After discharge, he became active in real estate in the Irvine, CA, area. He joined ASA in 1997. One of his favorite hobbies was sailing, and he was out on the ocean just two months before his death.

• **John Marks Templeton** died July 8 in Nassau, Bahamas, at age 95. He received a degree in economics from Yale University in 1934 and was a Rhodes Scholar at the University of Oxford, graduating with a MA in law.

Sir John pioneered the use of globally diversified mutual funds. He was deeply involved in a multitude of philanthropic missions. He established the John Templeton Foundation to encourage the use of scientific methods to discover more about the spiritual realm. In 1972, he created the Templeton Prize for Progress toward Research or Discoveries about Spiritual Realities.

Sir John was a lifelong member of the Presbyterian Church and served as a trustee on the board of Princeton Theological Seminary for 42 years. He also served on the American Bible Society board. We send his son, **John M. Templeton, Jr.**, our condolences.

• **Glenn Kirkland** died on Aug. 11 at age 89. **Paul Arveson** remembers,

Glenn was a long-time leader in ASA in the Washington-Baltimore Section ... I attended Fourth Presbyterian Church with Glenn, and got to know him better when we worked together copying tapes for the C. S. Lewis Institute in the 1980s. What impressed me about Glenn was his cheerfulness ... He had an optimistic outlook on the world, and he demonstrated that most clearly when his wife, Grace, became a victim of Alzheimer's ... [Glenn] founded the Alzheimer's Disease Association of Maryland, one of the first such organizations in the country, to provide support and raise awareness of this disease ... He went on to become one of the country's leaders in this area ... He was one of the finest men I have ever met.

## Reactions to the Action: High Points of the Annual Meeting

**Margaret Towne** asked several attendees what they considered “high points” of the meeting. Responses included:

- “My visit to Mt. St. Helens was literally and figuratively my high point!”
- “I appreciated the variety of ages, scientists, heritages, experiences, cultures, questions, subjects and food. The two things we all had in common were our faith in God and our friendliness.”
- “The plenary sessions were outstanding. It’s hard to pick the best. This was my first Annual Meeting. I wish I’d known about ASA as a young person. I have a PhD in applied math and wondered how to fit my faith with my discipline as a young person. ASA helps to integrate a worldview for scientists who are Christians.”
- “The gender issues presentations were high points. Those subjects were different from what I usually study.”
- “Most provocative was the challenge related to renewable energy and our responsibility.”
- “The Annual Meeting went better than I ever could have asked or imagined.”

- “The presentation on bioethics and the challenge to make right decisions in face of difficult choices. I really appreciated Session IV on energy.”
- “We are a community with very diverse professions and geographic and religious backgrounds. The oneness was palpable.”
- “I had never encountered that 10<sup>th</sup>-century hymn that we sang at the worship service. That was neat.”
- “It wove together the two loves of my life: biology and faith. This is the first time I have attended an Annual Meeting that didn’t concentrate on just one field. I appreciate how all of science was related to my beliefs and the freedom I had to speak out about my faith.”
- “We discussed where we came from in light of cosmological and biological evolution, how we should live now (Micah 6:8)—greening, wind turbines, applying technology, recycling, etc. We didn’t discuss as much about where we are going, but that is OK.”
- “I enjoyed meeting an attorney. There are so many varied people here and that is so edifying and such a delight.”

- “The high points for me were the face-to-face dialogues. I met several new ASA members and also saw folk I’ve seen over the years. It was like a family reunion.”
- “This was my first Annual Meeting. I really enjoyed meeting in person people whom I had only known through e-mails, newsletters and the journal.”
- “There were unexpected talks. One on randomness was really thought-provoking. Randomness is not intuitive. It is natural law. How amazing! We should not be surprised at miracles. It may be a natural law that we don’t yet understand.”
- “Sustainability was a thread that ran through the conference. That was providential as it hadn’t been part of the plan.”
- “Thinking about God’s amazing creativity of the universes before the worship service was so inspiring and enhanced my worship.”
- “We talked about everything from multiverses to quarks. It was an awesome variety of subjects and it related spirituality into them all.”

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