CHRISTIAN WOMEN IN SCIENCE – STATE OF CWIS

ASA 2015 Annual Meeting
July 25, 2015
Tulsa, Oklahoma
Lynn L. Billman
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What is CWIS?

• A place for Christian Women in Science to connect with like-minded people
• An affiliate group of the American Scientific Affiliation (ASA)
• Launch: July 2013 ASA Annual Conference
• Mission: To encourage Christian women of all ages to pursue, sustain, and grow in a career in science, technology, engineering or math, and to encourage women in these endeavors to pursue, sustain, and grow in the Christian faith
What Does CWIS Offer You?

• For CWIS members
  • Emails on what’s new
  • Access to others CWIS-ers throughout the country through the ASA membership directory

• For all CWIS-ers
  • Blog space dedicated to CWIS topics
  • Email Buddy program – especially for Students and Early Career
  • Lifting Up Stories
  • Personal help from CWIS leaders (Board)
  • Info and informal partnerships with related organizations
  • Connections and encouragement!
CWIS Board of Directors

- Six women, coast to coast
- Secular academic, Christian academic, government research
- Early career, mid-career, retired
- Members, 2014-2015:
  - Dr. Gayle Ermer, engineering, Calvin College (MI)
  - Dr. Beth Kroa, chemistry, Bethel College (IN)
  - Ms. Faith Tucker, physics/astronomy education, Valley Christian High School (CA)
  - Dr. Kristen Tolson, biology, UC San Diego (CA)
  - Dr. Pat Fitzgerald-Bocarsly, immunology, New Jersey Medical School at Rutgers University (NJ)
  - Ms. Lynn Billman, chemistry and energy analysis, National Renewable Energy Lab (retired) (CO)
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Facebook – Please Like Us!

Christian Women in Science

NEED MORE GOOD “FINDS”!
Homage to Mary Anning

Posted By Alice C. Linsley, Wednesday, May 21, 2014

Today's Google Doodle pays homage to one of the great women in Science, Mary Anning.

Google Inc paid homage to the 215 anniversary of the birth of Mary Anning on May 21, 2014 with this Doodle on the homepage. Image credit: Google Inc.

Mary Anning (1799-1846) by the age of 12 had already discovered in rocks of the English countryside fossils that she would later describe as a plesiosaur. She spent more than 30 years collecting and describing fossils mostly in rock of Jurassic age. Anning along with William Buckland, who was well aware and an admirer of Mary’s work, described the first true dinosaur, and Cuvier who described and wrote about dinosaurs was instrumental in developing a picture of life in the Jurassic. It eventually led Cuvier to specifically propose that there had been an age of reptiles. This was a time when reptiles would have been the dominant animal. This was the earth versus the mammals that we have today. Like the discovery of deep time over the previous century this idea of earth’s changing biota over time presented a major challenge to established views of creation. (Read more...)
Lifting Up Stories

Lifting Up – Dr. Pat Fitzgerald-Bocarsly

Dr. Patricia (Pat) Fitzgerald-Bocarsly is a tenured associate professor at the New Jersey Medical School at Rutgers University. Andrew Bocarsly, also a scientist, have raised three children. Of their children, one daughter is another daughter is a social worker, and her son is a scientist, and recently discovered the American Scientific Affiliation (ASA) website. See more about Pat at her profile in the ASA membership directory.

Why are you a Christian? While I was raised nominally Christian high school youth group. Being a Christian is not an intellectual solution -- God reached out to me and has been incredibly faithful through my husband and I met as undergrads; he came from a Jewish background. We talked about Jesus.

Why are you a scientist? I’ve always been fascinated with science, from a first grade salt crystal experiment. In my first research lab, I was on the fence between becoming a physician or a veterinarian, and I decided to do viral immunology.

Lifting Up – Dr. Deborah Haarsma

Dr. Deborah Haarsma serves as President of The BioLogos Foundation, a position she has held since January 2013. Previously, she served as a professor and chair of Physics and Astronomy at Calvin College in Grand Rapids, Michigan. Deb has long been a supporter, presenter, and contributor to the American Scientific Affiliation (ASA). See more about Deb at her profile in the ASA membership directory.

Why are you a Christian? While I grew up in a Christian home, I am a Christian today because I made an adult choice to follow Jesus. I committed and recommitted myself to Christ multiple times through my childhood and young adult years, as I grew to understand God, the Bible, and my need for Christ more deeply. Every day, I ask myself, "Where is God’s grace and forgiveness?"

Why are you a scientist? I almost wasn’t. I grew up loving piano and classical music as well as science and math. I even did a double major in piano and physics, before deciding to pursue a science career. (I continued piano on the side, of course – it’s a lot easier than doing physics on the side!) In college, I remember lab projects where our group collected data, graphed it, and plotted the theoretical prediction over the data, and – lo and behold – it fit! I am still amazed every time I see physical theories, developed by human reasoning, accurately describing the real world that God created. In grad school, I decided to specialize in astrophysics because I was fascinated by the extreme physics out there in the universe that we can’t replicate on earth, like
CWIS – Who Are We? (207 members)

By Highest Degree (out of 195 entries)
- PhD: 70.36%
- BS/BA: 71.36%
- MS/MA: 18.9%
- Other: 1.0%, 1.0%

By Membership Type
- Regular: 87.42%
- Student: 101.49%
- Family: 11.5%
- Staff: 7.3%
- Newsletter: 1.1%

By Profession (out of 70 entries)
- Education/Christian: 32.45%
- Industrial Research: 10.14%
- Government Research: 9.13%
- Engineering: 4.6%
- Other Profession: 4.6%
- Computers: 4.6%
- Retired: 2.3%
- Education/secular: 1.1%

Source: ASA member database as of 7/20/15
Christian Women in Science

By Technical Discipline
(out of 188 entries)

By Location

Source: ASA member database as of 7/20/15
How to Find CWIS

• Webpage:  http://network.asa3.org/group/CWIS

• Facebook:  https://www.facebook.com/ChristianWomenInScience

• Email:  CWIS.ASA@gmail.com
# Women in the ASA

<table>
<thead>
<tr>
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<th>6/1/2013</th>
<th>7/10/2014</th>
<th>7/19/2015</th>
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</thead>
<tbody>
<tr>
<td><strong>Members: Male</strong></td>
<td>1450</td>
<td>1438</td>
<td>1580</td>
</tr>
<tr>
<td><strong>Members: Female</strong></td>
<td>320</td>
<td>401</td>
<td>556</td>
</tr>
<tr>
<td><strong>Women as % of Total</strong></td>
<td>18%</td>
<td>22%</td>
<td>26%</td>
</tr>
<tr>
<td><strong>Fellows: Male</strong></td>
<td>167</td>
<td>171</td>
<td>154</td>
</tr>
<tr>
<td><strong>Fellows: Female</strong></td>
<td>19</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td><strong>Women as % of Total</strong></td>
<td>12%</td>
<td>11%</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Students: Male</strong></td>
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<td>n/a</td>
<td>381</td>
</tr>
<tr>
<td><strong>Students: Female</strong></td>
<td>n/a</td>
<td>n/a</td>
<td>358</td>
</tr>
<tr>
<td><strong>Women as % of Total</strong></td>
<td>n/a</td>
<td>n/a</td>
<td>48%</td>
</tr>
<tr>
<td><strong>CWIS Members</strong></td>
<td>0</td>
<td>118</td>
<td>207</td>
</tr>
</tbody>
</table>

Source: ASA member database as of 7/19/15 plus Fellow information
Women on ASA Council

- ASA Council has five members, rotating one/yr
- Since 1983, we’ve struggled to retain one female among the five members each year
- Could not find a female candidate for the Fall 2015 election

Let’s fill the pipeline!
How Can We Retain Students in ASA?

- Nexus Forum! (to build connections; just launched)
- Ask them (do a survey)?
  - Encourage the formation of campus-level ASA relationships?
  - Increase the amount of scholarship money to encourage SEC members to come to the annual conference?
  - Formalized networking opportunity at each annual conference?
  - Continue to have a “Plenary Speaker/SEC Member” social hour?
  - Offer a session or workshop at each annual conference on life/work issues?
  - Inform all SEC members about mentoring or mentor-like opportunities?
  - Maintain and expand a “Job Board”?
  - Improve the ASA online member database?

What do you think?
Becoming a Fellow in ASA

• Five years as REGULAR member (not student)
• Strong accomplishments in at least two of these three areas:
  • Professional / technical achievements
  • Contributions to ASA (national or local chapter)
  • Contributions to faith/science discussions beyond ASA

Tell me about someone you know and how they are qualified!

Tell me about yourself!
NEW! – Nexus Forum

- A place to connect with other ASAers
- Share with, and benefit from, fellow ASA members from all professions, perspectives, and life experiences.
- Outgrowth of CWIS efforts
- One new Topic each month
Question 1: Academia vs. Industry

What are the pros and cons of teaching at a university, doing research at a large or small company, or doing research at a government lab?

Related resource: *Jurassic July: The Three-Legged Stool of Science*, by Andy Walsh. Emerging Scholars Network Blog, July 8, 2015. (Click here for link)
Nexus Forum -- Potential Topics

- Academia vs Industry
- Career Stages
- Graduate School/Post doc Life
- Professional Expectations
- Entrepreneurship
- Maintaining Personal Balance
- Life Stages/Decisions
- First Generation College Student/Scientist
- Faith and Work
- Faith Journey
- The Job Market
- Identity/Self-Awareness
- Cultural Challenges
- Overcoming Roadblocks
- Crisis, Grief, and Loss
- Relationships and Family

What’s important to YOU?
CWIS Next Year in California

- Technical session/panel? On what topic/theme?
- Special local tour sponsored by CWIS? For women only? (Friday)
- Networking Lunch? Hike? (Saturday)
- “State of CWIS” meeting? (Saturday or Sunday evening)
- Bible study/devotional time for women only? (Friday)
- Something extra for women on Thursday?
- Organize child care (bring the family)?

What do YOU think?
THANKS!

Lynn L. Billman

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