

# ASA 2025



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**Robert Ddamulira**



**Jeff Hardin**

## SCIENCE & TECHNOLOGY AS WORSHIP

79th Annual Meeting | July 18 - 21, 2025

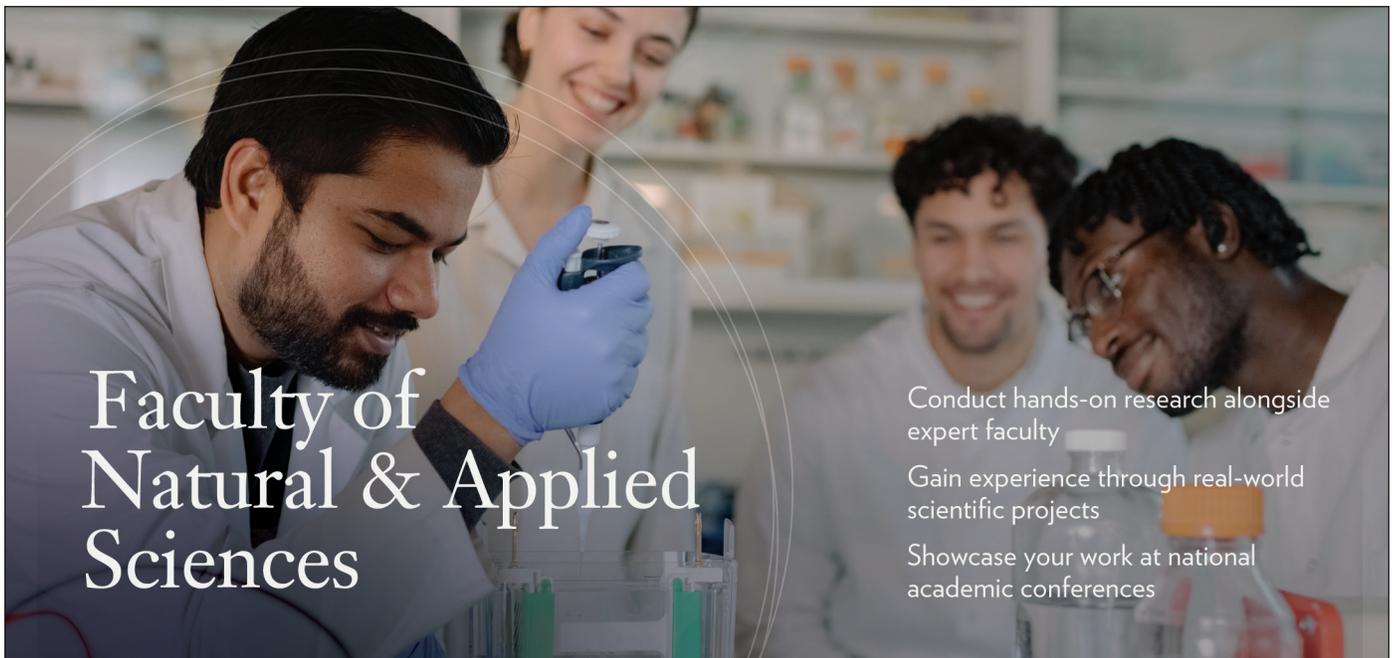
Colorado Christian University, Lakewood, CO

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# GENERAL INFORMATION

## ASA REGISTRATION

See schedule and locations below.

Thursday: 3:00 PM – 10:00 PM; Yetter Lobby  
Friday: 8:15 AM – 5:00 PM; Yetter Lobby  
Friday: 6:30 PM – 10:00 PM; Armstrong Center, McTavish Atrium  
Saturday: 8:15 AM – 8:30 PM; Armstrong Center, McTavish Atrium  
Sunday: 10:30 AM – 8:00 PM; Armstrong Center, McTavish Atrium  
Monday: 8:15 AM – 2:00 PM; Armstrong Center, McTavish Atrium

## CAMPUS HOUSING

After registering at the ASA table, room keys are picked up at the residence hall desk. If you are arriving after 11:00 PM, please call Dana Oleskiewicz, 330-466-5631. Each guest needs to sign for their keys and return them in their unique labeled envelope upon checkout. Lost hard keys and lost proxy card are charged \$100 USD.

## CAMPUS PARKING

There is no charge for parking on campus but a **parking pass is required**. Parking passes will be given upon check-in. Please place the parking pass visibly on your dashboard. Parking in Student Center Visitor Parking Lot is **PROHIBITED**.

## CAMPUS SECURITY

Phone number: 303-963-3222.

## CAMPUS WI-FI NETWORK

Select **CCU-Guest** from the list of Wi-Fi networks.

Enter the login name **asa** and password **vK8Lanf3iU**.

## CSCA ANNUAL GENERAL MEETING

will be held Sunday, July 20, from 5:00 PM to 7:30 PM in Anschutz Student Center, Great Hall.

## EXHIBIT TABLES

are located in Armstrong Center 120.

Friday: 4:30 PM – 10:00 PM  
Saturday: 9:45 AM – 5:00 PM  
Sunday: 10:30 AM – 5:00 PM  
Monday: 9:45 AM – 11:45 AM

## FIELD TRIPS

Bus/van pick up and drop off in Yetter Hall parking lot.

Friday: 8:00 AM–12:45 PM NREL Golden Tour  
Friday: 8:45 AM – 1:00 PM Colorado School of Mines and Calvary Church Tour  
Friday: 9:00 AM – 4:00 PM Geology Trip  
Friday: 12:00 PM – 4:30 PM NREL Flatirons Tour  
Monday: 1:00 PM – 4:00 PM Afternoon in Golden: Where the West Lives

## MEAL MEET-UPS

Meal meet-ups will be held in the Anschutz Student Center, Great Hall.

Friday: 5:00 PM Dinner Meet-Up: First-Time Attendees  
Saturday: 7:00 AM Breakfast Meet-Up: Geologists  
7:00 AM Breakfast Meet-Up: Biologists  
12:00 PM Lunch Meet-Up: Students and Early Career  
5:00 PM Dinner Meet-Up: AI/Machine Learning  
5:00 PM Dinner Meet-Up: Entrepreneurs  
5:00 PM Dinner Meet-Up: Science Writers  
5:00 PM Dinner Meet-Up: Creation Care Advocates  
Sunday: 7:00 AM Breakfast Meet-Up: CWiS (Christian Women in Science)  
7:00 AM Breakfast Meet-Up: Theologians, Ministers, and Philosophers  
12:00 PM Lunch Meet-Up: Spouses  
12:00 PM Lunch Meet-Up: *PSCF* Editorial Board  
5:00 PM Dinner Meet-Up: CSCA (Canadian Scientific and Christian Affiliation)  
Monday: 7:00 AM Breakfast Meet-Up: Engineers

**MORNING WALKS** Meet in front of Anschutz Student Center. All are welcome.

Saturday: 6:00 AM Morning walk around campus, led by Jamie Noyd and Julie Woodman  
Sunday: 6:30 AM Morning walk to and around Koontz Lake, led by Angela Kantola  
Monday: 6:00 AM Morning walk to and from Adenbrooke Park, led by Lara Whelan

**PLENARY SESSIONS** are held in the Armstrong Center, McDonald Performance Hall.

Friday: 7:30 PM Robert Ddamulira, "When the Green Movement Meets Jesus: A Christ-Like Model of Environmental Leadership"  
Saturday: 8:45 AM Sherol Chen, "Narrative Intelligence: The Agency and Authorial Leverage of Storytelling Amidst Advancements in AI"  
Saturday: 7:30 PM Abram Bicksler, "The Power of Partnerships to Bring About a Transformed World That Honors God Amid Mega-trends Affecting Our World, the Church, and the Creation"  
Sunday: 11:00 AM Ruth Bancewicz, "Science as Worship in the Laboratory and in the Church"  
Monday: 8:45 AM Jeff Hardin, "Fearfully and Wonderfully (Self)Made: Christian Faith and the Wonder of the Embryo"

**POSTER SESSION** will be held Saturday, July 19, from 2:30 PM to 3:30 PM in the Armstrong Center, McTavish Hallway. Winner of the Student Poster Contest will be announced at the Ice Cream Social | InterVarsity Reception.

**SOCIALS**

Friday: 8:30 PM Mixer  
Saturday: 9:00 PM Dessert Reception  
Sunday: 9:00 PM Ice Cream Social | InterVarsity Reception

**SPORTS** Join us any time on the Anschutz lawn Sunday, July 20, from 5:30 PM to 7:00 PM for a game of softball or sand volleyball.

**STATE OF THE ASA** will be held Sunday, July 20, from 7:30 PM to 9:00 PM in the Armstrong Center, McDonald Performance Hall.

**WATER BOTTLE FILLING STATIONS** are located in Leprino Hall, Anschutz Student Center, and Armstrong Center.

**WORKSHOPS**

Friday:	8:30 AM	Climate Change Mitigation from a Biblical Perspective	Leprino 104
	12:00 PM	Hosts: Fred S. Cannon, Jessica Moerman, and B. Moses Abraham	
Friday:	1:15 PM	Perspectives and Spiritual Practices for the Scientific Vocation	Leprino 104
	2:45 PM	Hosts: Brian Gray and Jeff Hoffmeyer from the Denver Institute for Faith & Work	
Friday:	3:00 PM	Introduction to the Science-Faith Conversation and the ASA	Leprino 104
	6:00 PM	Facilitators: Steven Contakes and Se Kim	

## Many thanks to ...

- Program chairs **Mark Parker, Ian Clary, and Cory Hixson** for their countless hours of preparation.
- Local arrangements chairs **Julie Woodman, Jim Green, and Lynn Billman** for their assistance with local arrangements and field trips.
- Publicity chair **Peter Brissette** for his valuable help with publicity.
- The many **donors** who contributed to the **Student Scholarship Fund**.

## THE ASA SPIRIT

Each presenter's beliefs and viewpoints are their own and may not necessarily represent those of the American Scientific Affiliation. The ASA strives to create a safe environment where dialogue can flourish and contrasting ideas can be discussed with courtesy and respect. As such, we encourage presenters, discussants, and members to exhibit intellectual humility in presenting, discussing, and receiving arguments, and thoughtfully consider their responses to new evidence and viewpoints. If there are any specific concerns or questions, participants are welcome to share their concern with an executive team member or board member or through the post-event survey.

# PRE-MEETING ACTIVITIES

THURSDAY, 17 JULY 2025		
3:00 PM–10:00 PM	ASA Meeting and Lodging Registration	Yetter Hall Lobby
6:00 PM	Retreat for Underrepresented Scientists — Welcome, Dinner, Opening Session Organizer: <b>Hannah Eagleson</b> ; Leader: <b>Christina Cross</b>	Leprino 170
6:00 PM	Special Friends and Fellows Dinner	Offsite

FRIDAY, 18 JULY 2025		
7:30 AM–8:30 AM	Breakfast	Anschutz Student Center, Dining Commons
8:00 AM–12:45 PM	Field Trip: NREL Golden Tour <sup>1</sup>	Meet in Yetter Hall parking lot
8:15 AM	ASA Meeting and Lodging Registration	Yetter Hall Lobby
8:30 AM–12:00 PM	Workshop 1: Climate Change Mitigation from a Biblical Perspective Hosts: <b>Fred Cannon</b> ,* <b>Jessica Moerman</b> , and <b>B. Moses Abraham</b>	Leprino 104
8:45 AM–1:00 PM	Field Trip: Colorado School of Mines and Calvary Church Tour <sup>1</sup>	Meet in Yetter Hall parking lot
9:00 AM–4:00 PM	Field Trip: Geology Trip <sup>1</sup>	Meet in Yetter Hall parking lot
9:00 AM–5:00 PM	Retreat for Underrepresented Scientists	Leprino 170
12:00 PM–1:30 PM	Lunch	Dining Commons
12:00 PM–4:30 PM	Field Trip: NREL Flatirons Tour <sup>1</sup>	Meet in Yetter Hall parking lot
1:00 PM–6:30 PM	Exhibits Set Up	Armstrong Center 120
1:00 PM–6:30 PM	Posters Set Up	Armstrong Center, McTavish Hallway
1:15 PM–2:45 PM	Workshop 2: Perspective and Spiritual Practices for the Scientific Vocation Hosts: <b>Brian Gray</b> and <b>Jeff Hoffmeyer</b> , Denver Institute for Faith & Work	Leprino 104
3:00 PM–6:00 PM	Workshop 3: Introduction to the Science-Faith Conversation and the ASA (includes dinner meet-up) Facilitators: <b>Stephen Contakes</b> * and <b>Se Kim</b> *	Leprino 104

<sup>1</sup>Please arrive 15 minutes before departure time.

# PROGRAM SCHEDULE

FRIDAY, 18 JULY 2025		
5:00 PM–6:30 PM	Dinner Dinner Meet-Up: <b>First-Time Attendees</b>	Anschutz Student Center, Dining Commons Anschutz Student Center, Great Hall
6:30 PM	ASA Meeting and Lodging Registration	Armstrong Center, McTavish Atrium
7:00 PM–7:30 PM	Welcome, Introductions, Announcements • <b>Janel Curry</b> ,* ASA President • <b>Vicki Best</b> , ASA Executive Vice President • <b>Mark Parker</b> ,* Program Cochair	Armstrong Center, McDonald Performance Hall
7:30 PM–8:30 PM	<b>Plenary I</b> <b>Robert Ddamulira</b> , “When the Green Movement Meets Jesus: A Christ-Like Model of Environmental Leadership” Moderator: <b>Mark Strand</b> *	Armstrong Center, McDonald Performance Hall (9)
8:30 PM–10:00 PM	Mixer	Anschutz Student Center, South Patio
10:00 PM	ASA Meeting and Lodging Registration closes	Armstrong Center, McTavish Atrium

PLEASE NOTE: Number within the parentheses is the page number for the abstract.

\*ASA Fellow

SATURDAY, 19 JULY 2025				
6:00 AM	Morning walk around campus, led by Jamie Noyd and Julie Woodman			Meet in front of Anschutz Student Center
7:00 AM–8:30 AM	Breakfast Breakfast Meet-Ups: <b>Geologists, Biologists</b> —All geologists, biologists are invited			Anschutz Student Center, Dining Commons Great Hall
8:15 AM	ASA Registration Opens			Armstrong Center, McTavish Atrium
8:15 AM	<b>Devotions</b> Worship Leader: <b>Ciara Reyes-Ton</b> , Mount Carmell Worship Collective Devotional: <b>J. Nathan Matias</b> , “A Lament for Scientists under Attack”			Armstrong Center, McDonald Performance Hall
8:45 AM–9:45 AM	<b>Plenary II</b> <b>Sherol Chen</b> , “Narrative Intelligence: The Agency and Authorial Leverage of Storytelling Amidst Advancements in AI” Moderator: <b>Karma Carrier</b>			Armstrong Center, McDonald Performance Hall (9)
9:45 AM–5:15 PM	Poster Viewing			Armstrong Center, McTavish Hallway
9:45 AM–5:00 PM	Exhibit Tables			Armstrong Center 120
9:45 AM	Beverage Break			Armstrong Center, McTavish Atrium
10:15 AM–11:45 AM	<b>I.A. Integration of Faith in STEM Education 1</b> —Performance Hall Moderator: <b>John Lewis</b>	<b>I.B. Life and Health Sciences 1</b> —Leprino 102 Moderator: <b>Kathryn Applegate*</b>	<b>I.C. Physical and Environmental Sciences 1</b> —Leprino 104 Moderator: <b>Keith Miller*</b>	<b>I.D. Students and Early Career</b> —Leprino 202 Moderators: <b>Dwight Schwartz</b> and <b>Hannah Eagleson</b>
10:15 AM	<b>Erik Lindquist</b> and <b>John Harms</b> (13) “Bookending Cornerstone and Capstone Courses for Inspiring a Holistic Synthesis of Faith and the Biological Sciences”	<b>Gregg Davidson*</b> (13) “On the Logic of Using Examples from Nature as a Guide for Human Sexuality”	<b>Steven Ball*</b> (13) “Cosmology for Christians”	<b>Panel</b> (13–15) Faith & Work for Science: Flourishing in Challenging Times  <i>Cosponsored by InterVarsity’s Emerging Scholars Network</i>
10:45 AM	<b>Karri Iverson</b> (14) “For His Glory: Designing Curriculum That Encourages Worship”	<b>Oscar Gonzalez*</b> (14) “The Connection Between Zoonosis and Creation Care”	<b>David A. Larrabee*</b> (14) “Creation Care and the Church: More Than Just Climate Change”	
11:15 AM	<b>Edward B. Davis*</b> (15) “Teaching Science Majors about Christianity and Science”	<b>James Painter</b> (15) “Benefits of Fasting for the Whole Person: Spirit, Soul, and Body”	<b>George McKibbin</b> (15) “A Church Guide to Addressing Planetary Boundaries”	
12:00 PM–1:00 PM	Lunch Lunch Meet-Ups: <b>Students and Early Career</b>			Dining Commons Great Hall
1:00 PM–2:30 PM	<b>II.A. Engineering, Technology, Computer Science 1</b> —Performance Hall Moderator: <b>Derek Schuurman*</b>	<b>II.B. Theology and Humanities 1</b> —Leprino 102 Moderator: <b>Katy Hinman</b>	<b>II.C. Psychology, Neurological and Behavioral Sciences 1</b> —Leprino 104 Moderator: <b>Kathryn Applegate*</b>	<b>II.D. Physical and Environmental Sciences 2</b> —Leprino 202 Moderator: <b>Deb Haarsma*</b>
1:00 PM	<b>Philip P. Graybill</b> (16) “Christian Perspectives on Technological Asceticism”	<b>Mallory A. Hrehor</b> (16) ““Last stop, Chaos!’: Consistency as an Epistemic Value in Christian Reconstructionist Science Skepticism”	<b>E. Janet Warren*</b> (16) “Apparitional Experiences: The Science and Theology”	<b>Vladimir Paserin*</b> (16) “Revisiting the Mond Process: The Greenest and Most Creation-Care Sensitive Approach to Battery-Grade Nickel and Iron?”
1:30 PM	<b>Daren Erisman</b> (17) “Proleptic Guardrails for Humanity and AI: Generative AI in an Age of Uncertainty”	<b>Gary W. Burdick</b> (17) “The Philosophical and Theological Foundations of Modern Empirical Science”	<b>Dana Oleskiewicz</b> (17) “Cultural Competency Toward Understanding Gender Identity Using Case Study and Christian Ethics as Faithful Worship”	<b>David B. Robbins</b> (17) “Understanding How the Mountains Were Formed Inspires Deeper Worship”
2:00 PM	<b>Noel W. Anderson</b> (18) “Created and Called: Humans with AI on Sunday Mornings”	<b>John R. Wood*</b> (18) “A Theology of Creation Care Needs the Gift of Finitude”	<b>Eric Araújo</b> and <b>Fernando Pasquini Santos</b> (18) “Behavioral Insights into Political Polarization in Christian Communities through Computational Modeling”	<b>Sydney Crowder</b> and <b>Cory Hixson</b> (18) “Christian Female STEM Students Experiences Being in a Predominantly Male Environment”

PLEASE NOTE: Number within the parentheses is the page number for the abstract.  
\*ASA Fellow

2:30 PM–3:30 PM	<b>Poster Session</b> <span style="float: right;">Armstrong Center, McTavish Hallway</span>			
	<ol style="list-style-type: none"> <li>1. <b>Daniel Aletheuo and Julie Woodman</b>,* “Exploring Creation Through a STEM Outreach Activity” † (31)</li> <li>2. <b>Julianne Armijo</b>, “Christianity as a Harmful and Healing Influence Among Nursing Professionals with Bipolar Disorder” † (31)</li> <li>3. <b>Isaac Kofi Bekoe</b>, “Institutional Quality and Environmental Sustainability in Canada: From a Faith-Based Perspective” † (31)</li> <li>4. <b>David Campbell</b>,* “The Meek Will Inherit the Earth Sciences: Humble Confidence in Science and Scripture” (32)</li> <li>5. <b>Timothy Campbell</b>, “‘Lower Heterobranchia’: An Odd Twist on Snails” † (32)</li> <li>6. <b>Clay Carlson</b>,* “Nature Corrupted: Characterization of a Highly Antibiotic-Resistant Pathogen Isolated from a Suburban Creek” (32)</li> <li>7. <b>Amaya de Vin, Jennifer Boone, and Heather Prior</b>,* “‘Creation’s Calling’: A Creative Expression to Inspire the Younger Generation” † (32)</li> <li>8. <b>Benjamin B. Ding</b>, “Sir Isaac Newton: Scientific Hero and Religious Heretic” † (33)</li> <li>9. <b>J. Elizabeth Doan</b>, “Liturgy and the Laboratory: Practicing Science as Worship Through Course-Based Undergraduate Research” (33)</li> <li>10. <b>Christina Dokter</b>, “Wisdom Science and Food to End Hunger” (33)</li> <li>11. <b>Victor Adrian Estrada Leon and Berenise Charlton</b>, “Tracking Microbial Threats: Citizen Science Monitoring of Arizona’s Impaired Waters” † (33)</li> <li>12. <b>Elaine Fung</b>, “Communicating Faith Values Through Technology: An Examination of Chinese American Churches’ Websites and Mission Statements” † (34)</li> <li>13. <b>Ellen B. Gouws</b>, “Type 1 IFN Decreases Infectivity, but Promotes Spread of <i>Shigella Flexneri</i>” † (34)</li> <li>14. <b>Jim Green</b>, “The Remarkable Timeline of Apologetics” (34)</li> <li>15. <b>Elise Grosdidier, Josie Grosdidier, and Julie Woodman</b>,* “Culturing Live Yeast from Old Testament Times” † (34)</li> <li>16. <b>Felipe Anibal Gutiérrez Antinopai</b>, “How Christianity Could Strengthen the Measurement of Well-Being: Navigating Among Contexts and Internal Dimensions” † (35)</li> <li>17. <b>Charles E. Hunt</b>,* “The Light For Liberia Project: Energy for the Poorest of the Poor” (35)</li> <li>18. <b>William Jordan</b>,* “An Engineer’s Work and Worship in Retirement” (35)</li> <li>19. <b>Joyce Lawson and Emmalyn Browns</b>, “Theological Perspectives on Faith and Science: Insights from Protestant Ministers in the Southeastern U.S.” † (35)</li> <li>20. <b>Xavier Martin and Oscar Gonzalez</b>,* “Rusty Blackbirds May Use Predator Satiation as a Survival Strategy. Could This Be a Strategy for Christian Communities?” † (36)</li> <li>21. <b>Marilyn Naeem</b>, “Synthetic Strategies to Break the C<sub>3</sub>-Symmetry of Tris(amido)amine Ligands” † (36)</li> <li>22. <b>Jessica Neamtu</b>,* “Euthanasia: Malevolence Masquerading as Mercy” † (36)</li> <li>23. <b>Andrew Park</b>, “Missional Internships Embedded in STEM Education at Universities” (36)</li> <li>24. <b>Arnold E. Sikkema</b>,* “Origin or History: Clarifying Perspectives on the Big Bang” (37)</li> <li>25. <b>Aeisha Thomas</b>, “Faith and Bioethics Education: Exploring Christian Bioethical Themes for Teaching Undergraduate Biology” (37)</li> <li>26. <b>Henry D. Voss</b>, “Gobekli-Portasar (~9,700 BC) Evidence for a Noachian Civilization?” (37)</li> <li>27. <b>Steven J. Willing</b>, “Transgenderism Through the Lens of Neuroscience” (37)</li> <li>28. <b>Ray’Chel Wilson</b>, “From Scripture to Strategy: Bridging Theology and Stewardship Science for Organizational Growth” † (38)</li> <li>29. <b>Elijah Winslow</b>,* “Healing Hemlock: Therapeutic Potential of Phytochemicals” † (38)</li> </ol> <p style="text-align: center;">†Student posters</p>			
2:30 PM	Refreshment Break <span style="float: right;">Armstrong Center, McTavish Atrium</span>			
3:30 PM–5:00 PM	<b>III.A. Life and Health Sciences 2</b> –Performance Hall  Moderator: <b>Rebecca Dielschneider*</b>	<b>III.B. Engineering, Technology Computer Science 2</b> –Leprino 102  Moderator: <b>Paul Arveson*</b>	<b>III.C. Theology and Humanities 2</b> –Leprino 104  Moderator: <b>Ed Gall</b>	<b>III.D. Lightning Talks + Conversation: Biology</b> –Great Hall  Coordinators: <b>Dana Oleskiewicz and Hannah Eagleson</b>
3:30 PM	<b>Igor V. Sharakhov</b> (19) “Different Means to the Same End: Diversity of Isolating Mechanisms in the Origin of Species”	<b>Saulo de Oliveira Cantanhêde</b> (19) “Unveiling the Syntax of Sacred Texts with Machine Learning”	<b>Victoria Campbell</b> (19) “How Science Catalyzed a Better Understanding of Genesis 1–3”	<b>Christian Biologists</b> (19–21)  <b>Join Us for a Brand New ASA Session Format!</b> Our goal is to connect participants with ASA affiliate groups or networks, share models for connecting faith and your field, and start rich discussions that will last long beyond the session.  Speakers: <b>Brian Greuel</b> <b>John Lewis</b> <b>Sarah Gall</b>
4:00 PM	<b>Perry Marshall</b> (20) “Natural Viral Engineering in Cognition-Based Evolution”	<b>Fernando Pasquini Santos and Eric Araújo</b> (20) “Toward Computational Science and Religion Studies”	<b>Jim Stump</b> (20) “The Spiritual Journey of <i>Homo Sapiens</i> ”	
4:30 PM	<b>Mark A. Strand*</b> (21) “Challenges to Reliable Epidemiology and the Implications for Population Health”	<b>Derek C. Schuurman*</b> (21) “Design Norms and Virtues for Artificial Intelligence Education and Design”	<b>Paul H. Carr*</b> (21) “New Creation Care Theology and Technology”	

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 \*ASA Fellow

**SATURDAY—SUNDAY, 20 JULY 2025**

5:00 PM–6:30 PM	Dinner Dinner Meet-Ups: All attendees interested in <b>AI/Machine Learning</b> , all <b>Entrepreneurs</b> , <b>Science Writers</b> , and <b>Creation Care Advocates</b> are invited	Dining Commons Great Hall
7:30 PM–9:00 PM	<b>Plenary III – Public Event</b> <b>Abram Bicksler</b> , “The Power of Partnerships to Bring About a Transformed World That Honors God Amid Mega-trends Affecting Our World, the Church, and the Creation” Respondant: <b>Brian Gray</b> Moderator: <b>Debra Schwinn*</b>	Armstrong Center, McDonald Performance Hall (10) (10)
We are grateful for our partnership with the Denver Institute for Faith & Work for co-sponsoring this public event.		
9:00 PM–10:15 PM	Dessert Reception	Anschutz Student Center, South Patio



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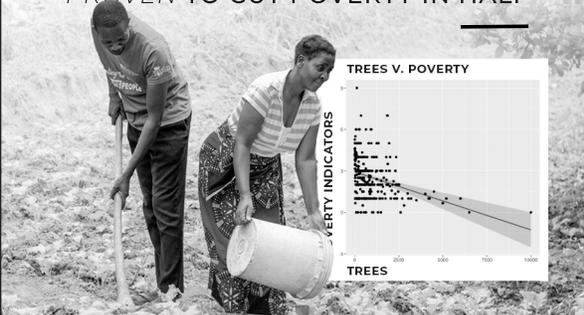
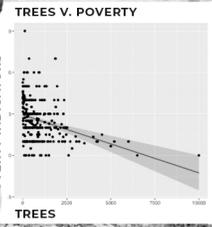
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<b>SUNDAY, 20 JULY 2025</b>		
6:30 AM	Morning walk to and around Koontz Lake, led by Angela Kantola; all are welcome	Meet in front of Anschutz Student Center
7:00 AM–8:30 AM	Breakfast Breakfast Meet-Up: <b>Christian Women in Science (CWIS)</b> —All women are invited Breakfast Meet-Up: <b>Theologians, Ministers, &amp; Philosophers</b> —All theologians, ministers, & philosophers are invited	Anschutz Student Center, Dining Commons Great Hall Great Hall
9:30 AM–10:30 AM	<b>Worship Service</b> Worship Leader: <b>Ciara Reyes-Ton</b> , Mount Carmell Worship Collective Minister: <b>Hugh Ross*</b> , “The Salt of the Earth” Offering: This year’s offering will support Mean Street Ministry	Armstrong Center, McDonald Performance Hall (12) (12)

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\*ASA Fellow

10:30 AM–5:00 PM	Poster Viewing				Armstrong Center, McTavish Hallway
10:30 AM–5:00 PM	Exhibit Tables				Armstrong Center 120
10:30 AM	Beverage Break				Armstrong Center, McTavish Atrium
11:00 AM–12:00 PM	<b>Plenary IV</b> <b>Ruth Bancewicz,*</b> “Science as Worship in the Laboratory and in the Church” Moderator: <b>Robert Geddes*</b>				Armstrong Center, McDonald Performance Hall (11)
12:00 PM–1:00 PM	Lunch Lunch Meet-Up: <b>Spouses</b> —All spouses are invited Lunch Meet-Up: <b>PSCF Editorial Board</b>				Dining Commons Great Hall Leprino 202
1:15 PM–2:45 PM	<b>IV.A. Psychology, Neurological and Behavioral Sciences 2</b> —Performance Hall  Moderator: <b>William Jordan*</b>	<b>IV.B. Integration of Faith in STEM Education 2</b> —Leprino 204  Moderator: <b>Brian Greuel*</b>	<b>IV.C. Physical and Environmental Sciences 3</b> —Leprino 206  Moderator: <b>Steven Ball*</b>	<b>IV.D. Lightning Talks + Conversation: AI and ML</b> —Great Hall  Coordinators: <b>Dana Oleskiewicz and Hannah Eagleson</b>	
1:15 PM	<b>Kyle Valentino</b> (22) “Understanding Depression: Evolutionary, Neurobiological, and Contemporary Perspectives”	<b>Rebecca Dielschneider*</b> (22) “Teaching Tough Topics: Finding Joy in Cancer Biology Through Film”	<b>Sidney Niemeyer</b> (22) “Making Connections: A Source of Wonder and Joy”	Artificial Intelligence (22–24) and Machine Learning  <b>Join Us for a Brand New ASA Session Format!</b>  Our goal is to connect participants with ASA affiliate groups or networks, share models for connecting faith and your field, and start rich discussions that will last long beyond the session.  Hannah Eagleson and Derek Schuurman will introduce new and ongoing ASA work on AI topics, followed by lightning talks from other speakers.	
1:45 PM	<b>Bryan J. Dik*</b> (23) “Psychological Research on Work as a Calling: Implications for Christian Discourse on Vocation”	<b>Raymond Lewis*</b> (23) “Teaching Scientific Understandings of Origins in the Context of the Doctrine of Creation”	<b>Terry M. Gray*</b> (23) “CO <sub>2</sub> Musings”		
2:15 PM	<b>Charitie Martino</b> (24) “Leveraging Adaptive Resonance Theory for Memory Data: An Autonomous Approach without Back Propagation”	<b>Stephen Moshier*</b> (24) “Helping Students Understand New Scientific Discoveries in Origins”	<b>Hugh Ross*</b> (24) “What the Great Migrations Reveal about the Extent and Timing of Noah’s Flood”		
2:45 PM	Refreshment Break				Armstrong Center, McTavish Atrium
3:15 PM–4:45 PM	<b>V.A. Theology and Humanities 3</b> —Performance Hall  Moderator: <b>Tom Ferko*</b>	<b>V.B. Life and Health Sciences 3</b> —Leprino 204  Moderator: <b>Tony Jelsma*</b>	<b>V.C. President’s Panel</b> —Leprino 206  Facilitator: <b>Janel Curry*</b>	<b>V.D. Affiliates and Chapters Workshop</b> —Leprino 202  Moderator: <b>Dana Oleskiewicz</b>	
3:15 PM	<b>Carol C. Kankelborg</b> (25) “Toward Transcending the Conflict Model”	<b>Chloe Liu</b> (25) “Are Breast and Prostate Cancers Similar? Exploring Today’s Research Directions Through the Lens of Redemption”	Navigating Callings (25–27) and Dual Careers  Panelists: <b>Keith Miller*</b> <b>Ruth Douglas Miller*</b> <b>Karma Carrier</b> <b>Julia Carrier</b>	<b>Mindy Caliguire</b> (25–27) “Confronting Burnout: Tending the Soul Beneath the Strain”  This 90-minute workshop invites the scientific community into a reflective, research-informed, and spiritually grounded exploration of burnout, not merely as a professional hazard, but as a soul-level crisis.  Come prepared not just to manage stress, but to care for the very soul that sustains your life and calling.	
3:45 PM	<b>Seth Hart</b> (26) “The Symbolic Cosmos: Reclaiming the Historical Christian Vision of the World”	<b>Keith Furman*</b> (26) “Does LDL-C as Double Agent Solve the Riddles (LDL Paradoxes)?”			
4:15 PM	<b>Alan Tai</b> (27) “A Physicist’s Perspective on God: Roadmaps to Wisdom Through Science and Life”	<b>Walter N. Harrington</b> (27) “Inescapable Teleology: The Language of Biology and Humanity’s Search for Meaning”			
5:00 PM–6:00 PM	Dinner				Dining Commons
5:00 PM–7:15 PM	Dinner Meet-Up: <b>Canadian Scientific and Christian Affiliation (CSCA) and CSCA Annual General Meeting</b>				Great Hall
5:30 PM	Sand Volleyball and Softball Organized by <b>Dominic Halsmer*</b> and <b>Vicki Best</b>				Outside Anschutz

PLEASE NOTE: Number within the parentheses is the page number for the abstract.  
\*ASA Fellow

**SUNDAY–MONDAY, 21 JULY 2025**

7:30 PM	State of the ASA Presenters: <b>Janel Curry*</b> , <b>Vicki Best</b> , and <b>Mike Beidler*</b> Offering supports the <b>Student Scholarship Fund</b>	Armstrong Center, McDonald Performance Hall
9:00 PM	Ice Cream Social   InterVarsity Reception	Anschutz Student Center, South Patio

We are grateful for our partnership with InterVarsity’s Emerging Scholars Network (part of Graduate & Faculty Ministries) for co-sponsoring the ice cream social.



**MONDAY, 21 JULY 2025**

6:00 AM	Morning walk to and from Adenbrooke Park, led by Lara Whelan; all are welcome		Meet in front of Anschutz Student Center	
7:00 AM–8:30 AM	Breakfast Breakfast Meet-Up: <b>Engineers</b> —All engineers are invited		Anschutz Student Center, Dining Commons Great Hall	
8:15 AM	<b>Devotions</b> Worship Leader: <b>Ciara Reyes-Ton</b> , Mount Carmell Worship Collective Devotional: <b>Jennifer Wiseman*</b> , “A New Narrative of Hope”		Armstrong Center, McDonald Performance Hall	
8:45 AM–9:45 AM	<b>Plenary V</b> <b>Jeff Hardin</b> , “Fearfully and Wonderfully (Self)Made: Christian Faith and the Wonder of the Embryo” Moderator: <b>Mike Beidler*</b>		Armstrong Center, McDonald Performance Hall (11)	
9:45 AM–11:45 AM	Exhibit Tables Armstrong Center 120			
9:45 AM	Beverage Break Armstrong Center, McTavish Atrium			
10:15 AM–11:45 AM	<b>VI.A. Physical and Environmental Sciences 4</b> –Performance Hall Moderator: <b>Stephen Moshier*</b>	<b>VI.B. Theology and Humanities 4</b> –Leprino 102 Moderator: <b>Jim Green</b>	<b>VI.C. Integration of Faith in STEM Education 3</b> –Leprino 104 Moderator: <b>Ray Lewis*</b>	<b>VI.D. Christian Women in Science (CWIS)</b> –Leprino 202 Moderator: <b>Veronica Frans</b>
10:15 AM	<b>David Heidlauf</b> (28) “The Poison Water Site: A Case Study Reflection of this Country’s Worst Carbon Tetrachloride Groundwater Contamination Site from a Human, National Contingency Plan, and Biblical Perspective”	<b>Fred S. Cannon*</b> (28) “Genesis 1: Adam-Humanity / Genesis 2: The Individuals Adam and Eve”	<b>Deborah Haarsma*</b> (28) “The Future of Faith and Science”	<b>Panel</b> (28–30) Dynamics of Women in the Workplace Panelists: • <b>Abby Worland</b> • <b>Sarah Gall</b> • <b>Rita Wang</b>
10:45 AM	<b>B. Moses Abraham</b> (29) “Machine Learning-Guided Discovery of Catalysts for Efficient Hydrogen Generation”	<b>Ray’Chel Wilson</b> (29) “From Scripture to Strategy: Bridging Theology and Stewardship Science for Organizational Growth”	<b>Joseph Vybihal</b> (29) “Will Nature Survive Compute?”	
11:15 AM	<b>Dominic Halsmer*</b> (30) “Cosmic Affordance Structure Confirms Purpose of an Evolving Creation”	<b>William Horst</b> (30) “Does Second Peter Problematize Local Interpretations of the Biblical Flood?”		
12:00 PM–1:00 PM	Lunch Dining Commons			
1:00 PM–4:00 PM	Afternoon in Golden: Where the West Lives		Meet in Yetter Hall parking lot	
2:00 PM	Registration table closes		Armstrong Center, McTavish Atrium	
4:00 PM	CWIS Dinner Offsite			

PLEASE NOTE: Number within the parentheses is the page number for the abstract.  
\*ASA Fellow

PLENARY I ARMSTRONG CENTER, McDONALD PERFORMANCE HALL  
FRIDAY, 18 JULY 2025 7:30 PM

## When the Green Movement Meets Jesus: A Christ-Like Model of Environmental Leadership

Robert Ddamulira

The world today is facing an unprecedented convergence of environmental crises—from climate change, biodiversity loss, and widespread pollution. These challenges threaten the foundations for sustainability of both human and natural systems. Despite scientific warnings and proven solutions, our individual and collective responses to these issues remain grossly inadequate. Based on a book by the same title, this plenary discussion wrestles with some key questions: what if all environmental leaders applied a Christ-like model to environmental leadership at all levels, from the home, community, nationally and globally? What are the core elements of a Christ-like model to environmental leadership? How can one start to apply such a model?

Drawing from a deep fusion of the speaker’s Christian journey and professional environmental leadership experience, this session reimagines environmental leadership through the ten core elements of Jesus’s leadership style. We will go on a journey across each of these ten transformative leadership principles—from the power of visionary purpose, passion, sustainable financing to self-sacrificial service and transcendence. Jesus embodied each of these principles. Today’s conservation leaders can apply the same principles as a strategic roadmap for mobilizing people, communities, and institutions toward a more just, equitable, sustainable and most of all a more loving world for people and nature.

This plenary will challenge environmental leaders to go from business-as-usual into mission-driven and values-based Christ-like leadership. By aligning our environmental conservation mission with the moral clarity of Christ-like leadership, a new generation of leaders can emerge with a renewed conviction of love for humanity and nature.



*Robert Ddamulira (PhD, University of Delaware) is an accomplished systems thinker and global energy policy expert with over 20 years of experience in climate change, energy, and sustainable development. He is currently a board member of Au Sable Environmental Institute and trustee of The Nature Conservancy Pennsylvania and Delaware Chapter. Robert also serves as an*

*Environment program officer at the C.S. Mott Foundation. Previously, he has held significant positions including researcher at the University of Delaware, Africa Energy Coordinator at the World Wide Fund for Nature, and environmental officer at Tullow Oil.*

*Robert is a prolific researcher with over 100 publications and has received numerous awards including the DENIN Fellowship Award (2019–2020) and the Rotary International Vocational Award (2017).*

*Robert is a lay member of the Dominicans’ Order of Preachers (OP) within the Catholic Church. He enjoys reading, writing, and spending time with his family in Flint, Michigan, which includes his wife Lydia, daughter Blessing (8 years old), and son Miracle (2 years old). On regular mornings, weather permitting, he jogs for 20–30 minutes on nearby forest or river trails.*

The views and opinions expressed by Robert are his own and do not represent those of any of his current, previous, or future affiliations.

PLENARY II ARMSTRONG CENTER, McDONALD PERFORMANCE HALL  
SATURDAY, 19 JULY 2025 8:45 AM

## Narrative Intelligence: The Agency and Authorial Leverage of Storytelling Amidst Advancements in AI

Sherol Chen

This keynote offers an integrated perspective on science, storytelling, and human behavior, with the overarching goal of aligning our passions with our purpose. Amidst the increasing desire for better AI, scientists must regularly answer to what it means for intelligence to be better and to what benefit we improve our inventions.

George Washington Carver, agricultural professor and inventor of the early 1900s, described our aspirations ultimately as our soul’s search for Truth. Our sense of advancement (toward truth), however, is weighted by the stories we can fit around our belief systems. In that sense, intelligence is crafted in our image, designed to serve the purposes that align with those narratives. If we suppose the greatest commandment is to love with our whole heart, soul, mind, and strength, and we are not to delegate this to the tools we invent, then what agency do we have, as scientists, to tell the best stories that uncover and liberate Truth?

The main takeaways of this talk are (1) a brief history of Narratology and AI, (2) Behavioral Machine Learning and how well large language models can predict human sentiment, and (3) the amount of agency we have in our callings and what stories we want to author in light of that.



*Sherol Chen has worked in artificial intelligence (AI) for over a decade. Currently, she is part of Google Research, working toward the expressivity of machine learning models. At Google, Sherol has advised on Machine Learning for Cloud enterprises as a subject matter expert, worked in research at Google Brain for Machine Learning in Music and Creativity for project Magenta, and built algorithmic search results for YouTube. She has taught AI for Stanford University Pre-*

*Collegiate around the world in Kazakhstan, China, India, Chile, and Peru. Her PhD work is in computer science, researching storytelling and AI at the Expressive Intelligence Studio.*

*Sherol is also a founding member of the Google InterBelief Network and served as an inaugural steering committee member for Christians. Today, Sherol serves on the board of directors for the Monterey Jazz Festival as well as on various advisory boards. All Sherol’s views and opinions are her own and do not represent her affiliations.*

**The Power of Partnerships to Bring About a Transformed World That Honors God Amid Mega-trends Affecting Our World, the Church, and the Creation**

**Abram Bicksler**

In this session, Abram J. Bicksler, the president and CEO of ECHO, will discuss ECHO's global work and its unique network of thousands of agricultural workers and organizations to reduce hunger and improve lives in over 190 countries. ECHO accomplishes this by co-creating and synergizing science, indigenous local agricultural knowledge, and faith.

With that backdrop, learn about some of the mega-trends affecting the world now and in the future and how God is at work through his people in the world. You will gain practical insights into biblical holism, the state of the global church, and how agriculture development and creation care impact lives globally by synergizing faith and science.

*Abram J. Bicksler earned his PhD and MS from the University of Illinois Urbana-Champaign in natural resources and environmental sciences, focusing on sustainable cropping systems. He completed his BS at Taylor University in environmental science and biology. As a global leader, networker, and researcher in sustainable food and agricultural systems, Abram has been published in a myriad of peer-reviewed journals and various Food and Agriculture Organization of the United Nations (FAO) and extension publications. He enjoys combining the practice of agriculture at the farmer-innovator level with the rigors of the scientific method, enabling co-creation and sharing of knowledge and partnering with the beautiful diversity of the global church to bring about a transformed world that honors God.*



*While at FAO as an agricultural officer, Abram guided and advised on agroecology and sustainable food systems initiatives in multiple world regions through technical and policy means. Before serving in Rome, Abram led the ECHO Asia Impact Center's international staff team, coordinated and implemented regional networking and training events, initiated research culminating in multiple published studies, planned and began execution of the ECHO Asia Small Farm Resource Center, and grew the capacity of the ECHO Asia Seed Bank.*

*As a visionary president/CEO of ECHO, Abram has led the ECHO team in re-imagining ECHO as a global organization with six regional impact centers (RICS) serving a diverse and growing network worldwide by regionalizing resources and approaches through the global church. Building and serving ECHO's diverse network with excellence is at the core of ECHO, and Abram has woven this throughout the year-long participatory strategic framework development process to lead and guide ECHO into the next five years of its history while fundraising to operationalize new RICS and initiatives in areas of greatest need and potential around the world.*

**Respondent**

**Brian Gray**

*Brian Gray is the VP of Formation at Denver Institute for Faith & Work, where he focuses on spiritual direction, missional integration, and leadership development for Christians working across industries in the public marketplace. His earliest work years were in applied cardiovascular physiology at the University of Texas before a big change to occupational church ministry—though both were sacred professional fields!*



*Brian served in pastoral ministry for thirteen years, on faculty at Denver Seminary for five years, and at Denver Institute for the past ten years. His vocation includes turning good ideas into more meaningful lives through facilitating relationships, reflection, and redemptive action—whether that applies to God, people's work, the church, Liverpool Football Club, or good literature.*

PLENARY IV ARMSTRONG CENTER, McDONALD PERFORMANCE HALL  
SUNDAY, 20 JULY 2025 11:00 AM

## Science as Worship in the Laboratory and in the Church

Ruth Bancewicz

Most research scientists experience beauty, wonder, and awe from time to time in the course of their work. Christians in the sciences can take that experience further. Everything we learn using the tools of science reveals more about how creation worships God and witnesses to his glory. Our own worship—our prayers, praise, and indeed every aspect of our daily lives—can be magnified and enhanced by the discoveries of science. We are in the perfect position to help the Church learn how to use science to enhance our worship practices.

Ruth will explore a theological understanding of creation's praise, the intrinsic value of science for worshipping God by enjoying his creation, and the utilitarian value of science for increasing the Church's worship.

Although we cannot predict much about the new heavens and earth, these forms of worship may well be accessible to us, so we should help the Church start practicing now!

*Ruth Bancewicz is Church Engagement Director at the Faraday Institute, where her remit is to equip and encourage UK churches to include engagement with science as part of their regular ministry and mission. She studied genetics at Aberdeen and Edinburgh Universities, and (more recently) theology, ministry, and mission at Ridley Hall.*



*After graduating, she was development officer for Christians in Science, at the same time as doing postdoctoral research at Edinburgh University. Ruth joined the Faraday Institute, when it was founded in 2006, to develop resources for churches. She was appointed its*

*church engagement director in 2018, remains a member of Christians in Science, and is an elected fellow of the ASA.*

*Her current theology studies are with Highland Theological College. She is a senior research associate at St Edmund's College, Cambridge, and a member of City Church Cambridge.*

PLENARY V ARMSTRONG CENTER, McDONALD PERFORMANCE HALL  
MONDAY, 21 JULY 2025 8:45 AM

## Fearfully and Wonderfully (Self)Made: Christian Faith and the Wonder of the Embryo

Jeff Hardin

The transformation of each of us from a fertilized egg to an organism with trillions of cells arranged in incredibly complicated ways is a wonder of biology. Each person is truly a "self-made" individual, as the future-directed program of development unfolds from humble beginnings.

Biologists are beginning to unlock the secrets of the embryo in increasing detail. The intricacies of this cellular world provide opportunities to experience profound beauty, wonder, and worship, and touchpoints with our students and colleagues.

The science of the embryo also raises larger questions for us as Christians: How should we situate the modern science of embryos—and ourselves—within the sweep of the biblical story? And how should our wonder and worship condition how we think about emerging technologies enabled by the remarkable ability of its cells to self-organize?

*ASA member Jeff Hardin is the Raymond E. Keller and Wayland Noland Distinguished Professor of Integrative Biology at the University of Wisconsin-Madison (UW). Jeff received his BS in Zoology and BA in German from Michigan State University, followed by a Master of Divinity degree at the International School of Theology. Jeff then pursued a PhD in Biophysics under Ray Keller at the University of California-Berkeley. After postdoctoral work at Duke University, Jeff joined the Zoology Department (now the Department of Integrative Biology) at UW in 1991.*



*Jeff's research focuses on the basic cellular mechanisms that transform the shape of animal embryos during embryonic development. Jeff is also an award-winning biology educator and lead author of the widely used text, World of the Cell (Pearson).*

*He has extensive interests in the intersection of science and religion. Jeff is an affiliate in the Religious Studies program at UW; with historian Ron Numbers he co-founded the Isthmus Society to promote dialogue between the sciences and religion, and he co-edited The Warfare between Science and Religion: The Idea That Wouldn't Die (Johns Hopkins University Press).*

*Nationally, Jeff served for many years as the Board Chair of the BioLogos Foundation, and as an advisor to the Dialogue on Ethics, Science, and Religion at the American Association for the Advancement of Science.*

**Worship Preacher**

**Hugh Ross**



*Astrophysicist Hugh Ross is founder, senior scholar, and former president of Reasons to Believe (RTB), an organization dedicated to demonstrating the compatibility of science and the Christian faith.*

*At age 16, Hugh became the director of observations for Vancouver’s Royal Astronomical Society. He completed his BSc in physics at the University of British Columbia and his MSc and PhD in astronomy at the University of*

*Toronto. He continued his astrophysical research as a postdoctoral fellow at the California Institute of Technology. His writings include journal and magazine articles, blogs, and numerous books—Rescuing Inerrancy, Designed to the Core, and Weathering Climate Change, among others. He has spoken on hundreds of university campuses as well as at conferences, scientific meetings, and churches around the world. Ross remains on the pastoral team at Christ Church Sierra Madre.*

**Worship Leader**

**Ciara Reyes-Ton**



*Ciara Reyes-Ton is a scientist, writer, editor, educator, and singer-songwriter. She has worked extensively in science communication, as a writer and editor serving organizations such as BioLogos, the American Scientific Affiliation, and Peaceful Science.*

*Ciara is the founder of the Mount Carmell Worship Collective—a collaborative of creatives, artists, scholars, and scientists exploring the intersection of faith, science, and the arts. She also serves as president of the Science Communicators of Faith, an affiliate group through the ASA, and teaches at Lipscomb University.*

*She has a PhD in cell and molecular biology from the University of Michigan.*

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**I.A. INTEGRATION OF FAITH IN STEM EDUCATION 1**

Performance Hall

**Bookending Cornerstone and Capstone Courses for Inspiring a Holistic Synthesis of Faith and the Biological Sciences****Erik Lindquist and John Harms**

The integration of faith and science has been central to science curricula since the inception of undergraduate Christian higher education. In many disciplines, a key component of students' holistic development is the senior capstone course, the culminating experience of their educational program. Ideally, this course differs from antecedents by focusing on higher-order critical thinking, knowledge synthesis, self-discovery, and vocational discernment. Unique to Christian higher education, science capstone courses explore life's big questions and controversies at the nexus of modern science, theology, philosophy, and ethics.

In the typical curricular paradigm, the first years focus on foundational knowledge and skills, while the second half trains for career specialization. As such, students often engage the integrative themes of capstone courses very late in their education, limiting their personal, spiritual, and vocational growth.

Herein, we present an approach adopted by the Department of Biological Sciences at Messiah University that employs a cornerstone course to introduce and engage first-year students in the faith-science dialog, scientific reasoning and communication, and vocational exploration. This practice exposes students to the potential of a harmonized view of faith and science early in their educational journey, serving as a foundation for personal reflection during their intervening years.

We will explore how cornerstone and capstone courses work together to guide students to articulating a cohesive synthesis of faith, science, and vocation.

**I.B. LIFE AND HEALTH SCIENCES 1**

Leprino 102

**On the Logic of Using Examples from Nature as a Guide for Human Sexuality****Gregg Davidson**

Observations from nature employed to challenge a traditional model of binary human sex, fixed at conception, typically draw on the diversity of sex expression and plasticity in the animal kingdom, variable fetal developmental pathways in humans that result in inter-sex conditions, or purported minor sexual dimorphism in humans.

I present an argument that logical fallacies are often unconsciously employed when projecting observations of biological phenomena, writ large, to what should be affirmed, or what is possible, for humans. Types of fallacies that come into play include false dichotomy, false equivalence, category mistake, is-ought fallacy, and conceptual-shift fallacy.

Additional attention is brought to how examples from nature employed to support a favored human behavior or policy may equally apply to a litany of unfavored behaviors or policies.

**I.C. PHYSICAL AND ENVIRONMENTAL SCIENCES 1**

Leprino 104

**Cosmology for Christians****Steven Ball**

There is a positive way Christians can deal with the beautiful new images coming from the James Webb Space Telescope and other astronomical instruments. Rather than fearing the vast ages that such images suggest, we can enjoy the awe and wonder of creation and focus on the many aspects of cosmology that agree nicely with biblical creation.

Beginning with the evidence for an expanding cosmos in the 1920s, cosmology has become more and more a science, tested and refined by observational data. Telescopes began to reveal an extensive cosmos, vastly larger than our own solar system or Milky Way Galaxy, in fact, a visible universe filled with more galaxies than the stars in the Milky Way.

The Big Bang model of cosmology competed for prominence with other cosmological ideas until the discovery of the Cosmic Microwave Background Radiation settled the matter. Subsequently, space-based telescopes have led to the radical transformation of cosmology from a rather speculative discipline with sparse data to a high precision science, in which competing models are stringently tested by observations.

Recent advances include the discovery of dark matter and dark energy, the latter associated with an observed accelerating expansion of the universe. The visualization of galaxies in the early universe has had a dramatic effect on public interest and consideration of our place in the cosmos. We find that modern Big Bang cosmology actually affirms many biblical teachings on creation.

**I.D. STUDENT/EARLY CAREER TRACK**

Leprino 202

**Faith & Work for Science: Flourishing in Challenging Times****Dwight Schwartz and Hannah Eagleson, Moderators**

What does it mean to follow Christ and flourish in a science career, especially in a challenging time? Come engage that question in community.

We'll begin with a panel of experts including scientists and science-aware theologians. Then we will break into interactive small groups so you can meet others in your field or related ones and grow in your own faith and work connections.

After small groups, we'll head over to the Student/Early Career Lunch Meetup for more conversation and some table meetups on topics such as funding and flourishing.

*Cosponsored by InterVarsity's Emerging Scholars Network*

**I.A. INTEGRATION OF FAITH IN STEM EDUCATION 1** (CONT'D)

Performance Hall

**For His Glory: Designing Curriculum That Encourages Worship**  
Karri Iverson

*"The more I study nature, the more I stand amazed at the work of the Creator."* —Louis Pasteur

Combining STEM and inspiring an awe of the creator is an integral piece of training our next generation. Fundamental to this process is designing a curriculum that integrates faith as a foundation. The question becomes: how can we build a culture of curiosity and exploration while effectively incorporating a worldview of intelligent design? How can we use those beliefs to inspire students to ask meaningful questions about life's purpose and God's greater plan?

A well-crafted curriculum does more than inform; it encourages learners develop a sense of curiosity and wonder about the world around them, then stimulates a deeper desire for understanding how things work—from the gears in the legs of a planthopper insect to the specific ways an archer fish attacks its prey.

This presentation discusses specific ways to integrate faith into curriculum design, from the foundation of a worldview, to asking questions, to authentic learning through experience (and experiments).

Our goal is to structure a program that helps students develop amazement and awe at the work and character of the magnificent Creator—his design, his sovereignty, and his intricate care. This leads to authentic worship of God and his character, greatly impacting and influencing the field of science.

**I.B. LIFE AND HEALTH SCIENCES 1** (CONT'D)

Leprino 102

**The Connection Between Zoonosis and Creation Care**  
Oscar Gonzalez and Dario di Luca

Wild animals live with symbionts in their bodies, which can cause diseases. Parasites and pathogens have an essential effect on all ecosystems; the field of disease ecology tells us that ecological interactions in any ecosystem would be incomplete without them.

When these animals contact domesticated animals and humans, these symbionts may get to us as zoonotic diseases. In the case of viruses, new emergent diseases might arise, and severe epidemics come.

As Christians, we should adequately steward the environment (Creation care). That includes the management of wildlife and the prevention of zoonotic diseases.

We will comment on the field of disease ecology, explaining how pathogens and parasites modify some ecosystems. We will also explain how the mismanagement of nature usually causes zoonotic diseases such as Nipah virus, monkeypox, Rift Valley fever, and Machupo Virus. Finally, we will argue that fewer zoonotic diseases would appear if Christians adopted the principles of nature conservation and the philosophy of creation care.

**I.C. PHYSICAL AND ENVIRONMENTAL SCIENCES 1** (CONT'D)

Leprino 104

**Creation Care and the Church: More Than Just Climate Change**  
David A. Larrabee

We firmly believe that the Christian Church should be the "salt of the Earth," calling for creation care. The consequences of environmental degradation are usually borne most heavily by the marginalized in society. The Church is commanded to care for the "least of these." Part of that care is to meet their immediate needs. In addition, we have the responsibility to stop our actions that are resulting in their harm. This requires understanding how we are contributing to the problems, how we can mitigate the damage, and how we can adapt to the new realities.

The Creation Care Affiliation of ASA is creating a guide for local churches to understand and address today's environmental burdens. To that end a video has been created that explains the global safe operating space for our planet. There are 9 boundaries, 8 of which have measureable control variables, inside of which is the "safe operating space" of our planet. Currently 6 of these boundaries are exceeded. No single activity will bring all 6 exceedances back to safety. These boundaries and their interconnections allow us to better understand issues like erosion, drought, fire, flooding, heat emergencies, air quality, etc.

The concept of an environmental footprint will be explained. It has been popularized by the Global footprint network with their publication of the Earth overshoot day.

These resources, and an associated study and discussion guide, will be part of the guide for local churches. Next, George McKibbin will address its use by the local church.

**I.D. STUDENT/EARLY CAREER TRACK** (CONT'D)

Leprino 202

**Faith & Work for Science: Flourishing in Challenging Times**  
Dwight Schwartz and Hannah Eagleson, Moderators

What does it mean to follow Christ and flourish in a science career, especially in a challenging time? Come engage that question in community.

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*Cosponsored by InterVarsity's Emerging Scholars Network*

**I.A. INTEGRATION OF FAITH IN STEM EDUCATION 1** (CONT'D)

Performance Hall

**Teaching Science Majors about Christianity and Science**

Edward B. ("Ted") Davis

Many Christian colleges and universities require natural science majors to take a course about the integration of Christian faith with their specific discipline, or with the sciences in general. Other institutions may be considering adding such a requirement.

This presentation summarizes the insights and advice of a historian of Christianity and science who taught senior science majors about that topic for almost thirty years.

The presenter will lead a full-length workshop about designing and teaching such courses at the 2026 annual meeting. This session is a preview of the workshop, but all interested persons are encouraged to attend.

**I.B. LIFE AND HEALTH SCIENCES 1** (CONT'D)

Leprino 102

**Benefits of Fasting for the Whole Person: Spirit, Soul and Body**

James Painter

Fasting was so common in the first century that Jesus didn't need to command his followers to fast; he assumed they would. In Matthew 6:16, he simply says to his followers, "... whenever you fast ..." Fasting was practiced in the early church and remains important in several Christian traditions.

It is essential for our spirit, soul, and body. Fasting doesn't change God's mind to be more favorable to our requests. It changes us to be more attentive to God. Fasting helps the spirit by subduing carnal desires and can contribute to taking care of the temple of God (1 Corin. 6:19). For the skeptic who thinks that science has made Christianity irrelevant, the scientific support for fasting may give them pause to reconsider the Christian faith.

Fasting improves cognition so it benefits the soul. Fasting increases brain-derived neurotrophic factor (BDNF) which is responsible for the growth of new brain cells and produces ketone bodies used by the brain for energy. Fasting is important in promoting healthy gut function and reduces blood glucose. Considering the epidemic of type 2 diabetes, the reduction of blood sugar levels that is seen with fasting is of particular interest for physical health. Although there are many types of fasting, intermittent, periodic, time-restricted, and Daniel, they all appear to provide similar benefits.

**I.C. PHYSICAL AND ENVIRONMENTAL SCIENCES 1** (CONT'D)

Leprino 104

**A Church Guide to Addressing Planetary Boundaries**

George McKibbin

This discussion sets out the second of two presentations on the Creation Care Affiliation's church guidance. David Larrabee sets the stage. I use David's summary and develop local guidance.

Imagine the church as the salt of the earth within an encompassing prism. Light is reflected outwards through the multiple surfaces. Each side represents a boundary and the responses that governments, industry, business, and public and private institutions take to address planetary boundaries.

Then imagine the church as a source of light embedded within this encompassing prism of boundaries and humanity's responses. Multiple sources of light emanate from the poor in spirit, those who mourn, the meek, those who hunger and thirst for righteousness, the merciful, the pure in heart, peacemakers, and those reviled and persecuted. Each prism side reflects light that reverberates between the sides.

What actions characterize a church that is a source of light within this prism?

Using four actions designers use to address coastal adaptation to characterize a church's response, I develop a series of tables addressing resistance, avoidance, accommodation, and communication. These tables provide guidance that local church leaders can apply to develop responses.

The first table addresses local site and context circumstances churches need to consider. A second series of four table uses each of the responses to assess potential actions churches may take. These tables encompass the interactions between the prism's edges.

We conclude with opportunities for those in attendance to describe their church experiences responding to boundary challenges.

**I.D. STUDENT/EARLY CAREER TRACK** (CONT'D)

Leprino 202

**Faith & Work for Science: Flourishing in Challenging Times**

Dwight Schwartz and Hannah Eagleson, Moderators

What does it mean to follow Christ and flourish in a science career, especially in a challenging time? Come engage that question in community.

We'll begin with a panel of experts including scientists and science-aware theologians. Then we will break into interactive small groups so you can meet others in your field or related ones and grow in your own faith and work connections.

After small groups, we'll head over to the Student/Early Career Lunch Meetup for more conversation and some table meetups on topics such as funding and flourishing.

*Cosponsored by InterVarsity's Emerging Scholars Network*

**II.A. ENGINEERING,  
TECHNOLOGY, AND  
COMPUTER SCIENCE 1**

Performance Hall

**Christian Perspectives on  
Technological Asceticism**

Philip P. Graybill

The proliferation of technology is a double-edged sword, bringing both undeniable benefits and undeniable costs. In light of mounting research underscoring the degrading effects of technology on mental health, many have begun calling for limits on digital technologies and social media, especially for youth. But well before this current wave of concern began, various Christian thinkers and groups were calling for disciplined restraint in the use of technology at the personal and communal levels for a variety of reasons that extend into a spiritual dimension that is often neglected in the broader conversation.

In this talk I will propose that, as Christians, we could benefit from approaching technological self-restraint as more than a “healthy habit” and instead as a form of asceticism in line with other forms of asceticism in the Judeo-Christian tradition. I will describe several Christian perspectives that advocate for technological restraint and the variety of spiritual motivations that inspire them.

I conclude with one artist’s hopeful observation that ascetical struggle might lead to not only personal transfiguration but also transfiguration of our technology.

**I.C. THEOLOGY AND  
HUMANITIES 1**

Leprino 102

**“Last stop, Chaos!':  
Consistency as  
an Epistemic Value in  
Christian Reconstructionist  
Science Skepticism”**

Mallory A. Hrehor

Many view epistemic values as a crucial aspect of scientific inquiry. These kinds of values (e.g., consistency and empirical adequacy) are often seen to be the hallmarks of good theories, aiding in the demarcation of “good” and “bad” theories. My aim is to examine the use of these epistemic values in groups which are often classified as “science denialist.”

My case study is a group of Christian reconstructionists based in the Pacific Northwest in the U.S. from the late 1970s to the present. This group often is classified as a science denialist group due to its rejection of evolution and climate change, its belief that the earth is less than 6,000 years old, and its anti-mask and anti-vax position during the 2020 pandemic.

This group has started its own, quickly expanding, education movement, with over 532 affiliated K-12 schools. By examining the vast output of literature from this group on their beliefs around science, as well as the science curriculum they have published through their own publishing house, it can be shown that this group also highly prioritizes epistemic virtues, like consistency and empirical adequacy.

In fact, I will argue that, based on the literature from this group, their extreme emphasis on these epistemic virtues contributes to their science denialism, which opens up avenues for questioning whether epistemic virtues, like consistency and empirical adequacy, should be seen as universally beneficial in scientific theories. This also opens new avenues for questioning how theologians and scientists of faith should view epistemic values, like consistency, and the overall epistemic relationship between religion and science.

**II.C. PSYCHOLOGY,  
NEUROLOGY, AND  
BEHAVIORAL SCIENCES 1**

Leprino 104

**Apparitional Experiences:  
The Science and Theology**

E. Janet Warren

Reports of encounters with spirit beings are surprisingly common, yet little discussed in either science or theology. Although not easy to classify as either scientific or worshipful, these definitely illustrate the complexity of creation. Without some understanding of apparitional experiences, Christians may respond inappropriately with fear, quick dismissal, or adoption of facile explanations.

In this presentation, I first examine the phenomenology and classification of apparitional experiences within the psychological and spiritual care literature, then consider biblical and theological perspectives that can inform our understanding. Finally, I consider possible interpretations of such phenomena; materialistic/subjective, nonmaterialistic/objective and some unified theories.

I conclude that, given a biblical worldview that affirms a spirit world and an afterlife, we need to consider the “reality” of apparitions. However, healthy skepticism, a multifactorial approach and further research is advisable.

**II.D. PHYSICAL AND  
ENVIRONMENTAL  
SCIENCES 2**

Leprino 202

**Revisiting the Mond Process:  
The Greenest and Most  
Creation-Care Sensitive  
Approach to Battery-Grade  
Nickel and Iron?**

Vladimir Paserin

The Mond Process involves, in the words of Lord Kelvin, “giving wings to nickel.” The process has been used for decades by a handful of companies around the world to produce more than 100,000 tons annually of high-purity nickel and iron.

This presentation will outline the merits and drawbacks of carbonyl processing of both sulfide and laterite nickel ores in terms of energy input and environmental footprint, plus the potential for producing new grades of battery precursors made by this unique, low temperature vapor-phase method of nickel, iron, and cobalt deposition and particle formation.

The presentation will explore theological motivation for revisiting this old process in the context of the society electrification era.

**II.A. ENGINEERING,  
TECHNOLOGY, AND  
COMPUTER SCIENCE 1**  
(CONT'D)

Performance Hall

**Proleptic Guardrails for  
Humanity and AI: Generative  
AI in an Age of Uncertainty**

Daren Erisman

We live in a time of profound uncertainty about our future. How will new AI advances affect job opportunities, the education of our kids, culture wars, and humanity in general? The rapid growth of generative AI has inspired both hope and concern. This presentation brings together two major thinkers—Wolfhart Pannenberg and Luciano Floridi—to explore how their approaches to uncertainty may provide proleptic guardrails for humanity and AI.

Pannenberg's proleptic eschatology offers a theological response to uncertainty, framing history as open-ended but guided by the embodied promise of God's future. Pannenberg understands the resurrection of Jesus Christ as a proleptic event—an anticipation of ultimate fulfillment that provides ethical and spiritual direction for navigating the present.

In contrast, Floridi's Information Ethics engages with the uncertainties of AI by emphasizing the need for proactive ethical frameworks that safeguard the integrity of what he calls the infosphere—the environment of all informational entities and their interactions, crucial to human life and technology. While Floridi rejects AI as a moral agent, he highlights its capacity to act in ways that shape the world, necessitating clear ethical boundaries to minimize harm and disorder.

This presentation articulates guardrails—ethical boundaries grounded in both divine fulfillment and responsible technological design. By placing Pannenberg's and Floridi's perspectives in dialogue, it offers a framework for navigating our uncertain moment while affirming the embodied promise that guides human responsibility, anticipation, and stewardship in engaging with AI.

**II.B. THEOLOGY AND  
HUMANITIES 1**  
(CONT'D)

Leprino 102

**The Philosophical and  
Theological Foundations of  
Modern Empirical Science**

Gary W. Burdick

As observed by C. S. Lewis, "Men became scientific because they expected Law in Nature, and they expected Law in Nature because they believed in a Lawgiver."

This belief is foundational to the basic assumptions of modern empirical science: the universe exists, is orderly and follows mathematical laws, and may be understood by humans.

Through the examination of the faith of three founders of modern physics, Johannes Kepler, Isaac Newton, and James Clerk Maxwell, we can see how belief in a Creator influenced their science. This provides a theological warrant for the efficacy of science to provide genuine knowledge regarding the nature of reality and can provide needed perspective when legitimate conflicts between science and theology arise.

**II.C. PSYCHOLOGY,  
NEUROLOGY, AND  
BEHAVIORAL SCIENCES 1**  
(CONT'D)

Leprino 104

**Cultural Competency  
Toward Understanding  
Gender Identity Using Case  
Study and Christian Ethics as  
Faithful Worship**

Dana Oleskiewicz

Gender identity is falsely conflated with biological sex within a gender critical framework designed to maintain a dominant social convention related to human reproduction. Gender critical arguments give supremacy to body parts (i.e., genitalia) as objective truth in defining all humans under a binary schema.

Discovery in the humanities, science, and social theory does not support the gender critical position. Humanity is more innately complex and neurodiverse, illustrated by the very existence throughout history of intersex, gender nonbinary, and transgender people. Social norms and institutional structures built by the cisgender majority perpetuate the male/female—dichotomous and immutable—system.

New language and gender-affirming views have emerged over many decades in response to acquired knowledge about a minority group as our neighbors. A gender-affirming position gives subjective authority to the neurodivergent person experiencing a disconnect between body and brain (psyche).

Acknowledging such diversity in gender identity is patient-centered, ethically offered as disability accommodation. Efforts to integrate gender diverse people into society as equally deserving of human dignity have been confronted with severe resistance, claims of sinful ideology, victim shaming, and even institutional violence. Political disinformation and misrepresentation as harmful stereotypes are all too common, intensified when the community itself is not believed or respected, and often excluded.

Christian worship is through loving everyone, especially outsiders to the socially accepted, neurotypical cisgender majority. In this presentation, case study on lived experiences will increase cultural competency as a Christian response grounded in facts about the true needs of this vulnerable population.

**II.D. PHYSICAL AND  
ENVIRONMENTAL  
SCIENCES 2**  
(CONT'D)

Leprino 202

**Understanding How the  
Mountains Were Formed  
Inspires Deeper Worship**

David B. Robbins

The American Cordillera is a system of mountain ranges and basins stretching across Alaska, the USA, Mexico, and S. America. I had the opportunity as a graduate student in 1974 to participate in a study of a small piece of this long "rope" near the eastern edge of the Omineca Crystalline Belt in SE British Columbia. In the process, I gained an appreciation of the work of geologists to better understand the geologic processes at work along continental-oceanic plate boundaries, which produce magnificent mountain landscapes.

Contorted structures in the rocks near Mica Creek proved to be formed by at least three phases of folding with the largest having amplitudes on the order of kilometers. Collected minerals revealed temperatures and pressures of formation of 570 to 640°C and 6 to 8.5 kbar (0.6 to 0.85 GPa) based on thermodynamic equations solved for the composition of various oxides.

The depth of burial for the ancient sediments deposited along a predecessor continent dating to a time before the earliest animals was possibly over 20 km based on classical lithostatic models. The roots of the recent mountains extend back to the opening of the Atlantic Ocean over 175 mya with dates "frozen" in the rocks showing five major periods of tectonism spanning 125 mya.

God moves our hearts to worship when we gaze upon his marvelous works. As our appreciation for his works grows, our worship is magnified.

**II.A. ENGINEERING,  
TECHNOLOGY, AND  
COMPUTER SCIENCE 1  
(CONT'D)**
**Performance Hall**
**Created and Called:  
Humans with AI on  
Sunday Mornings**
**Noel W. Anderson**

Humans are created in the image of God (*imago dei*) and are called to a unique relationship with God and a unique vocation in creation. Intelligence, whether animal, human, or machine, can generally be defined as “doing the right thing in the right way at the right place at the right time.”

Artificial intelligence (AI) continues to develop rapidly, most recently with Large Language Models (LLMs). AI and LLMs have reached a point where they can play roles in key Sunday morning church activities including teaching, preaching, worship, prayer, and fellowship.

In light of the *imago dei* and the human vocation, guidelines are defined for enhancing Sunday morning activities using AI while not delegating elements that are specifically for humans. These guidelines can have application outside the context of the church.

**II.B THEOLOGY AND  
HUMANITIES 1  
(CONT'D)**
**Leprino 102**
**A Theology of Creation Care  
Needs the Gift of Finitude**
**John R. Wood**

Death, decay, decomposition, and recycling are pervasive ecological phenomenon present in every living system. The mass death of megafauna such as Ice Age mammal assemblages in La Brea Tar Pits and dinosaur fossil assemblages are widely known to the public. Tree death in old growth forests and salmon dying after spawning also attract visitors to natural areas everywhere.

While the particulars of creaturely finitude are well known, the implications for a theology of creation care have seldom been explored. Interestingly, even in discussions of topics such as food and faith, or Christian ethical practice in altering the earth (from lawns and gardens to mega projects and geo-engineering on the scale of climate change), creaturely mortality is seldom on view.

Environmental theology, and its subset creation care, is a late 20th century development. Although environmental issues are widely acknowledged as problematic and consequential, the theological framing remains undertheorized, contested, and compared to other topics in systematic and applied theology and ethics, much less developed.

Although the finite nature of all creatures is clear, the traditional human-centered view of death appears to have delayed the incorporation of ecological insights into theological thinking on non-human death. This lapse has recently been noted by theologians and ecologists. Systematic theologian Katherine Sonderegger (*The Doctrine of Providence*, 2009), speaking of God's providence, bluntly says that she is “starting from the conviction that the cosmos and its creatures are ordered by mortality and death.”

The theology of creation care is likely better grounded in humility and finitude instead of starting with doctrines of sin and suffering.

**II.C. PSYCHOLOGY,  
NEUROLOGY, AND  
BEHAVIORAL SCIENCES 1  
(CONT'D)**
**Leprino 104**
**Behavioral Insights into  
Political Polarization in  
Christian Communities  
Through Computational  
Modeling**
**Eric Araújo and  
Fernando Pasquini Santos**

Over the past decade, societal political polarization has posed a new challenge for Christian communities, affecting families, friendships, and churches. While not a new phenomenon—divisions like those between Zealots and tax collectors or Pharisees and Sadducees date back thousands of years—its modern forms have sparked fresh concerns.

Advances in social psychology, neuroscience, and computational social sciences offer new tools to study polarization in Christian communities. However, the lack of data and the challenge of capturing temporal patterns of division tied to radicalization and identity attachment demand innovative approaches and methodologies.

Agent-based modeling offers a powerful tool in contexts where data collection is challenging. It enables researchers to derive insights and understanding from existing knowledge about human behavior and the spread of opinions and sentiments among connected groups, such as religious communities.

This project aims to develop a computational model to explore the consequences of political polarization within a Christian context. The model is built on the work of many researchers who have studied polarization across various domains and is informed by expected patterns of behavior related to the values and beliefs of churches in a Western context. This work is the culmination of years of research on social contagion and introduces a new exploration. It aspires not only to provide a model for discussion and critique but also to foster reflection and support the flourishing of Christian communities.

**II.D. PHYSICAL AND  
ENVIRONMENTAL  
SCIENCES 2  
(CONT'D)**
**Leprino 202**
**Christian Female  
STEM Students' Experiences  
Being in a Predominantly  
Male Environment**
**Sydney Crowder, student and  
Cory Hixson, professor**

Christian female STEM students and professionals face unique experiences and challenges. Through targeted, semi-structured interviews, our team examined how gender ratios influence women's experiences in STEM, the strategies women develop to navigate predominantly male settings, and the role of Christian faith in shaping women's experiences.

While studies of women in STEM are not new, there have been few studies of Christian women in STEM; therefore, these findings represent new and important preliminary insights that will enable (1) comparisons with the broader women-in-STEM research and (2) a starting place for future Christian women-in-STEM studies.

## III.A. LIFE AND HEALTH SCIENCES 2

Performance Hall

### Different Means to the Same End: Diversity of Isolating Mechanisms in the Origin of Species

Igor V. Sharakhov

Numerous examples of convergent evolution of traits and adaptations suggest that evolution is not an unpredictable process, but rather a highly constrained and directed process, characterized as “the inevitable march toward a cognitively complex animal.” What about the evolutionary mechanisms themselves? Are they also subject to convergent evolution?

Hybrid male sterility has been identified as the primary mechanism of reproductive isolation between species.

Charles Darwin, in the chapter on “Hybridism” in *The Origin of Species*, noted that hybrid sterility “is not a specially endowed quality, but is incidental on other acquired differences.” We investigated specific “acquired differences” between mosquito species that cause hybrid male sterility.

Our studies of hybrids in two mosquito genera, *Anopheles* and *Aedes*, revealed drastically different causes of male sterility. Abnormalities in sperm development, accompanied by misbehavior of sex chromosomes, are the major causes of sterility in *Anopheles* hybrids. By contrast, disruption of sex determination leads to intersexual characteristics of the male reproductive system, causing sterility in *Aedes* hybrids. Thus, hybrid male sterility can be caused by very different mechanisms that lead to the origin of new species.

The convergent evolution of hybrid incompatibility provides the robust isolation mechanism between species, resulting in the tremendous diversification of life that fulfills God’s command: “Let the earth bring forth living creatures according to their kinds” (Gen. 1:24).

## III.B. ENGINEERING, TECHNOLOGY, AND COMPUTER SCIENCE 2

Leprino 102

### Unveiling the Syntax of Sacred Texts with Machine Learning

Saulo de Oliveira Cantanhêde

Over the last few years, computational tools have helped produce morphological information for sacred texts, such as the Hebrew Bible; however, manual annotations for syntax are very labor-intensive. The new developments in machine-learning models are crucial to speeding up the process of producing syntactic annotations for those texts. That is the goal of the project Creating Annotated Corpora of Classical Hebrew Texts (CACCHT) while working with texts such as Syriac Peshitta and Dead Sea Scrolls.

As a part of the CACCHT project, I report on developing syntactic information for the Samaritan Pentateuch, which is the text of the first five books of the Hebrew Bible, written in the Samaritan script. I used a morphological parser to generate an annotated text for linguistic research, which is available in the GitHub repository for programmers and non-programmers and can be manipulated offline using a Jupyter Notebook.

This project demonstrated the potential of how machine learning can be used to enrich sacred text, and the features developed can complement linguistic research in humanities and textual comparison between different sacred texts beyond morphological analysis, helping to have a better understanding of the text transmission process and how cultural context has influenced translation practices.

## III.C. THEOLOGY AND HUMANITIES 2

Leprino 104

### How Science Catalyzed a Better Understanding of Genesis 1–3

Victoria Campbell

In 2000, Carol Hill published “The Garden of Eden: A Modern Landscape” in *PSCF* which explained that geological, geographical, and satellite data strongly suggest that the socio-historical backdrop of Genesis 1–11 was the Ancient Mesopotamian Tigris-Euphrates river valley. Furthermore, Genesis 5, 11, and Abram’s birth in 2166 BCE would place Adam’s era around 4000 BCE in ancient Sumer. When this information is combined with Old Testament scholar John Walton’s work, it suggests that some of the more obscure words found in Genesis 1–3 are Sumerian in origin.

This presentation will offer a brief reinterpretation of Genesis 1–3 that combines John Walton’s insights with new information from Sumerian linguistics to enhance the cosmic temple interpretation of Genesis 1 and provide clarity on the identity and responsibility of human beings (Genesis 2–3). In short, this talk will demonstrate that the sciences can be important for helping biblical scholars and theologians find better interpretations of ancient biblical texts.

## III.D. LIGHTNING TALKS + CONVERSATION: BIOLOGY

Great Hall

### Lightning Talks + Conversation: Biology

#### Join Us for a Brand New ASA Session Format!

Our goal is to connect participants with ASA affiliate groups or networks, share models for connecting faith and your field, and start rich discussions that will last long beyond the session.

We will launch the session with three lightning talks featuring speakers from the ASA Affiliation of Christian Biologists (ACB).

**Brian Greuel**, president of ACB, will introduce this ASA affiliate group and invite participants to its activities.

The following two speakers will share 7-minute lightning talks on how they connect faith and their field area in biology: **John Lewis** (Lipscomb University) and **Sarah Gall** (Franklin & Marshall College).

Next we’ll move into small groups to workshop our own ways to connect faith and our field.

Then we will come back together at the end to share an insight from each group.

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III.A. LIFE AND HEALTH SCIENCES 2  
(CONT'D)

Performance Hall

**Natural Viral Engineering in  
Cognition-Based Evolution**  
Perry Marshall

This session presents evidence that viral evolution is primarily driven by host-mediated genetic modifications rather than random mutations. Through genomic analysis of viral sequences, we demonstrate that host organisms actively participate in viral engineering through cellular mechanisms, resulting in predictable patterns of viral adaptation.

This process, termed Natural Viral Engineering (NVE), reveals host cells' cognitive capabilities to modify viral genetic sequences in response to environmental pressures. Analysis shows consistent patterns of modular genetic rearrangements facilitated by host cellular machinery, with viruses stimulating specific host responses that drive their evolution. Typically, viruses evolve from high lethality/low transmissibility to low lethality/high transmissibility patterns.

Our findings suggest that viruses serve as an open-source repository for evolutionary code in biological systems. This research establishes NVE as a new field within virology, offering implications for viral epidemiology, vaccine development, and evolutionary processes.

III.B. ENGINEERING,  
TECHNOLOGY, AND  
COMPUTER SCIENCE 2  
(CONT'D)

Leprino 102

**Toward Computational  
Science and Religion Studies**  
Fernando Pasquini Santos and  
Eric Araújo

The field of science and religion studies has established itself as a vital academic endeavor, exploring how scientific and religious ideas can inform and enrich one another. Traditionally, this field has focused on bridging gaps between theology and natural sciences such as physics, biology, and cosmology. However, the nature of science has transformed with the rise of computational methods, which now permeate scientific disciplines, shaping research practices and epistemological frameworks.

Despite its growing influence, the relationship between computational science and religion remains underexplored. Current discussions often focus on anthropology and artificial intelligence, or computational interpretations of religious practice (which could be posed rather as a computational science of religion), but these foci could lead us to overlook broader questions. Computational science introduces new ways of understanding nature through software, algorithms, simulations, and data-driven approaches, and, with them, new issues in scientific epistemology and practice, such as validation, explainability, uncertainty, and even the ubiquitous presence of human technology in the investigation of the natural world.

These themes warrant deeper investigation for their interactions with theological and religious discussions. We thus aim to sketch an overview and agenda for what could even be called a "computational natural theology," trying to cross recurrent themes in both the recent philosophy of computational science and science and religion studies.

III.C. THEOLOGY AND  
HUMANITIES 2 (CONT'D)

Leprino 104

**The Spiritual Journey of  
*Homo Sapiens***  
Jim Stump

I have a new contract from HarperOne for a book I'm calling "The Spiritual Journey of *Homo Sapiens*." Its overall purpose is to tell a hopeful story about where we have come from and where we could be headed.

The capacities we have today that allow us to bear the image of God—things such as language, free will, and love—came from somewhere and are connected to capacities of other creatures. But in the human context, they have become something more.

In this presentation, I'll give a brief overview of my thesis and then zoom in on a couple of the episodes. Most notably is my claim that central to our journey of spiritual development has been an ever-increasing circle of concern that transforms more and more of God's creation from "the other" to "one of us."

III.D. LIGHTNING TALKS +  
CONVERSATION: BIOLOGY  
(CONT'D)

Great Hall

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### III.A. LIFE AND HEALTH SCIENCES 2 (CONT'D)

Performance Hall

#### Challenges to Reliable Epidemiology and the Implications for Population Health

Mark A. Strand

The United States has experienced epistemological upheaval in recent years. Confidence in long-trusted scientific enterprises, such as epidemiology, and agencies, such as universities and the CDC, are threatened by reports about health-related topics in the popular press. This confusion puts people's health and lives at risk. Thought leaders and the public, are confused about what and whom to trust. Christians seem particularly vulnerable to popular depictions of health information.

Epidemiology is the study of the variable distribution of disease frequency in human populations and the determinants of that variability. It depends on reliable data, rigorous analysis, and honest application of these findings to answer critical questions. Epidemiology allows for analysis of causes of disease and prediction of disease patterns, in a way that improves population health in a way that individual approaches to health cannot.

As God's representatives on Earth (Gen. 2:15), humans are called to usher in God's kingdom (Matt 6:10), which includes enhancing human flourishing (Luke 4:18–19). In this presentation, the difference between population and individual health will be explained, relying on the biblical concept of the body as described in I Corinthians 12.

The use of the science of epidemiology needed to enhance human flourishing will be described. The role of bad faith actors in this dilemma, and the reasons for their undue influence, will be considered, along with a call to all epidemiologists, and scientists in general, to earn back the public's trust through a commitment to shared epistemological presuppositions and methods.

### III.B. ENGINEERING, TECHNOLOGY, AND COMPUTER SCIENCE 2 (CONT'D)

Leprino 102

#### Design Norms and Virtues for Artificial Intelligence Education and Design

Derek C. Schuurman

This presentation will describe the use of "design norms" that can be applied to the design of Artificial Intelligence (AI). These design norms, derived from the philosophy of the Dutch philosopher Herman Dooyeweerd, include cultural, lingual, social, economic, aesthetic, justice, ethical, and trust norms. An overview will be given of how design norms are incorporated in the undergraduate engineering and computer science curriculum at Calvin University and how they are also relevant for issues relating to AI.

Finally, it will be argued that design norms are not sufficient on their own to realize responsible AI. Students and practitioners in AI need to cultivate good character and virtues so that they are inclined to discern and respond appropriately to the norms that arise within a particular context. Some concluding thoughts will be shared about practices that can help cultivate virtue in students.

### III.C. THEOLOGY AND HUMANITIES 2 (CONT'D)

Leprino 104

#### New Creation Care Theology and Technology

Paul H. Carr

The year 2024 was the hottest on record. Weather and climate-related disasters like hurricanes and forest fires are increasing. Their \$15 billion annual cost in the 1980s is rising to over \$185 billion. Homeowners can't afford insurance.

Integration of technology with theology is essential. Technology provides know-how, while creation care theology adds moral motivation. New *technology*, inspiring *theology*, and enabling *economics* must save our *ecology*.

The invention of the coal-powered steam engine in the 1700s led to the increasing carbon dioxide emissions that are warming our planet. Green electricity from new photovoltaic panels and wind turbines has become cheaper than fossil fuels, but this green technology is intermittent. We must develop new storage technologies and constant geothermal and nuclear sources.

Evangelical climate scientist Katharine Hayhoe's book *Saving Us* urges us to convince skeptics to combat climate change, not with facts but by finding common ground, like cleaner air. The Evangelical Environmental Network, led by climate scientist Rev. Dr. Jessica Moerman, needs your help with its mission to individuals, churches, and policymakers.

Pope Francis's creation care theology is expressed in his encyclical. Its message is, "Stop pillaging our planet for profit, the poor are suffering the most." This helped Roman Catholic President Joe Biden to pass the Inflation Reduction and Climate Act, which gives economic incentives for reducing US carbon emissions.

### III.D. LIGHTNING TALKS + CONVERSATION: BIOLOGY (CONT'D)

Great Hall

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We will launch the session with three lightning talks featuring speakers from the ASA Affiliation of Christian Biologists (ACB).

**Brian Greuel**, president of ACB, will introduce this ASA affiliate group and invite participants to its activities.

The following two speakers will share 7-minute lightning talks on how they connect faith and their field area in biology: **John Lewis** (Lipscomb University) and **Sarah Gall** (Franklin & Marshall College).

Next we'll move into small groups to workshop our own ways to connect faith and our field.

Then we will come back together at the end to share an insight from each group.

*Be part of ASA history as we pilot this new format and get connected to others who work in biology or have an interest in it.*

IV.A. PSYCHOLOGY,  
NEUROLOGY, AND  
BEHAVIORAL SCIENCES 2

Performance Hall

**Understanding  
Depression: Evolutionary,  
Neurobiological, and  
Contemporary Perspectives**  
Kyle Valentino

According to the World Health Organization, over 280 million are depressed globally, and over 300,000 attempt suicide yearly. This calls for the need for effective and sustainable antidepressant strategies to promote quality of life and psychosocial functioning. Strikingly, an enduring finding in the biological sciences is the role religion has in counteracting the effects of depression.

In this presentation, I will describe the effect fundamental Christian values have in reducing depression and showcase how a biblical view of the human person is ultimately consistent with our evolutionary and neurobiologically informed view of mental health. Topics to be discussed include, but are not limited to, the intrinsic ability communion with God has in providing a purpose in life and a sense of belonging; how the absence of love—a fundamental Christian virtue—ultimately promotes despair, frustration, and suicidality; and the overlap engaging in a Christian lifestyle has with the neurobiological mechanisms underlying optimal depression treatment.

These findings will help support the view of how God has created the human person in his image and likeness and assist Christians in confidently practicing biblical teachings knowing they are consistent with our modern understanding of depression and neuroscience.

IV.B. INTEGRATION OF FAITH IN  
STEM EDUCATION 2

Leprino 204

**Teaching Tough Topics:  
Finding Joy in Cancer Biology  
Through Film**

Rebecca Dielschneider

There are few topics in biology as devastating as cancer. Cancers are a group of diseases that afflict animals and are characterized by atypical cell growth. These diseases eventually touch most families, leaving marks of disability and often death. The World Health Organization estimates that nearly 10 million people died from these diseases in 2022, and unfortunately, these diseases are only becoming more common. The International Agency for Research on Cancer estimates that cancer incidence will increase by 77% by the year 2050.

These sobering statistics, alongside complex biology, make cancer a difficult topic to teach. They provoke a number of difficult questions for Christian educators like myself. How can I inspire a classroom of students sadden by the realities of cancer? How can I share the love of God while navigating the biology of deadly diseases? What does worship look like to a cancer researcher?

A helpful aid has been the film “Cancer: The Emperor of All Maladies” directed by Barak Goodman and produced by Ken Burns, a self-described deist. This six-hour documentary was based on the Pulitzer Prize-winning book by Siddhartha Mukherjee. I’ve used this documentary as a teaching tool every time I’ve taught a fourth-year university-level course on cancer biology, and I’ve seen great success.

In this presentation, I’ll discuss this documentary, its use of religious language, its surprising depiction of faith in times of pain, and the impact it has made on undergraduate students learning cancer biology. Furthermore, I’ll explore how it has helped me find joy in this tough topic of cancer biology.

IV.C. PHYSICAL AND  
ENVIRONMENTAL  
SCIENCES 3

Leprino 206

**Making Connections:  
A Source of Wonder and Joy**  
Sidney Niemeyer

My first experience of profound wonder in science occurred during an introductory class on electricity and magnetism. It culminated with developing an equation for an electromagnetic wave, in which the velocity was given by constants defined in Maxwell’s equations. Incredibly, inserting the values assigned to these constants gave the velocity of light. I was deeply moved by connecting what seemed to be disparate fields to yield new insight—light is an electromagnetic wave.

Discovering new connections in science provokes that kind of awe and wonder. My most significant contribution in cosmochemistry was the discovery of titanium isotopic anomalies in meteorites. In attempting to interpret my early results, I began to discern a possible new way of understanding the formation of their most primitive constituents. The development of this idea filled me with excitement and wonder that measurements of minute differences could give new insights to the early history of the solar system.

In my later career, I pioneered the development of nuclear forensics. In this field, we seek to connect the characteristics of nuclear materials with their production origin and subsequent history. I featured this field in a mystery thriller in which scientists seek to connect the dots to prevent a nuclear catastrophe.

But the most wonderful connection of all is realizing that the creator of this physical world created us. Each of us comes into this world looking for someone looking for you. What wonder and joy when that desire is met by personally connecting with our creator!

IV.D. LIGHTNING TALKS +  
CONVERSATION: AI AND  
MACHINE LEARNING

Great Hall

**Lightning Talks +  
Conversation: AI and  
Machine Learning**

Join us for a brand new ASA session format! Our goal is to connect participants with ASA affiliate groups or networks, share models for connecting faith and your field, and start rich discussions that will last long beyond the session.

**Hannah Eagleson and Derek Schuurman** will introduce new and ongoing ASA work on AI topics.

Other speakers will share 7-minute lightning talks on how they connect faith and their field area in AI.

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**IV.A. PSYCHOLOGY,  
NEUROLOGY, AND  
BEHAVIORAL SCIENCES 2  
(CONT'D)**

Performance Hall

**Psychological Research  
on Work as a Calling:  
Implications for Christian  
Discourse on Vocation**

**Bryan J. Dik**

Over the past two decades, empirical research on work as a calling has expanded rapidly, establishing itself as a dynamic and global area of study within vocational psychology and organizational behavior. Findings from this research area address key questions relevant to Christian perspectives on vocation, yet they have received little attention in contemporary Christian discourse on the subject.

This talk presents a brief overview of the current state of calling research, including commonly used definitions, measurement approaches, and methods. It also summarizes accumulating cross-cultural research on calling, as well as its antecedents, correlates, and consequences.

The talk briefly touches on theoretical frameworks that explain how experiencing a calling influences work and life outcomes, and on the implications of this research for how Christians conceptualize the role of calling in career decision making.

**IV.B. INTEGRATION OF FAITH IN  
STEM EDUCATION 2 (CONT'D)**

Leprino 204

**Teaching Scientific  
Understandings of Origins in  
the Context of the Doctrine  
of Creation**

**Raymond Lewis,**  
Stephen Moshier, Robert Bishop,  
John Walton, and Larry Funck

We wrote the textbook *Understanding Scientific Theories of Origins: Cosmology, Geology, and Biology in Christian Perspective* to teach undergraduate students about science in general with a focus on the science of origins, and how we can integrate these scientific explanations with our Christian faith.

To do this, we laid a foundation of biblical interpretation of creation texts, described the Christian Doctrine of Creation, and provided guidelines from the philosophy of science. These not only provide a way for us to understand how our scientific understandings relate to our biblical commitments, but also how we can better understand God's special and general revelation.

Aspects of the Christian Doctrine of Creation provide a theological context which helps us understand God's creation, providing a deep integration of Christian faith and science. Such aspects include the Creator-creature distinction, creation *ex nihilo*, the limitedness of creation, the personal involvement of the Trinity, the ministerial action in creation, and the functional integrity of creation.

**IV.C. PHYSICAL AND  
ENVIRONMENTAL  
SCIENCES 3 (CONT'D)**

Leprino 206

**CO<sub>2</sub> Musings  
Terry M. Gray**

Atmospheric concentrations of carbon dioxide (CO<sub>2</sub>) are increasing. The well-known Keeling curve, measuring the atmospheric CO<sub>2</sub> concentrations, shows that CO<sub>2</sub> concentrations have increased from around 280 parts per million (ppm) in pre-industrial times to now over 420 ppm over the course of the last century. CO<sub>2</sub> emissions due to human civilization-based combustion reactions are the major cause of this increase. Because of the infrared light (IR) light absorbance of CO<sub>2</sub>, this has led to an increase in atmospheric temperatures over that same period.

Meeting global energy needs without emitting CO<sub>2</sub> is necessary in order to avoid this temperature increase. Renewables and nuclear energy are one solution to this problem. Removing CO<sub>2</sub> from the atmosphere is another—removing CO<sub>2</sub> also allows us to undo some of the increases we have recently seen.

Even when renewables and nuclear energy replace fossil fuel-based energy production, some applications may continue to require combustion of hydrocarbons. Advances in CO<sub>2</sub> capture technologies with the subsequent storage, transformation into carbonate mineral, or regeneration of carbon-based fuel are possible solutions to this CO<sub>2</sub> problem.

A carbon cycle involving combustion of carbon compounds to CO<sub>2</sub> back to carbon compounds is the high-tech version of what has been happening on Earth throughout the history of life in the photosynthesis-respiration cycle. How Christians ought to think about these issues will be discussed throughout.

This paper is a summary of responses to the global warming crisis that allows for a continued use of carbon-based fuels. It is a novel bringing together of technologies are only recently getting attention in mainstream discussions.

**IV.D. LIGHTNING TALKS  
CONVERSATION: AI AND  
MACHINE LEARNING (CONT'D)**

Great Hall

**Lightning Talks +  
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**IV.A. PSYCHOLOGY,  
NEUROLOGY, AND  
BEHAVIORAL SCIENCES 2  
(CONT'D)**
**Performance Hall**
**Leveraging Adaptive  
Resonance Theory for  
Memory Data:  
An Autonomous Approach  
without Back Propagation**  
Charitie Martino

As a computational framework that models how biological systems adapt and learn from new information, Adaptive Resonance Theory (ART) uniquely meets the challenge of simultaneously harnessing stability and flexibility in its models. This allows for an alternative to back propagation for memory data applications via its autonomous learning characteristics.

Continuous learning and adaptation are essential for real-time learning scenarios which are complemented by the inherent stability mechanisms in ART's models. Preventing catastrophic forgetting and maintaining robust memory representations over time, we will demonstrate the effectiveness of ART-based models for memory data tasks.

Fitting human data into universal mathematical models broadens our ability to operationalize brain processing in ways that reflect its full complexity: integrating algorithmic and logical functions with contextual and intuitive reasoning, and reconciling vagueness and ambiguity with precision. This expansion of conceptual boundaries reveals the creative intricacy of God.

Every scientist throughout history has worked within certain limits of current knowledge—an experience that can either lead to discouragement or become an act of worship, acknowledging that God's thoughts are higher than ours and trusting that he provides the exact type and amount of knowledge needed for each moment in time.

**IV.B. INTEGRATION OF FAITH IN  
STEM EDUCATION 2 (CONT'D)**
**Leprino 204**
**Helping Students Understand  
New Scientific Discoveries  
in Origins**
**Stephen Moshier,**  
Raymond Lewis, Larry Funck,  
Robert Bishop, John Walton

Exploring scientific theories for the origins of the universe, earth, life, species, and humans provides for both powerful and provisional explanations. The course "Theories of Origins" has been taught every year at Wheaton College since 1995, and in these 30 years, many new discoveries have added to our knowledge.

We have seen a revision of the age of the universe, the discovery of thousands of exoplanets, and new or revised hypotheses for the origin of life. The genetic advances in biology reveal new processes for understanding the diversification of life. The discovery of new fossils of intermediate forms, including new hominin species, have resulted in some changes in how we describe both patterns and processes in speciation. The Human Genome Project followed by the exploration of DNA in hominin fossils such as Neanderthals has revealed more about human origins.

Some of these discoveries impact the way we understand origins in the context of biblical interpretation. For example, observations of developing planetary systems around stars in our galaxy show that our own solar system is among the rarer forms, consistent with arguments for fine-tuning required for the emergence and flourishing of life. Helping students come to grips with such interpretations provides a way for them to better integrate their faith and understandings of science.

**IV.C. PHYSICAL AND  
ENVIRONMENTAL  
SCIENCES 3 (CONT'D)**
**Leprino 206**
**What the Great Migrations  
Reveal about the Extent and  
Timing of Noah's Flood**
**Hugh Ross**

Genesis 10–11 describes the post-Flood dispersal of humanity from the Near and Middle East into all parts of the old world (Africa, Asia, Australia, and Europe). Four independent findings—human remains, archeological artifacts, indicators of agriculture and food preparation, and genetic analysis—establish rough, but reliable, dates for this dispersal.

The dates show that western and northern Africa, eastern Asia, Australia, northern and southern Europe, and New Guinea were all settled by anatomically modern humans 50,000–40,000 years ago. Noah's flood's duration (Genesis 8) indicates it took place during an ice age, thus likely sometime between 120,000 and 50,000 years ago.

Given the refusal of pre-Flood people to fill the Earth (Gen. 1:28, 9:1, 7; 11:4) and Peter's comment (2 Pet. 2:5; 3:6) that the flood targeted "the world of the ungodly," "the world of that time," one can reasonably infer Noah's flood was neither global nor small, and yet it was "universal" with respect to humanity. All the land occupied by humans and their animals was flooded.

According to this scenario, the scientific facts match the biblical account. A major source of doubt about the accuracy of God's Word is removed.

**IV.D. LIGHTNING TALKS  
CONVERSATION: AI AND  
MACHINE LEARNING (CONT'D)**
**Great Hall**
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## V.A. THEOLOGY AND HUMANITIES 3

Performance Hall

**Toward Transcending the Conflict Model**

Carol C. Kankelborg

As much as we aspire to the ideal of complementarity between science and Christian theology, why does conflict between these two disciplines persist?

The frequent response to such conflict is to dismiss it as an illusion. This approach is ineffective at bringing reconciliation between the two.

Using Richard Bube's typology of seven ways of relating science and Christian theology as a starting point, I will contrast the conditions that lead to conflict with those needed for complementarity.

I will then apply these insights to the late-nineteenth-century writings of John William Draper and Andrew Dickson White, which are generally accepted as having popularized the idea that science and theology are in conflict with one another.

By understanding why Draper and White's solutions to the conflict fail to uphold both authentic science and authentic theology, we can hopefully learn from the past and chart a way forward to move beyond today's conflicts into complementarity.

## V.B. LIFE AND HEALTH SCIENCES 3

Leprino 204

**Are Breast and Prostate Cancers Similar? Exploring Today's Research Directions Through the Lens of Redemption**

Chloe Liu

The biblical story unfolds through a journey of Creation, Fall, and Redemption. We are conducting science in the unfolding process of redemption, where God's plan is transforming our world. As a prostate cancer researcher in a breast cancer laboratory, I have the opportunity to examine the research directions of both these cancers, which are similar yet distinct.

The early stages of both breast and prostate cancers share similar biological structures, but they inherit different research approaches for screening and diagnosis. Understanding these differences could, in turn, help improve clinical developments in diagnosis and therapy shaped by historical understandings in each field.

Although growth of both cancers is heavily sex hormone-dependent, advancements in prostate cancer treatment have been much slower than those for breast cancer. Various cultural and economic factors influence levels of support for different research preferences by both public and private interests.

By acknowledging these trends and the diverse perspectives across fields, we can broaden our understanding of cancer care and become more effectively engaged in God's plan of redemption. Our Lord does not abandon his creation. One of his expressions of deep care for it is his empowerment of cancer researchers and caregivers to heal and alleviate suffering. As Christians we partner with God in his Kingdom work, knowing that his presence in our work brings joy and hope.

## V.C. PRESIDENT'S PANEL: NAVIGATING CALLINGS AND DUAL CAREERS

Leprino 206

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Facilitator: Janel Curry

What does it look like to navigate our callings in the context of dual careers and family? We will hear from three couples who have experience in living this out in three different contexts.

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They will share their journeys and strategies for living rich and multi-textured lives.

## V.D. AFFILIATES AND CHAPTERS WORKSHOP

Leprino 202

**Confronting Burnout: Tending the Soul Beneath the Strain**

Mindy Caliguire

Burnout isn't just about fatigue or stress—it's a signal from the soul. In a world of relentless demands, even those with a deep sense of purpose can find themselves depleted, discouraged, and disconnected.

This 90-minute workshop invites the scientific community into a reflective, research-informed, and spiritually grounded exploration of burnout, not merely as a professional hazard, but as a soul-level crisis. Together, we'll uncover how symptoms like chronic exhaustion, isolation, or cynicism often point to deeper soul neglect.

Participants will be equipped with language, practices, and pathways to tend to their inner life in the midst of vocation. Through a blend of assessment, teaching, guided reflection, and interactive dialogue, you'll learn how to recognize early warning signs, reframe burnout as a divine invitation, and take practical steps toward wholeness.

Come prepared not just to manage stress, but to care for the very soul that sustains your life and calling.

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**V.A. THEOLOGY AND HUMANITIES 3 (CONT'D)**

Performance Hall

**The Symbolic Cosmos: Reclaiming the Historical Christian Vision of the World**  
Seth Hart

Conversations between science and theology often center on questions of compatibility, apologetics, and mutually beneficial dialogue. While fruitful, these interactions represent a particularly modern understanding of the domains and territories of each field. Unfortunately, this has resulted in an overlooking of a predominant stream of natural theology that has been present historically in all three major branches of Christianity.

Appropriating key elements of Platonism, historical Christianity developed a symbolic view of the cosmos, whereby all natural beings communicate something unique of the divine. The prototypical example of this practice was the pelican, which is often found in medieval and early modern cathedrals, and whose presence is often mysterious to contemporary worshippers. Yet these birds, (falsely) believed to sacrifice their blood for the sake of their offspring during times of famine, were believed to be divine communications, written into the natural order, of Christ's atoning work.

All natural beings were similarly interpreted through a theological lens, and though this might strike modern ears as unusual, it is perhaps best understood through the fact-meaning distinction. While scientific studies unveil facts, theology could render the meaning these facts point toward—a meaning understood only through the language of the Christian narrative. As such, all creation was seen as a multitude of stories conveying the same message found in sacred text. If recaptured, this vision of the cosmos could strengthen the theological value of the scientist's work and motivate us anew to worship God through what has been made.

**V.B. LIFE AND HEALTH SCIENCES 3 (CONT'D)**

Leprino 204

**Does LDL-C as Double Agent Solve the Riddles (LDL Paradoxes)?**  
Keith Furman

Many recent reviews call for major clinical trials of ketogenic diets to prevent or treat everything from diabetes, Alzheimer's disease, and other diseases of inflammation to heart failure. But diet-increased LDL cholesterol levels challenge ketogenic diet sustainability.

Mounting evidence supports the hypothesis that LDL-C risk is mainly about its subfraction ratio, not level. LDL-C is a heterogeneous mixture of 7 particle subfractions when separated via FDA approved Lipoprint® electrophoresis. LDL-1 and LDL-2 comprise "anti-atherogenic" light buoyant LDL (lLDL). LDL-3–LDL-7 comprise particularly atherogenic small dense LDL (sdLDL).

Previous research by Wu et al. found LDL-4 to be the "the notable risk factor of coronary artery disease [CAD] development" in a 500+ CAD "suspected" Chinese cohort. An independent analysis by sdLDL quantiles of their available raw data revealed that LDL-C level significantly correlated *both negatively* with CAD (and/or severity) and T2D when sdLDL levels were low (~3-7 mg/dl) and *positively* when high (>= 38 mg/dl). That is despite no overall correlation with LDL-C level. Evidence will be presented that intermediate density lipoprotein cholesterol (IDL-C), a subcomponent of "LDL-C," is more associated with CAD severity than even sdLDL when sdLDL is high.

This understanding of LDL-C as a metabolic-health-dependent double agent is argued to make sense of the known LDL paradoxes.

**V.C. PRESIDENT'S PANEL: NAVIGATING CALLINGS AND DUAL CAREERS (CONT'D)**

Leprino 206

**Navigating Callings and Dual Careers**

Facilitator: Janel Curry

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**V.D. AFFILIATES AND CHAPTERS WORKSHOP (CONT'D)**

Leprino 202

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**V.A. THEOLOGY AND HUMANITIES 3** (CONT'D)

Performance Hall

**A Physicist's Perspective on God: Roadmaps to Wisdom Through Science and Life**  
Alan Tai

The pursuit of wisdom is one of life's most meaningful journeys. In this AI era, vast knowledge is readily accessible, but how can we attain true wisdom to guide the use of information and technology for humanity's benefit? My book, *A Physicist's Perspective on God: Roadmaps to Wisdom Through Science and Life* (Xulon Press, 2020), shares my journey in seeking wisdom and invites others to explore life's greatest mysteries.

Both general and special revelation (Rom. 1:20; Heb. 1:2–3) testify that divine wisdom far surpasses human wisdom and artificial intelligence. While science relies on objectivity, data analysis, and observation to uncover truths and wisdom, the scientific studies of the universe's complexity point beyond human wisdom to the divine wisdom behind creation.

This presentation introduces the "Roadmaps to Wisdom" as a framework for understanding divine wisdom. Viewing a picture of a completed jigsaw puzzle beforehand, you will find that the picture facilitates you to put the scattered pieces of the puzzle together into a complete jigsaw puzzle.

Similarly, the function of a scientific roadmap is like the picture to help you to re-organize the puzzle of the biblical truth to meaningful and lively visions. It can also serve as a blueprint for exploring biblical truths and how to build an intimate relationship with God.

By integrating science with revelation, these roadmaps can help overcome barriers in understanding and communication with God. I hope to inspire others to embark on their own life's journey of discovery, leading to a profound appreciation of divine wisdom.

**V.B. LIFE AND HEALTH SCIENCES 3** (CONT'D)

Leprino 204

**Inescapable Teleology: The Language of Biology and Humanity's Search for Meaning**  
Walter N. Harrington

William Paley cemented the watchmaker analogy as the paradigmatic illustration of the teleological argument, effectively equating teleology with good design. Naturalists, however, quickly found this argument inadequate, pointing to examples of "bad" or even "malicious" design.

Darwin himself wrote, "I cannot persuade myself that a beneficent and omnipotent God would have designedly created the Ichneumonidae with the express intention of their feeding within the living bodies of caterpillars."

Stephen Jay Gould later argued that evolution is a historical contingency, not a purposeful march of progress, while Richard Dawkins claimed the universe exhibits "... no design, no purpose, no evil, no good, nothing but pitiless indifference." Most biologists today reject the notion that evolution is goal-directed.

Yet our language betrays us. In physics, we do not say gravity "wants" to pull objects downward, nor in chemistry do we describe atoms as "longing" to bond. But in biology, teleological language is unavoidable. Birds build nests to protect their young, and viruses "evolve" to evade the immune system. Seeking purpose in living systems reflects something fundamental about how humans understand life.

If science has dismantled the teleological argument from design, has it also dismantled teleology itself? Nihilism follows from a world without purpose, yet human intuition resists it. I propose reframing teleology as an argument from purpose rather than design, recovering a vision that aligns with our deepest intuitions about life. In doing so, we may recover a richer, more compelling vision of teleology, one that speaks to the deepest intuitions of human experience.

**V.C. PRESIDENT'S PANEL: NAVIGATING CALLINGS AND DUAL CAREERS** (CONT'D)

Leprino 206

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## VI.A. PHYSICAL AND ENVIRONMENTAL SCIENCES 4

Performance Hall

**The Poison Water Site: A Case Study Reflection of This Country's Worst Carbon Tetrachloride Groundwater Contamination Site from a Human, National Contingency Plan, and Biblical Perspective**  
David Heidlauf

Velsicol Chemical disposed of 200,000 pesticide waste drums at a west Tennessee farm in the 1960s in 90-foot-thick vadose zone sandy soils that resulted in this country's worst carbon tetrachloride groundwater contamination site. Carbon tetrachloride groundwater concentrations have ranged from three to four orders of magnitude above its safe drinking water standard.

Downgradient residents were exposed to contaminated groundwater in the late 1970s at concentrations 7,000 times higher than considered safe. All exposed residents suffered harm. Initial site investigations and remedial efforts were fraught with errors and remedy failure. Some residents received de minimis financial settlements from a 1980s toxic tort litigation. Residents are desensitized to the pollution and simply know the area as the "Poisoned Water" site.

The government's national contingency plan dictates that "Principal Threat Waste" (buried drums) be removed and impacted groundwater be restored to drinking water conditions. However, removal and offsite incineration of the drums is not implementable due to cost (billions) and restoration of the groundwater is unattainable in a reasonable amount of time due to the magnitude of the contamination problem. Response actions can mitigate, but not fully remediate, the contamination.

Biblically, the transition of the site from an ecologically rich farm to a mega-superfund site is analogous to God's good creation becoming polluted by sin, only able to be fully restored to God through the atonement of Christ's blood. Biblical analogies of polluted wells, springs, cleansing of these resources, and Christ's life-giving water are testaments to his love for us and his creation.

## VI.B. THEOLOGY AND HUMANITIES 4

Leprino 102

**Genesis 1: Adam-Humanity/ Genesis 2: The Individuals Adam and Eve**  
Fred S. Cannon

The Hebrew word *adam* can either mean *adam*-humanity or *adam*-human. In Genesis 1, *adam* means humanity. Genesis 1 broadly depicts God's creation of the universe, earth, life, and humanity. Genesis 2 focuses on the *adam*-human individuals named Adam and Eve, as they communicate with God in Eden. We perceive that the Genesis 1 *adam*-humanity progressively evolved over several million years, then emerged with well-developed *Homo sapiens* capabilities in southern and eastern Africa about 40,000–80,000 years ago.

Then the Genesis 2 Adam and Eve lived in Eden just north of the Persian Gulf, near the confluence of four rivers: the Tigris, Euphrates, Pishon (now called Wadi-al Batin) and Gihon (now called Karun-Karkheh). At 9,000–12,000 years ago, the ocean's sea level was 170–220 feet lower than it is now—including in the Persian Gulf region. So, what was then Eden could now be submerged.

This presentation will appraise Genesis 1 and 2 words that offer clues regarding the climate, environment, culture, and relationships that humans experienced in those biblical settings. Then we will chronicle the archaeology, climate, environment, habitat, seascape, and lifestyles of the *Homo sapiens* who lived in South Africa about 40,000–80,000 years ago. This will particularly appraise the South African coastal cultures of Pinnacle Point, Howiesons Poort, and Still Bay. Next, we will turn to the setting for humans who lived near the Persian Gulf, southern Tigris-Euphrates rivers, and Zagros mountains about 9,000–12,000 years ago. This will particularly address the Younger Dryas drought and Neolithic Demographic Transition there.

## VI.C. INTEGRATION OF FAITH IN STEM EDUCATION 3

Leprino 104

**The Future of Faith and Science**  
Deborah Haarsma

The big questions at the intersection of science and faith have changed substantially over the years, as has the cultural landscape in which we work. Drawing on recent survey data and experience in the field, I will discuss narratives and approaches to address the challenges ahead.

The Christian worldview gives a robust understanding of the human person that provides a necessary check on rising scientism, while also valuing scientific findings and the power of medicine and technology to work for human flourishing. Rational argument still has a place, but the bigger need—across multiple topics—is compelling narratives that affirm an active role for God and a valued place for humans, delivered by messengers who live out authentic faith.

In a culture where "truth" is optional, approaches such as wonder, personal stories, and care for others become a compelling witness to the world and to the rising generation.

## VI.D. CHRISTIAN WOMEN IN SCIENCE (CWIS)

Leprino 202

**Dynamics of Women in the Workplace**  
Veronica Frans, Moderator

Panelists:

- Rita Wang, ASA Student and Early Career Representative
- Abby Worland, Denver Institute for Faith & Work
- Sarah Gall, CWIS leader

Join the Christian Women in Science (CWIS) for a conversation about the Dynamics of Women in the Workplace.

Perspectives from early career, mid-career, and changes in career pathways will be represented by our panelists, respectively: Rita Wang, ASA member; Abby Worland, The Denver Institute; and Sarah Gall, CWIS leadership.

These successful career women will share with the audience about their work experiences, offering insights on the unique challenges for Christian women at each stage throughout a career.

There will be an opportunity for audience participation as we learn from each other about how to integrate faith and calling.

**VI.A. PHYSICAL AND ENVIRONMENTAL SCIENCES 4 (CONT'D)**

Performance Hall

**Machine Learning-Guided Discovery of Catalysts for Efficient Hydrogen Generation**
**B. Moses Abraham**

Advancing sustainable technologies such as water-splitting devices, fuel cells, and rechargeable batteries require cost-effective and eco-friendly materials, but discovering these innovative technologies is hindered by complex trade-offs and optimization challenges. Artificial intelligence, employing data mining and machine learning (ML) tools revolutionizes material discovery by accelerating the screening process through efficient exploration of vast chemical space.

Investigation of recently developed transition metal carbides/nitrides (MXenes), distinguished by their distinctive physical and chemical characteristics, has gathered widespread attention of material scientists. Given the practical constraints of synthesizing the vast array of possible MXenes, a holistic approach that combines experimental and computational methods with ML gains prominence.

This presentation highlights the pivotal role of ML in extracting knowledge from existing MXenes by using implicit data patterns and intricate correlations, providing intelligent guidance for purposeful MXene's development. Emphasizing the importance of SMART (specific, measurable, attainable, relevant, and timely) targets, the presentation illustrates how these objectives strategically shape the selection and transformation of data.

Subsequently, our recent work is showcased, featuring a versatile multistep procedure employing various supervised ML algorithms to develop well-trained data-driven models capable of predicting the hydrogen evolution reaction (HER) activity across a dataset comprising 4,500 MXenes configurations.

**VI.B. THEOLOGY AND HUMANITIES 4 (CONT'D)**

Leprino 102

**From Scripture to Strategy: Bridging Theology and Stewardship Science for Organizational Growth**
**Ray'Chel Wilson**

This theoretical analysis proposes an 8-element stewardship checklist derived from structural parallels between Paul's Epistle to the Romans and modern nonprofit case statements. Through exegetical examination of the "living sacrifice" concept in Romans 12:1-2, the study develops a framework translating Pauline theological principles into actionable development practices for faith-based organizations.

The methodology employs analogical reasoning to "rhyme" ancient epistolary strategies with contemporary organizational challenges, particularly in Black church contexts. Key components include body-as-temple stewardship models, koinonia-based communication protocols, and sacrificial giving metrics.

The framework demonstrates how the structure of Romans mirrors modern formal case statements, providing a biblically grounded approach to volunteer engagement, cross-ministry communication, and resource development. Designed for implementation at Metropolitan Baptist Church in Tulsa, Oklahoma, this work bridges practical theology with organizational science while honoring historical and cultural contexts.

The study contributes to both theological and organizational literature by operationalizing spiritual principles for sustainable church development.

**VI.C. INTEGRATION OF FAITH IN STEM EDUCATION 3 (CONT'D)**

Leprino 104

**Will Nature Survive Compute?**
**Joseph Vybihal**

ChatGPT has brought to the fore an important term from computer science known as "compute." Compute refers to the volume of calculations a computer must perform to complete an activity. Compute requires energy to run the machines that perform these calculations, which is proportional to the amount of CO<sub>2</sub> required to generate that energy, which is proportional to the impact said CO<sub>2</sub> has on the climate.

An idling computer does not use the same amount of energy as a computer engaged in an activity. AI, as an activity, needs a lot of compute. This presentation attempts to describe and quantify the impact of compute from computationally intensive activities and put it into a biblical context by exploring Leviticus 26 (Sabbath rest for the land), and judgment as described in Jeremiah 25 and 36 (exile in Babylon).

We end with a look toward hope, both in terms of the things we can do through technology to make things better, but also in terms of humility and a theocentric approach to creation care.

**VI.D. CHRISTIAN WOMEN IN SCIENCE (CWIS) (CONT'D)**

Leprino 202

**Dynamics of Women in the Workplace**
**Veronica Frans, Moderator**

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**VI.A. PHYSICAL AND ENVIRONMENTAL SCIENCES 4 (CONT'D)**

Performance Hall

**Cosmic Affordance Structure Confirms Purpose of an Evolving Creation**

Dominic Halsmer, Jonathan Maier, and Nickolas Garcia

How should believers understand an evolving creation in light of both the special and general revelations that inform a Christian worldview?

This question pulls hard at the seams of our unity as Christians. But the concept of ecological affordances lends insight into God's purposes for creation and why he chose to initiate and sustain such a dynamic cosmos.

Affordances are simply relationships between various elements of the natural world that contribute to the dizzying array of potential actions available to its inhabitants. The structure of these evolving affordances can be quantified to enhance our understanding of the marvelous ingenuity of our Maker and how he is accomplishing his purposes throughout redemptive history.

Furthermore, it is argued that the direct perception of these affordances is one means by which God's eternal power and divine nature are revealed to humankind, so that everyone is without excuse (Rom. 1:20). It is hoped that this perspective will lead believers into a more unified view of science and faith or, at least, contribute to a deeper appreciation for the diversity of Christian views concerning creation.

**VI.B. THEOLOGY AND HUMANITIES 4 (CONT'D)**

Leprino 102

**Does Second Peter Problematicize Local Interpretations of the Biblical Flood?**

William Horst

My presentation at the 2023 ASA conference (see now *Theology and Science* 22 [2024]: 1–17) identified an unresolved issue at the intersection of science and Christian scripture. Specifically, several recent treatments of the flood of Genesis (chaps. 6–9) have addressed apparent conflict between mainstream geology and hydrology on the one hand and a global understanding of the deluge on the other by positing that a local flood lies behind the biblical account. However, as I argued in that paper, these studies cannot readily be extended to address the reference to the flood in 2 Peter 3:5–7.

A global perspective on the ancient deluge appears to be important to the rhetoric of 2 Peter 3:3–13, since the flood foreshadows and provides evidence for a future eschatological catastrophe of global/cosmic proportions. This year's presentation would propose a solution to the problem I previously identified, drawing inspiration from a recent exegetical analysis by Ryan P. Juza.

Juza suggests that 2 Peter portrays the flood as smaller in scope than the anticipated cosmic conflagration, and I argue that this insight facilitates the harmonization of 2 Peter with the concept of a local flood. Further, I will show that numerous Jewish interpretations of the flood from the second temple period lend additional historical-cultural plausibility to the sort of interpretation proposed by Juza. My approach represents an effort to give due consideration to both of God's "two books," nature and scripture.

**VI.C. INTEGRATION OF FAITH IN STEM EDUCATION 3 (CONT'D)**

Leprino 104

**The Future of Faith and Science**

Deborah Haarsma

The big questions at the intersection of science and faith have changed substantially over the years, as has the cultural landscape in which we work. Drawing on recent survey data and experience in the field, I will discuss narratives and approaches to address the challenges ahead.

The Christian worldview gives a robust understanding of the human person that provides a necessary check on rising scientism, while also valuing scientific findings and the power of medicine and technology to work for human flourishing. Rational argument still has a place, but the bigger need—across multiple topics—is compelling narratives that affirm an active role for God and a valued place for humans, delivered by messengers who live out authentic faith.

In a culture where "truth" is optional, approaches such as wonder, personal stories, and care for others become a compelling witness to the world and to the rising generation.

**VI.D. CHRISTIAN WOMEN IN SCIENCE (CWIS) (CONT'D)**

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There will be an opportunity for audience participation as we learn from each other about how to integrate faith and calling.

## STUDENT POSTER CONTEST

Graduate and undergraduate students submitting posters will be entered into the student poster contest. We are excited to honor exceptional student work at the Annual Meeting.

Posters will be judged on the following criteria:

### OVERALL CLARITY OF PRESENTATION

- Visual interest
- Readability
- Balance between text and visuals

### ELEMENTS AND FLOW

- Title and authors
- Statement of purpose and significance
- Description of research

### QUALITY OF RESEARCH

- Key references to support findings/conclusions

### GRAPHS AND DATA PRESENTATION

- Do they support the conclusions?
- Are they readable and clear?

The winner will be announced at the Sunday night Ice Cream Social and InterVarsity Reception.

1

### Exploring Creation Through a STEM Outreach Activity

Daniel Aletheuo and Nathan Roewer, students and Julie Woodman, professor

Fostering curiosity in the natural sciences for future generations aligns with our call to study and be stewards of creation. A reflection and pursuit of scientific knowledge deepens our understanding of God's laws and his will for creation. One method of sparking this curiosity in younger generations is through the implementation of STEM outreach activities.

Here we describe a National Science Foundation funded STEM outreach program to inner city middle school youth led by scientists of diverse backgrounds. The goals of this outreach were to increase student understanding of course content, to enhance student appreciation for and understanding of the scientific method, and to explore student perceptions of science, with the long-term goal of understanding how to increase STEM enthusiasm for diverse learners.

We show through pre- and post-assessments that introducing students to science in this context leads to outcomes of increased course content knowledge, increased understanding of the scientific method, as well as notable changes in perception of scientists at work. We also show an increase in student confidence in answering questions regarding the scientific method.

By these metrics, we conclude that STEM outreach programs can be effective in raising student classroom performance. This impacts student involvement in scientific content and encourages confidence and interest in science. Furthermore, we discuss how positive exposure to the sciences at a young age should lead to an increase in equity and inclusion within the field by inspiring interest and confidence in the field for students of all backgrounds.

2

### Christianity as a Harmful and Healing Influence Among Nursing Professionals with Bipolar Disorder

Julianne Armijo

Existing literature examines the role of Christianity among the general population diagnosed with bipolar disorder; however, the impact of Christianity among nursing professionals with bipolar disorder is underexamined. This review aimed to explore the impact of Christianity on nurses diagnosed with bipolar disorder. Searches were conducted in *PubMed*, *CINAHL*, and *PsycInfo*. Articles were screened using Covidence software, and data were extracted and analyzed using Covidence and NVivo 14. Thematic analysis was performed with attention to reflexivity.

Of 1,683 articles screened, five qualitative articles were included in this review. All articles were from the United States and featured predominantly female nurses. Most participants had bipolar disorder type I. The analysis divided themes into two categories: (1) harmful influences and (2) healing influences. Harmful influences included pathological hyperreligiosity and stigma. Healing influences included integration with community support in faith-based settings, supportive family members, healthy relationships with scripture, and empathy toward patients.

This review identified critical themes related to Christianity among nursing professionals diagnosed with bipolar disorder. Understanding these themes will fortify existing support structures within the Christian community and foster the creation of others, such as nurse-led mental health ministries and profession-specific faith-based support groups.

This study indicates a need for further exploration of socio-demographics and the impacts of harmful and healing influences of Christianity among nursing professionals with bipolar disorder. Future research should incorporate robust qualitative and quantitative methods.

3

### Institutional Quality and Environmental Sustainability in Canada: From a Faith-Based Perspective

Isaac Kofi Bekoe

About 1.5 billion people globally are infected with the soil transmitted helminths (STHs) *Ascaris*, whipworm, and hookworm. These parasitic infections are most concentrated in tropical and subtropical regions with inadequate access to clean water and poor sanitation. The effects of these parasitic infections, while often nonlethal, are devastating; they deplete host nutrients while dampening the immune response, perpetuating the cycle of poverty and subsequent infections. The pharmaceutical options available to treat parasites are limited, due to the high cost of production and low profitability. The World Health Organization (WHO) has approved four drugs for mass administration (MDA) but of the 4, only 2 different mechanisms of action exist, and data indicates drug resistance is emerging. Thus, new drugs with different mechanisms of action are desperately needed.

Recently, the Medicines for Malaria Venture Pathogen Box provided researchers with a library of 400 compounds for the purpose of screening for possible new treatments of neglected tropical diseases (NTDs). Previously, Partridge et al. tested this library on *C. elegans*, a free-living nematode that is in the same family as the helminths mentioned above, and they found multiple promising compounds.

We evaluated the effectiveness of the drugs from one plate of the library in combination with albendazole, the drug of choice for MDA, using *C. elegans* in the L4 stage as a model. We found three possible compounds of interest, which significantly decreased the health of the worms when administered with albendazole, compared to drug alone. Importantly, these drugs have different mechanisms of action than the ones used for MDA.

Our preliminary follow-up data with one of the three drugs has yielded promising results, showing a dose dependent decrease in worm health at all of the doses in combination with albendazole compared with the drug alone.

4

**The Meek Will Inherit the Earth Sciences: Humble Confidence in Science and Scripture**

David Campbell

What does it mean to be “meek”? Greek philosophy saw *praus* as rightly accepting fate and dealing with it well, not mere passivity. Knowing that it is not fate, but God’s providence, turns “meekness” to confidence in God’s work, not in ourselves. We can work to understand the world, applying that knowledge toward good work, avoiding resignation or resentment, yet recognizing that all is not as it should be.

Why will they inherit the earth? Quietly waiting to seize power may usurp the earth for a while, but it does not produce a lasting inheritance. The better our understanding of reality, the better we can navigate it. Our own reason and intuition can be wrong—we must test ideas against the evidence, whether theological or scientific.

Christianity was not the only factor contributing to the rise of modern science, but it played an important role by emphasizing the need to put evidence over personal reasoning. The turning from Greek philosophical ideas to more physical interpretations of geological features (in part spurred by the practical reality of working-class observations) led to the development of modern geology.

Likewise, simple “scientific” formulas often prove incorrect when tested, and have misled geological research. But if we trust that God has worked everything out, we know that there is a truth to pursue, even as we realize that our grasp of that truth is imperfect.

5

**“Lower Heterobranchia”: An Odd Twist on Snails**

Timothy Campbell

As Job 38–39 shows, there is much that we do not know, understand, or control about creation. This should lead us to wonder at God and his works, and to join with creatures in their praise of him. A lesser-known example where much is unknown and awe-inspiring is that of the “lower Heterobranchia.” It is a grade within Gastropoda, including some of the most obscure and ancient living groups of snails. Currently, it is classified into about 12 superfamilies, 9 extant.

Most of these superfamilies are known from the Jurassic or earlier. The most ancient appears to be Murchisonelloidea, with recognizable extant genera in the early Carboniferous. The only well-known members of the grade are large species in Architectonicidae and the freshwater valvatids. Many of the others have essentially no documentation of physiology or life habits, showing how little is known about even some common and widespread groups of animals.

They can also serve as a gauge for how thoroughly a well-preserved fauna has been documented. As of 2015, there were three species known from the Waccamaw Formation, all architectonicids. Now, there are 21, with all preservable superfamilies except Omalogyroidea represented. Accurate and thorough documentation of species is an important part of doing zoological work as unto the Lord and is also a prerequisite for conservation.

6

**Nature Corrupted: Characterization of a Highly Antibiotic-Resistant Pathogen Isolated from a Suburban Creek**

Clay Carlson

Antibiotic resistance among environmental bacteria is a growing problem and resistance rates tend to be greater near human populations. One such area is the Navajo Creek, a suburban waterway in the southwest suburbs of Chicago that flows through neighborhoods and forest preserves. Among bacteria isolated from the creek, resistance to six different antibiotics has been discovered, and metagenomic analysis reveals a diversity of microbes resistant to each antibiotic.

Water samples collected from numerous suburban waterways over the course of several months indicate that one resistant microbe, *Providencia alcalifaciens*, is widespread, both geographically and temporally. *P. alcalifaciens* is an opportunistic pathogen that can cause diarrheal disease. Whole-genome sequencing of *P. alcalifaciens* reveals a wide variety of resistance genes that allow it to survive in the presence of antibiotics, but the interplay between these genes and the corresponding antibiotics is still being determined.

Bacteria are being grown in the presence of different antibiotics, and gene expression of the resistance genes is measured using qPCR. Understanding the genetic mechanisms behind antibiotic resistance in environmental bacteria such as *P. alcalifaciens* is crucial for developing strategies to manage the spread of resistance in both medical and natural environments.

Growth assays are also being done to determine the bacteria’s resistance in different concentrations of antibiotics. The species has been shown to exhibit varying susceptibility to a range of  $\beta$ -lactam antibiotics, including oxacillin, amoxicillin + potassium clavulanate, and carbenicillin. The combination of amoxicillin and potassium clavulanate, a  $\beta$ -lactam/beta-lactamase inhibitor, showed superior antibacterial activity compared to amoxicillin alone. Overall, this project offers ecological and genomic analysis of a highly resistant microbe and potential pathogen that has been isolated from local waterways.

7

**“Creation’s Calling”: A Creative Expression to Inspire the Younger Generation**

Amaya de Vin and Jennifer Boone, students; Heather Prior, professor

Faith and science integration is essential to the Christian journey, but resources on this combination for the younger generation and general public are limited. There are many academic resources on faith and science, for example the *ASA Perspectives on Science and Christian Faith*, but they are not always available or appealing for young people or those who are not pursuing a degree in science. “Creation’s Calling” hopes to provide a creative and enticing accessible resource.

The dual mission of “Creation’s Calling” is in its name: every natural process of creation is *called* to worship God; and while it suffers from environmental degradation, creation calls out for human stewardship. Currently, “Creation’s Calling” is being put into *The King’s University newspaper, The Chronicle*, as a column. The column invites its readers to think about the integration of faith, science, and stewardship.

In the future, “Creation’s Calling” hopes to grow into a creative mosaic of reflections and hopeful stories of creation restoration. Ideally, the audience will experience a comprehensive series of scientific topics interwoven with a Christian restorative worldview. The format might look like a magazine, comic, visual gallery with a digital format to reach larger audiences. A comparative example is “The Bible Project,” used in many classroom settings to discuss the Bible.

“Creation’s Calling” will provide an accessible tool for the classroom and beyond to show that science can be integrated with a faith perspective. “Creation’s Calling” is a community-based project and invites feedback and partnerships to further advance its vision.

8

**Sir Isaac Newton: Scientific Hero and Religious Heretic**  
Benjamin B. Ding

Isaac Newton is often heralded as an early scientific pioneer who saw no contradiction between his scientific work and religious beliefs. He spent considerably more time writing about theology than he ever did on mathematics and physics.

Contrary to popular belief, Newton was not a Christian. Rather, he was an Arian—a heretic who held to non-Trinitarian doctrine, erroneously believing that Christ the Son was created by God the Father.

Furthermore, Newton believed that the Bible had been corrupted by the Church of England, and he saw himself as one of history’s few “true practitioners of biblical religion,” alongside figures like Abraham and Moses. This stemmed from his belief that ancient sources of wisdom were untainted relative to the “modern versions” prevalent during his time. A prominent example of this includes Newton’s emphasis on the geometric language employed by the ancient Greeks, compared to his open disdain for the increasingly symbolic language used in the mathematical papers of his day.

This poster will examine how Newton’s unparalleled success in the physical sciences bestowed on him an overconfidence in his ability to interpret biblical texts and Christian theology in his misguided quest to restore Christianity. Furthermore, Newton’s transition from clandestine Arian to full-blown heretic will be examined from the cultural and religious milieu of 17th- and 18th-century England.

9

**Liturgy and the Laboratory: Practicing Science as Worship Through Course-Based Undergraduate Research**

J. Elizabeth Doan

*Churches and laboratories* describe both physical locations and communities oriented around ritual practices. Similarly, *religion and science* are both *bodies of knowledge* and ways of knowing. I propose that these analogical relationships between places of worship and places of inquiry extend to the development of liturgy, such that laboratories can become worshipful places.

This presents novel opportunities for joy in scientific praxis through course-based undergraduate research experiences (CUREs). CUREs provide formative opportunities to developing scientists, in contrast to conventional “cookbook” laboratory instruction that emphasizes information and isolated skills. In the context of Christian higher education, iterative laboratory work becomes liturgy and can be applied to novel scientific questions.

For the CURE presented here, students developed a cost-effective and time-efficient phagocytosis assay to test claims about the anti-inflammatory efficacy of essential oils. The semester culminated in proof-of-concept experiments wherein the spectrophotometric assay developed by the class proved to have comparable efficacy to well-documented microscopy-based methods.

The liturgical nature of the laboratory work enabled students to move deeper into laboratory practice; this familiarity promoted increasing depth of thought about this specific CURE and about the practice of science in general in ways analogous to Christian liturgical practice.

In future CUREs, I will explicitly analyze the liturgical nature of scientific praxis with students. This instructional model not only connects specific scientific topics to Christian spiritual formation but also demonstrates principles of laboratory-based worship to the next generation of Christians studying creation through the biological sciences.

10

**Wisdom Science and Food to End Hunger**  
Christina Dokter

In the Bible, God provided food for the hungry. In fact, in Luke 9:13, when the disciples told Jesus to send the crowd away so that they could eat, Jesus said, “They do not need to go away. You give them something to eat” (Luke 14:16 NIV). Increasingly, this command is becoming more difficult to obey. Government funding cuts, climate extremes, wars, and social conflict/wars have all contributed to the millions of people on the edge of starvation.

Today, some 66 to 80 percent of starving people are caught up in conflict or war. From Sudan to the Gaza Strip, conflict/war turns hunger into a weapon.

Wisdom Science will become a non-profit to end hunger using science. The organization will advance undiscovered food science, empowering the next generation of innovators, through education, to invent Bible-inspired and other food sources that are easily portable to/by refugees in conflict/war zones.

More specifically, Wisdom Science aims to create food that is inspired by how God gave food to his people—with manna and with the feeding of the 5,000. The latter started with five loaves of bread and two fish which were broken and grew back, broken and grew back (Luke 14:20 NIV). How about a sweet potato that grows back when cut in half? Or how about manna (Exod. 16:31 NIV) delivered via drone? You might think this is far-fetched, but scientists are genetically engineering foods such as with CRISPR-cas9, manipulating synthetic biology to create new biological systems, and finding uses for artificial photosynthesis. Christians must also use science to follow God’s command to “give them something to eat.”

Come to my poster to find out how Wisdom Science will end hunger using Bible-inspired and other science.

11

**Tracking Microbial Threats: Citizen Science Monitoring of Arizona’s Impaired Waters**

Victor Adrian Estrada Leon, student;  
Berenise Charlton, professor

Arizona’s rivers are essential to both human communities and ecosystems, providing critical water resources for drinking, recreation, agriculture, and wildlife. However, many of these waterways are impaired due to microbial contamination, posing risks to public and environmental health. This study focuses on the continuous monitoring of *E. coli* levels in impaired waters under the Clean Water Act, aiming to assess water quality trends and potential contamination sources.

Monthly water samples are collected and analyzed for *E. coli* and total coliform at three sites: Phon D Sutton (Site 1) on the Lower Salt River, South Canal (Site 2), and North Canal (Site 3). Preliminary data from samples collected between October 2024 and January 2025 indicate elevated total coliform concentrations (> 2419.6 MPN) at two sites, while *E. coli* levels have ranged from 9.7 MPN to 410.6 MPN across all locations.

The preliminary findings suggest potential contamination from run-off or localized sources, highlighting the variability of microbial water quality. Overall, these fluctuations highlight the dynamic nature of microbial water quality, underscoring the necessity for continued volunteer-based monitoring to identify contamination sources and protect public and ecological health.

By engaging citizen scientists and adhering to ADEQ’s Citizen Science Program-Arizona Water Watch protocols. The data collected can guide management decisions, supplement agency-collected information, and foster a collaborative approach to sustaining Arizona’s water resource.

12

**Communicating Faith Values Through Technology: An Examination of Chinese American Churches' Website and Mission Statements**

Elaine Fung

This study explored the mission statements of Chinese American churches' websites from the top ten cities by the Chinese population in the United States: New York, Los Angeles, San Francisco, San Jose, Boston, Seattle, Washington, Chicago, Honolulu, and Houston. The purpose is to understand (1) how churches utilize websites to communicate their mission publicly and (2) what their mission statements communicate about their church. The sample included the following denomination families: Methodist, Baptist, Lutheran, Presbyterian, Pentecostal, and Episcopal.

This study adapted Darius Benton's methodology that examined the mission statements on websites of traditionally Black Methodist churches in the top ten cities for African Americans in the United States through a qualitative textual analysis. A total of 43 Chinese American churches' mission statements were examined through a word frequency test and thematic analysis.

The findings provided insights into Benton's methodology, Chinese American churches' use of websites and mission statements, and what the Chinese American church's mission statements communicate. This confirmed several findings from Black Methodist churches, with eleven most frequent words and eight thematic constructs overlapping.

The mission statements from this and Benton's study seem to indicate that religious organizations prioritize Christian values more than the specific denomination or demographic values. Therefore, a website and mission statement could be a way for churches to strategically cultivate their current members and gain the attention of prospective members. Future research can continue to explore Benton's call for more denominations and demographics.

13

**Type 1 IFN Decreases Infectivity, but Promotes Spread of *Shigella Flexneri***

Ellen B. Gouws, J. Poo, and S. M. Payne

*Shigella flexneri*, a gram-negative bacterium, causes the diarrheal disease, dysentery. Bacterial and viral co-infections frequently occur in diarrheal illness and have been found to occur with *Shigella* infection. While the mechanisms of infection with *Shigella* have been studied extensively, the innate immune responses elicited during infection are less understood.

Type I interferon, e.g., IFN $\beta$ , an anti-viral innate immune response, has been shown to influence infection or invasion of several bacterial pathogens, including *Shigella spp.* We determined the effect of type I interferons on both the initial invasion and cell-to-cell spread of *S. flexneri* in cell monolayers. Although IFN $\beta$  reduced invasion of *S. flexneri* in Henle-407 cell monolayers, it promoted the spread of the bacteria to neighboring cells following the initial invasion.

Treatment of *S. flexneri*-infected Henle cells with IFN $\beta$  post-invasion resulted in larger plaques in the monolayer, which is a measure of spread of the bacteria to adjacent cells. Furthermore, IFN $\beta$ -treated Henle-407 cells had increased expression of genes encoding adherens junction proteins, including e-cadherin, which is required for spread of the bacteria.

When examined microscopically, the IFN $\beta$ -treated Henle cells showed alterations in the actin cytoskeleton and cell-cell contacts. Spread of *S. flexneri* into adjacent cells requires the recruitment of host cell actin and the formation of protrusions into neighboring cells.

An increase in e-cadherin in response to IFN $\beta$  promotes the spread of *S. flexneri*, suggesting that viral co-infections may influence *Shigella* pathogenesis. The results of this study give further understanding of the depth of God's creation and diseases that occur.

14

**The Remarkable Timeline of Apologetics**

Jim Green

Christian apologetics has seen significant advancements in the modern era to be illustrated in three graphical timelines:

A timeline of modern science and technology from 1600 to the present illustrates the spectacular and ever accelerating success of science. That success affirms three founding assumptions of modern science which are rooted in the Christian theology of creation:

1. Nature is regular, predictable, and law-abiding.
2. The laws of nature are accessible to and knowable by humans.
3. Study of a contingent creation requires empirical methods.

As noted by Alfred North Whitehead, "Faith in the possibility of science ... is an unconscious derivative of medieval theology."

A timeline of two centuries of archaeological discoveries, 1800 to the present, affirms the historical credibility of the Bible. Not a single artifact has been found that puts the biblical record into question.

A timeline of specific developments in mathematics, physics, astronomy, and cosmology from 1900 to the present provides a sketch of the journey of science to the conclusion that the universe is finite in age. This resolves the age-old question whether the physical universe is eternal or is of finite age. As one of the discoverers of the Big Bang noted, "Astronomy leads us to a universe created out of nothing."

These developments lead, perhaps surprisingly, to the conclusion that here in the early 21st century, Christianity has "the strongest rational foundation for faith that has come to light in human history."

15

**Culturing Live Yeast from Old Testament Times**

Elise Grosdidier and Josie Grosdidier, students; Julie Woodman, professor

The use of *Saccharomyces cerevisiae* in making food such as bread and wine dates back to Old Testament times. This yeast species is, in fact, considered the oldest microorganism to be used in food production. Because of its rich presence throughout history, understanding more about these ancient species can provide a window into the biological past of creation.

This ongoing study aims to isolate, culture, and study ancient yeast species preserved through archaeological dig sites. Previous findings indicate that wild yeast have been successfully cultured from similar archaeological environments.

As a proof-of-concept experiment, and in preparation for larger scale yeast isolation, an ancient artifact piece was first exposed to an active wild yeast culture and then removed from the culture and covered in dirt to imitate a natural burial, similar to what could be found at an archaeological dig site. A rock that was not cultivated in yeast was used to control for the presence of wild yeast in the current environment.

Our findings indicate that yeast present on the ancient artifact at burial can, in fact, be re-isolated weeks later. There remains the question, however, as to whether a largely extended timescale will impact these findings. Though further analysis is required, this data begins to hint at the successful methodologies for isolation of wild yeast from ancient archaeological sites and provides encouraging data for future experimentation of ancient wild yeast.

16

**How Christianity Could Strengthen the Measurement of Well-Being: Navigating Among Contexts and Internal Dimensions**

**Felipe Aníbal Gutiérrez Antinopai**

Diverse perspectives contribute to the evaluation of well-being. As our understanding of well-being evolves, there is a growing recognition of the holistic nature of human experience, encompassing not only economic and psychological dimensions but also spiritual and moral aspects. Over the years, various constructs have been employed to operationalize well-being.

This poster critically reviews existing well-being measurement approaches, exploring opportunities for enhancement through the integration of Christian principles. As conventional metrics often overlook spiritual and moral dimensions of human experience, this discussion aims to shed light on how Christianity can fortify and enrich our understanding and measurement of well-being.

Commencing with an assessment of current well-being metrics and their limitations, this poster presentation underscores the need for a more comprehensive framework. The incorporation of Christian perspectives is then examined, focusing on key concepts such as pluralism, tolerance, and justice and the four spheres of society that were developed by Abraham Kuyper: personal, institutional, family, and local.

Summarizing, this poster presentation posits that Christianity can significantly contribute to the strengthening of well-being measurement. By acknowledging and incorporating core tenets of Christian faith, we aim to develop more nuanced and inclusive frameworks, offering a comprehensive understanding of what it means to thrive as individuals and communities.

17

**The Light For Liberia Project: Energy for the Poorest of the Poor**

**Charles E. Hunt and Javier Rincon-Romero**

The Republic of Liberia, the first republic in Africa, is the ninth-poorest country in the world. This English-speaking nation emerged from a fourteen-year civil war in 2003 and has struggled to reconstruct ever since.

Only 19% of the population (approximately 5 million) have electricity, and virtually all of that is in the capital city of Monrovia, with its 1½ million people. Among the rural majority of the land, an average of 5% have access to electricity.

Because of the dense equatorial landscape, transmission of electricity over a high-voltage, high-tension-line grid is impractical. However, off-grid solar power is both realistic and economically practical for residential and business use, and microgrids for small communities and institutional installations is a viable solution. The limitations in Liberia at present are trained manpower for installations and solid business skills for long-term support of installation businesses.

The Light For Liberia Project, a four-year effort centered at African Bible College University (ABCU) in rural Yekepa, Liberia, commenced in July 2024, and is organized by Charles Hunt and the Business School leadership at ABCU.

This four-phase project started in the fall 2024 semester, taught by Hunt, establishing a two-course curriculum within the Business School. It has educated 22 students and has already launched one installation business.

Improving health and quality of life by using available technology is one practical way to share Christian love in this very needy environment.

18

**An Engineer's Work and Worship in Retirement**

**William Jordan**

Relating Christian faith to our work is important to the members of the ASA. This topic overlaps the concepts of the growing Work as Worship movement.

When a Christian engineering professor retires, the opportunities to stay intellectually and spiritually active changes. For example, the author no longer goes to traditional research conferences. However, he remains active in professional societies that relate to teaching and learning. It also allows more time to serve the profession. Serving in this way is critically important as younger academics may not have the time to do this.

The author recommends continuing involvement with his professional society. The author has remained active as a volunteer with engineering accreditation. He can therefore give back to the profession based on his knowledge and experience. For a Christian, this also allows for a chance to stand up for Christian principles in the professional society.

This extra time allows the retiree a chance grow spiritually by having more time to think through some issues carefully. This extra time makes it easier for the retiree to do teaching and other volunteer work in the church. This can help the church members grow spiritually and also learn more about the relationship between faith and science.

By carefully thinking through these topics, it is possible to continue to have a major impact (both spiritually and professionally) while in retirement.

19

**Theological Perspectives on Faith and Science: Insights from Protestant Ministers in the Southeastern U.S.**

**Joyce Lawson and Emmalyn Browns, students; Joshua A. Owens, professor**

In both religious and educational spheres, the relationship between faith and science is an ongoing issue frequently marked by a perceived conflict between the two. This study investigates how theological mindsets potentially contribute to these perceptions by surveying ministers from various Protestant Christian denominations in the Southeastern United States.

Our research specifically explores interpretations of Genesis 1–11, views on human origins, and attitudes toward the compatibility between faith and science. Utilizing Ian Barbour's framework for categorizing faith and science perspectives, the study examines the theological, cultural, and denominational factors potentially shaping the theological outlooks of pastors/ministers.

We report clear distinctions between different denominations as well as several cultural factors influencing a pastor's perspective on faith and science. From this data, we hope to identify discrete approaches to move the dialogue on faith and science forward for pastors as these individuals play an influential role in shaping congregational views.

Altogether, we hope the data from this study will contribute to the ongoing faith and science conversation and will encourage greater integration of faith and science across diverse Christian contexts.

20

**Rusty Blackbirds May Use Predator Satiation as a Survival Strategy. Could This Be a Strategy for Christian Communities?**

**Xavier Martin, Brian Hibbard, and Samuel Ward**, students;  
**Oscar Gonzalez**, professor

In Anderson, South Carolina, a species of migratory bird, the Rusty Blackbird, roosts in a large bamboo patch with members of its flock. A species of predatory bird, the Red-Shouldered Hawk, has been observed hunting these birds in their roosting spots. It has been observed that these blackbirds will not fly away in response to the hawk killing a flock member.

Our research team raised the question of whether blackbirds exhibit predator satiation as a mechanism to protect them from predators.

We used speakers to mimic the hawk's screech, and sticks or large rocks to simulate the hawk's strike near the roosting blackbirds. The number of birds flying away in response was recorded.

Results indicated that as blackbird groups increased in size, the total percentage of birds flying away from the simulation decreased.

We see a stark connection between our experiment's results and Christian communities. God created humans as social creatures relying on one another to hold each other to the Christian faith.

Large Christian communities are resilient from the attacks of sin and the enemy. Though one community member may fall into the temptation of sin, larger communities have more people holding each other accountable.

Doing environmental research allowed us to understand God's design in the complex behavior of birds when they interact with one another; we saw the birds as our teachers (Job 12:7).

21

**Synthetic Strategies to Break the C<sub>3</sub>-symmetry of Tris(amido)amine Ligands**

**Marilyn Naeem**, student;  
**David R. Manke**, professor

Modifying the local environment around a metal center influences its reactivity, enabling both thermodynamic and kinetic control in catalysis. In addition to the primary coordination sphere, controlling residues outside the range of metal coordination—within the secondary coordination sphere—can significantly affect substrate binding and reactivity, such as by influencing substrate orientation. The tris(amido)amine, or tren, ligand is a well-known C<sub>3</sub>-symmetric, trianionic, tetradentate structure.

Advancing new strategies to break this C<sub>3</sub> symmetry expands the versatility of trens, allowing modifications to the ligand's symmetry (from C<sub>3</sub> to C<sub>s</sub>), its charge, the steric directionality, electron donation properties, and the ability to incorporate multiple functionalities in the secondary coordination sphere.

The synthesis, spectroscopic characterization, and reactivity of a new series of tren-based ligands will be presented. This ligand's adaptability through two novel symmetry-breaking strategies—based on carbon-nitrogen coupling and copper(II) catalysis—has been demonstrated, with analysis using NMR and X-ray crystallography.

22

**Euthanasia: Malevolence Masquerading as Mercy**

**Jessica Neamtu**, student;  
**Daisy Savarirajan**, professor

Throughout history, societies have been called to answer ethical questions. One question has shown to be recurring every few generations. Euthanasia beats at our societies' door and humanity must answer. Is a premature death mercy or malevolence? Are there certain lives not worth living? And if so, who has the right to determine which lives are to be extinguished? One cannot avoid weighing these questions. For euthanasia is a social, not a private, act.

This research will delve into the statistics, cultural and medical changes, and the detrimental ramifications of euthanasia in Canada. The United States and Canada are not only geographical neighbors but are also cultural neighbors; they often follow the trend the other sets. Looking at Canada's experience with euthanasia offers a probable indication of what the United States will experience if it accepts and normalizes euthanasia.

This research seeks to increase awareness of the statistics associated with euthanasia, cultural changes, and medical changes due to the acceptance and implementation of MAID, and other such detrimental ramifications of euthanasia in Canada.

Another aim is to bring awareness of the dangers of euthanasia to the United States's societal, medical, legislative, moral, and ethical structure. And last, but not least, a hoped-for contribution is a greater respect for the value of human life and an increase in the pursuit of decreasing suffering rather than eliminating the sufferer.

23

**Missional Internships Embedded in STEM Education at Universities**

**Andrew Park**

Faith integration in the social and humanities disciplines is often seen as more natural and appropriate than in the fields of science, technology, engineering, and mathematics (STEM). However, Christian educators in STEM disciplines can effectively practice faith-influenced pedagogy in their teaching. This includes incorporating faith into classroom settings, language use, behavior, the role of time, creativity, and power dynamics.

I argue that STEM education can be further enriched by offering students missional internships outside the classroom. While industry co-op and internship programs are valuable, missional internships provide students with opportunities to apply their Christian faith alongside their STEM knowledge and skills. Examples include serving in science, math, and coding camps or developing applications and websites for churches and mission organizations. This aligns with Jesus's words, "... whatever you did for one of the least of these brothers and sisters of mine, you did for me" (Matt. 25:40, NIV).

In this poster presentation, I will share examples of missional internships offered at Trinity Western University and highlight students' experiences in these internships.

24

**Origin or History: Clarifying Perspectives on the Big Bang**  
**Arnold E. Sikkema**

The Big Bang is often presented as a scientific explanation of the origin of the universe, both in secular discussions and within Christian circles. Many Christian apologists emphasize a finite past as supporting evidence for a creation event and thus proof for the existence of God, often reinforcing this with fine-tuning arguments.

I will argue for the importance of distinguishing between origin and history, explaining how the theory addresses the history of the cosmos but not its origin. Furthermore, I will explain why a finite past is neither a definitive scientific conclusion nor a theological necessity for a robust doctrine of creation.

Finally, I will highlight how we can praise and glorify God for both origin and history, each in their own way, that is, for the initial act of creation and for the ensuing cosmic story.

25

**Faith and Bioethics Education: Exploring Christian Bioethical Themes for Teaching Undergraduate Biology**

**Aeisha Thomas and Kathleen Vaughan**

Ethics is an expected component of undergraduate biology curriculum, as highlighted by the BioSkills Guide. The goal of this study is to determine whether Christian principles can be integrated into typical biology curricula. To investigate the feasibility of applying Christian principles in undergraduate biology courses, deductive content analysis was employed, using the ethical beliefs scale for Christian students (CEBS) developed by Heller and Phillips as the reference for comparison to two ethical frameworks and introductory biology content standards.

While CEBS demonstrated more overlap with the standard four *Principles of Biomedical Ethics*, the Responsible Conduct of Research framework showed more limited alignment; the latter is unsurprising given CEBS's focus on human bioethics. Specific references to faith were, of course, absent from both frameworks; however, concepts such as divine moral authority could still be applied to the biology curriculum.

Further comparison of CEBS with recently published standardized introductory biology content learning objectives indicate that while there is no overlap with CEBS, that Christian bioethical themes (e.g., value of human persons) could be applicable to a subset of the curriculum (e.g., genetics).

Overall, our analysis indicates that while Christian themes from CEBS were absent or limited in the frameworks (ethical and content), they are still relevant and can be incorporated in undergraduate biology courses. It is hoped that sharing how Christian bioethics can be integrated at the undergraduate level will be helpful to biology faculty.

26

**Gobekli-Portasar (~9,700 BC) Evidence for a Noachian Civilization?**

**Henry D. Voss**

Gobekli is in the Taurus foothill mountain range in Turkey and is a surprisingly advanced civilization—7,000 years older than the pyramids. Gobekli features up to 20 oval sanctuaries with 10 to 20 ton monoliths erected with precise alignments into bedrock and some with meaningful megalithic pictogram and writing symbols.

In the oldest D-sanctuary, the pictograms possibly show Noah's ark with rain above for 40 days counting and a flood with waters lasting 365 days counting. The hypothesis that Gobekli is a biblical Yahweh/Noah monotheistic civilization was central to its peaceful culture (*Homo-Imago Dei*), inspiring megalithic sanctuaries, entrepreneurial networking, and feasting that could have sparked the widespread Neolithic Revolution and explain its long lifespan of 1600 years. If true, this would magnify Genesis and the flood accuracy being near the Holocene onset at 9,700 BC when glaciers were melting rapidly, and humans were thought to be primitive hunter gatherers.

The site was found by the first chief archeologist Klaus Schmidt in 1994, and he identifies Gobekli as a "cathedral on a hill" and a "pilgrimage destination." The impressive monuments were aligned with the north pole at that time and are consistent with Earth's 26,000-year precession and true polar shift.

A possible interpretation of the mysterious Belt and Broach symbols writing on the anthropomorphic central large pillars are consistent with the ageless creed phrase, "In the beginning eternal God created the Heavens and Earth." It could be a paradigm shift.

27

**Transgenderism Through the Lens of Neuroscience**

**Steven J. Willing**

Beginning in the mid-20th century, there was vigorous disagreement about whether sex differences in personality and behavior derive from nature, nurture, or some combination. By the mid-2010s, it was firmly established that male-female brain differences exist even before birth and are further differentiated in childhood via hormonal effects on gene expression.

These discoveries do not mean it is at all straightforward to differentiate male from female brains *in vivo* using advanced imaging techniques. The highest accuracy to date has been achieved by applying machine-learned algorithms to functional MRI data.

The case of transgenderism presents an interesting question. Using advanced imaging, is it possible to determine whether the brain of a transgender individual more closely matches their sex or their gender identity?

In this review, highlighting the most recent neuroimaging investigations of transgender subjects, we show that while subtle variations often emerge between trans and cis-gender subjects, in virtually every study, transgender brains align more closely with their sex rather than their gender identity. This was to be expected, because sex-differing regions of the brain are mostly unrelated to regions of the brain involved in identity formation, particularly the medial prefrontal cortex, a part of the default mode network.

Because identity formation and sexual differentiation involve different brain networks, it is possible for a dichotomy to emerge. Unlike sex, however, there is little to no evidence that identity is biologically predetermined.

As of early 2025, the historic Christian understanding of a male-female binary remains scientifically valid.

28

**From Scripture to Strategy:  
Bridging Theology and  
Stewardship Science for  
Organizational Growth**

Ray'Chel Wilson

This theoretical analysis proposes an 8-element stewardship checklist derived from structural parallels between Paul's Epistle to the Romans and modern nonprofit case statements. Through exegetical examination of the "living sacrifice" concept in Romans 12:1-2, the study develops a framework translating Pauline theological principles into actionable development practices for faith-based organizations.

The methodology employs analogical reasoning to "rhyme" ancient epistolary strategies with contemporary organizational challenges, particularly in Black church contexts. Key components include body-as-temple stewardship models, koinonia-based communication protocols, and sacrificial giving metrics.

The framework demonstrates how the structure of Romans mirrors modern formal case statements, providing a biblically grounded approach to volunteer engagement, cross-ministry communication, and resource development. Designed for implementation at Metropolitan Baptist Church in Tulsa, Oklahoma, this work bridges practical theology with organizational science while honoring historical and cultural contexts.

The study contributes to both theological and organizational literature by operationalizing spiritual principles for sustainable church development.

29

**Healing Hemlock:  
Therapeutic Potential of  
Phytochemicals**

Elijah Winslow, student;  
Daisy Savarirajan, professor

Historically, plants have been used as remedies to sustain human health and well-being. Not to be confused with Poison Hemlock, Eastern Hemlock (*Tsuga canadensis*) is a non-toxic, evergreen conifer, used by native Americans as antiseptics, cold medicines, and remedies for rheumatism and arthritis. Phytochemicals are natural plant products and exert antimicrobial activities via different mechanisms. Alkaloids, terpenes, and polyphenols are the most abundant naturally occurring phytochemicals in Conifers. In this study, Eastern Hemlock needle extracts were investigated for their antimicrobial potential, to address the urgent need for safer alternatives, and effectively combat bacterial resistance in the post-antibiotic era.

Methanol, ethanol, and hexane extracts of Hemlock needles were prepared using solvent: water (1:1, v/v). The Kirby Bauer disc-diffusion method was used to evaluate the antibacterial activity of the extracts against Gram-positive bacteria and Gram-negative bacteria. Methanolic extracts produced Zones of inhibition against several strains, indicating varying degrees of antibacterial activity. The preliminary phytochemical screening of the Hemlock extract and its potential antimicrobial activity will be discussed in the poster presentation.

From showcasing God's creative design to teaching spiritual truths, plants represent growth and flourishing. As science continues to discover the biblical benefits of plants, we gain a deeper appreciation for their enduring value as God's provision to sustain, heal, and restore life.

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- Plant With Purpose
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- McDonald Walker Foyer ..... Registration (Friday evening–Monday afternoon)
- McDonald Performance Hall ..... Devotions, Worship, Parallel sessions A, Plenary Sessions
- McTavish Atrium ..... Beverage Breaks, Exhibitors

#### C. Leprino Hall

- Room 102 ..... Classroom
- Room 104 ..... Classroom
- Room 170 ..... Classroom
- Room 202 ..... Classroom
- Room 204 ..... Classroom
- Room 206 ..... Classroom

#### N. Anschutz Student Center

- Dining Commons ..... meals
- Great Hall ..... meal meet-ups
- South Patio ..... social events

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