



EXSEED™

Excellence in STEM Experiential Education

2014 EXSEED Conference Highlights

Location and Dates

- Loma Linda University – Centennial Conference Center
- June 23 to 27, 2014

EXSEED Higher Education Partners: 7

- Andrews University*
 - Kettering College
 - La Sierra University
 - Loma Linda University – host and facilitator
 - Pacific Union College*
 - Union College
 - Walla Walla University
- *Partners not able to participate in the 2014 EXSEED Conference*

Conference Expenses and Requirements

- Free:
 - Food and lodging
 - Transportation to and from the Ontario airport to LLU
- Requirements:
 - Teachers had to apply and commit to participate in EXSEED during the school year and not just during the conference.
 - \$50 registration fee

K-12 Teachers and Administrators: 100

Union/District	Number of Participants
Columbia Union	6
Curacao & Bonair	25
Jamaica	5
Mid-America Union	2
North Pacific Union	14
Pacific Union	22
SDA Church in Canada	4
Southern Union	10
Southwestern Union	4
Public Schools	8
Total	100

Union/Other	Number of Participants
SDA K-12 teachers	76
SDA K-12 administrators	7
SDA conference representatives	3
SDA higher education professor/administrator	1
Public School District K-12 teachers	13
Additional K-12 Teachers who attended only the 2 days of workshops	52

EXSEED Presenters: 56 in 62 sessions

Institution/Org.	Presentations	Workshops	Tours
EXSEED Alumni		5	
Apple	2		
La Sierra University		3	
Loma Linda University	13	27	2
Union College		1	
Walla Walla University		1	
Adventist academy teachers (active or retired)		3	
Adventist public school teacher	2		
STEM consultant	5		

iPad Air

- Each K-12 teacher was given an iPad Air with the following apps and accessories:
 - **Pages** – develop word processor documents compatible with MS Word
 - **Keynote** – develop presentations that are compatible with MS PowerPoint
 - **Numbers** – develop spreadsheets compatible with MS Excel
 - **iMovie** – produce short instructional videos
 - **GarageBand** - create copyright-free music for instructional videos and to create new music

- **Apple Care+** s protect and support iPad with a three year warranty that includes up to two accidents per year so teachers will feel ‘safe’ to have their students use the iPads as tools for learning in the classroom.

- **Goal for iPads:** To empower teachers and students to use iPads as teaching and learning tools in the classrooms. Many of the teachers have little or no technology in their classrooms.

- **iPad Agreement:** In accepting the iPad, each teacher agreed to
 1. Participate in EXSEED
 2. Have their students produce at least one instructional video to share with EXSEED during the school year

3. Use the iPad for instructional purposes with their students.

- **iPad Instruction:**
 - After giving the teachers their iPads, an Apple engineer gave an “iPad 101” session about how to use them. Tech support was provided throughout the conference all week until 9 pm Monday through Thursday, and until 2 pm on Friday.
 - An Apple Education Specialist demonstrated many apps specifically useful in classroom and education situations.
 - iPads were used throughout the conference in a variety of ways. Many presenters had teachers download specific apps as tools for their sessions’ topics.

- **Group Instructional Video Assignment:** Teachers divided themselves into groups of 3-4 to develop a short instructional video to be shared with the full group on the last day of EXSEED. The videos were shot and produced exclusively on their iPads. The goal was to prepare teachers to teach their students how to develop short instructional videos to teach their peers or others. Each teacher’s students will produce at least one video to share in the EXSEED portal. We all learn best by teaching someone else!

Teachers’ Reactions and Comments

Participants’ Major Complaint and Comfort Zones

- The major “complaint” was “I wish I could have more time so I could take more workshops.”

- The conference was designed to stretch teachers beyond their comfort zones. In spite of this, teachers were engaged and participated.

Hands-on Sessions, Labs, and Workshops

- Tuesday & Wednesday were full days with 26 half-day or full-day workshops. Some workshops were repeated so more teachers could participate.

- Some comments from teachers about hands-on sessions:
 - “The presenters were very professional and all of them loved what they were doing. / The timetable was well organised (a little hard at the beginning but I got used to it). / Worship time - excellent - the right people, the right theme.”

 - “I benefitted from attending the S.T.E.M. Conference and am grateful for the opportunity to participate. It was very well organized; informative; the scheduled events flowed well; and we were kept on a reasonable schedule. All of the speakers were exceptional, and I especially appreciated the keynote speaker, Dr. Charles McMillan. / / Readily accessible healthy snacks and plenty of bottled water were helpful. So were the consistent meal times and stretch/walking breaks. / / It was great meeting others from across the U.S. and other countries! / / Working in groups for projects was a stimulating challenge and very practical. It might be even better when teamed up with people teaching similar age groups. / / Touring the Medical Simulation Lab was inspiring!”

- “The interaction between the instructors and teachers was fantastic. Enjoyed the relaxed and professional atmosphere. Learned too much to tell.”

Teachers’ Comments on What EXSEED Meant to Them:

- Although the days were long, I didn't mind it. / -- I loved the worship time first thing in the morning, the workshops and presentations were wonderful, and there were breaks in between. / -- I know the conference was basically paperless, but it would have been nice to have a paper campus map provided on Tuesday and Wednesday to make it easier for us to find the workshops. I know there were "tour guides" available, but I never found one to the workshops I was going to. / -- Keep the "small group" feeling by not exceeding 100 teachers in each cohort. It's much easier to collaborate with others that way. / -- Keep EXSEED open and mixed across grade levels. I loved hearing the astute academy science teachers share and appreciated their intelligent questions at the end of the presentations -- some of which were over my head! :-)/ -- THANK YOU for Dr. Davis's presentation about adjusting and pressing on when things don't go well. He was very inspiring to me! / -- THANK YOU for the comfortable hotel room (I was at La Quinta) / -- THANK YOU for the gluten-free vegan options at meal time. I was able to be healthy all week! / -- THANK YOU for the I-Pad! I'm having fun learning to navigate on it and discovering its potential in my classroom! / -- THANK YOU for the myriad of choices in workshops. I also liked that some were allotted more time (1/2 day sessions, whole day sessions) because it was necessary for what was being taught. / -- THANK YOU for reminding us of our value as a significant piece of the whole
- “I feel that LLU, sponsors, presenters, IT people, truly cared and wanted to support those of us who are in the trenches. I made connections with other teachers, master teachers, and mentors to help in this mission we call Adventist education. STEM is not limited to science, technology, engineering and mathematics, but is an interdisciplinary approach to curriculum. Step outside your comfort zone and connect with people who can help. “

“The best thing of this week is the opening of my mind to all the possibilities that are out there. Thank you for being a part of my renewal for this next year.”

An increased love for science and math, new friends from across the globe, and a reaffirmed determination to lead my students to love the Master Scientist, Engineer, Mathematician, and Technological Guru through providing more varied opportunities to study His creation.

- “The morning services, beginning with God were very inspiring.”

Teachers’ Concluding Take-Away Thoughts on STEM, Religion, and God:

- “From the morning services the importance of the plateau on which we begin our day with God. From the workshops the experience working with worms, the hands on working with science, meeting new friends, and the blessing visiting Loma Linda University. I am proud to be an Adventist and to know that I am part of God big family waiting and working in his field till He appears in the clouds of heaven.”

“I have new ideas of how to encourage my students to strive for excellence in the sciences through the workshops I participated in / / I have a better understanding of the current challenges facing Adventist education in relation to science education. .”

Being understood and cared for. It's amazing to see dedicated people coming together to learn from each other and simply fellowship. I feel blessed by my experience and have let many fellow educators know about this great opportunity.

Workshops

The following pages cover the workshop titles, descriptions, presenters, and schedule. It was the workshops list that participants used when registering. Workshop notes:

- **Closed** – maximum enrollment was reached
- **Cancelled** – due to minimum enrollment not reached
- **Twice** – some workshops were offered two times

EXSEED Website

- <http://www.llu.edu/exseed>



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2014 Conference: The STEM of Healthy Living

Time	Monday - 23 rd	Tuesday - 24 th	Wednesday - 25 th	Thursday - 26 th	Friday - 27 th
	7:30-8:00 AM Check-in , Centennial Complex - 4 th Floor	7:15-7:45 AM Check in for Workshop-only Participants , Centennial Complex - Damazo Amphitheater	7:15-7:45 AM Check in for Workshop-only Participants , Centennial Complex - Damazo Amphitheater	7:30-8:00 AM Conference room open	7:30-8:00 AM Conference room open
	8:00-8:15 Welcome & Introduction: Ron Carter Welcome: Richard Hart	7:45-8:00 Welcome & Orientation: Ron Carter	7:45-8:00 Welcome: Ron Carter	8:00-8:15 Welcome: Ron Carter Announcements: Doug Havens & Marilyn Eggers	8:00-8:05 Welcome & Prayer: ~Ron Carter
	8:15-8:30 Worship: ~Ron Carter	8:00-8:15 Announcements: Doug Havens &/or Marilyn Eggers	8:00-8:15 Announcements: Doug Havens &/or Marilyn Eggers	8:15-8:30 Worship: ~Carla Gober Park	8:05-9:00 Earth & Biological History: New Technologies & New Insights ~Leonard Brand
	8:30-9:15 EXSEED Vision Goals of the Conference ~Ron Carter, Marilyn Eggers, & Doug Havens	8:00-8:15 Worship: ~Jerry Winslow	8:00-8:15 Worship: ~Calvin Thomsen	8:30-noon Research Encounters <i>See Research Encounters schedule</i>	9:00-9:15 Engaged learning based on Brand's presentation
		<i>See workshop schedule</i>	<i>See workshop schedule</i>		9:15-9:45 Team Videos ~Doug Havens & Marilyn Eggers
		<i>See workshop schedule</i>	<i>See workshop schedule</i>		

Time	Monday - 23 rd	Tuesday - 24 th	Wednesday - 25 th	Thursday - 26 th	Friday - 27 th
	<p>9:15-10:15 National Security and K-12 Education ~Charles F. McMillan, <i>Las Alamos National Laboratory Director</i></p> <p>10:15-10:30 Engaged learning based on McMillan's presentation ~EXSEED team & McMillan</p>				<p>9:45-10:00 Collaborative Projects ~Marilyn Eggers & Doug Havens</p>
	Break - 10:30 - 10:45			Break - 9:55-10:10	Break - 10:00-10:15
	<p>10:45-11:45 Changing Ecology of K-G Education ~Dick Osborn</p> <p>11:45 - Noon Engaged learning based on Osborn's presentation ~EXSEED team & Osborn</p> <p>12:00-12:30 Tools for Learning ~EXSEED Leadership Team</p>			<p>Research Encounters: Presentations <i>See Research Encounters schedule</i></p>	<p>10:15-11:00 GRASP Research Grant ~ Richard Hart & Ron Carter</p> <p>11:00-11:30 Conference Debrief & Brainstorm for the Future ~Ron Carter</p> <p>11:30-11:45 Group Photo ~Floyd Palitang</p> <p>11:45-12:15 <ul style="list-style-type: none"> • Concluding Challenge • Dedicatory Prayer for Teachers ~Richard Hart & Ron Carter </p>
12:00-1:00 1 hr.	Lunch			Noon-1:00	

Time	Monday - 23 rd	Tuesday - 24 th	Wednesday - 25 th	Thursday - 26 th	Friday - 27 th
	<p>1:00-2:00 iPad Essentials ~Tim Parker, Apple Engineer</p> <p>2:00-3:00 iPads in K-12 Education ~ Cheryl Lee, Apple Educator</p>	See workshop schedule	See workshop schedule	<p>1:00-3:00 Research Encounters: Presentations See Research Encounters schedule</p>	<p>12:15-1:00 Lunch and more team videos! ~Doug Havens & Marilyn Eggers</p>
3:00-3:15	Break			Break - 2:55-3:00	
	<p>3:15-3:45 EXSEED Conference Expectations & Opportunities ~Marilyn Eggers and the EXSEED Team</p> <p>3:45-4:15 EXSEED: SyncAll & Badges ~Doug Havens</p> <p>4:15-5:00 Making Music with GarageBand ~Stephen Robertson</p>			<p>3:00 - 5:00 pm Group labs: Medical Simulation Center (30 minutes for each group)</p> <p>EXSEED Collaborative Projects ~EXSEED team</p>	
5:00-6:00	Dinner				
6:00-9:00	<p>6:00-9:00 Required: Instructional Video Beginner & Intermediate Workshop ~Stew Harty & Stephen Robertson</p>	<p>6:30-8:00 Optional - Grant Writing for Success! ~Denver Driberg, Leanne Driberg, & Aloma Lively</p>	<p>6:30-9:00 Optional - Video & Collaborative Projects Lab ~ Marilyn Eggers, Doug Havens, & Tech Support</p>	<p>6:00-9:00 Optional - Video & Collaborative Projects Lab ~ Marilyn Eggers, Doug Havens, & Tech Support</p>	

Drayson Center Hours: M-Th 5:30 am – 10:00 pm
<http://www.llu.edu/central/drayson>
 Must show EXSEED badge



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2014 EXSEED Tuesday and Wednesday (June 24-25) Daily Schedule

Beginnings

Time	Tuesday - June 24	Wednesday - June 25
7:15-7:45	Check in for Workshop-only Participants , Centennial Complex - Damazo Amphitheater	Check in for Workshop-only Participants , Centennial Complex - Damazo Amphitheater
7:45-8:00	Welcome & Orientation: Ron Carter Announcements: Doug Havens &/or Marilyn Eggers	Welcome: Ron Carter Announcements: Doug Havens &/or Marilyn Eggers
8:00-8:15	Worship: ~Jerry Winslow	Worship: ~Calvin Thomsen

Workshop Schedule

Time	Half-day Workshops	Time	Short Workshops
8:15-8:30	<i>Break/travel</i>		
8:30-12:30	Half-day workshops	8:30-10:15	Short workshops
		10:15-10:30	<i>Break/travel</i>
		10:30-12:15	Short workshops
		12:15-12:30	<i>Break/travel</i>
12:30-1:30	Lunch		
1:30-5:15	Half-day workshops	1:35-3:15	Short workshops
		3:15-3:30	<i>Break/travel</i>
		3:30-5:15	Short workshops
		5:15-5:30	<i>Break/travel</i>
5:30-6:30	Dinner		
	Tuesday: 6:30-8:00	Wednesday: 6:30-9:00	
	<i>Optional - Grant Writing for Success!</i> ~Denver Driberg, Leanne Driberg, & Aloma Lively	<i>Optional - Video & Collaborative Projects Lab</i> ~Marilyn Eggers, Doug Havens, & Tech Support	



2014 Workshop Schedule & Location

Workshops: 1/4-day (1 hour 45 Mins)	Tuesday, June 24				Wednesday, June 25			
	8:30 AM -10:15 AM	10:30AM -12:15 PM	1:30 PM -3:15 PM	3:30 PM -5:15 PM	8:30 AM -10:15 PM	10:30 AM -12:15 PM	1:30 PM -3:15 PM	3:30 PM -5:15 PM
• A Hands-On Approach to Algebra					Centennial Complex CR 3226		Centennial Complex CR 3226	
• Brain Imaging Research and Medical Uses of that Research				Medical Center B 623				
• Building Bridges: Making Learning Meaningful by Connecting K12 Education to Business	Centennial Complex MC Amphitheater 3111		Cancelled		Cancelled		Centennial Complex MC Amphitheater 3111	
• Free Computational Tools for Exploring Molecular Biology & Neural Network Models							Centennial Complex CR 2220	Centennial Complex CR 2220
• Introducing Critical Thinking Skills Through Hands-on Research		Magan Hall Faculty Reading Room						
• iPad Integration in the Mathematics Classroom	Centennial Complex CR 3220★	Cancelled						
• Logic and Problem Solving through Computer Game Design						Nichol Hall Room 1906		Nichol Hall Room 1906
• Physics and Medicine: Healing with STEM		Medical Center Proton Lab				Medical Center Proton Lab		

★ = iPad required or recommended

★★ = iPad or Laptop required or recommended



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Workshops: 1-day (8 hours)	Tuesday, June 24		Wednesday, June 25	
	8:30 AM - 5:15 PM		8:30 AM - 5:15 PM	
• 3-D Printing in the Classroom	Centennial Complex CR 2226		Centennial Complex CR 2226	
• Big Data, Open Data, and the Classroom			Centennial Complex GIS Lab Room 3102	
• The Arduino Controller: An Introduction	Centennial Complex GIS Lab Room 3102			
Workshops: 1/2-day (4 hours)	Tuesday, June 24		Wednesday, June 25	
	8:30 AM - 12:15 PM	1:30 PM - 5:15 PM	8:30 AM - 12:15 PM	1:30 PM - 5:15 PM
• 21st Century Teaching, Learning, & Living: iPad Apps & Classroom Strategies		Centennial Complex CR 2220★		Centennial Complex CR 2220★
• 3-D Printing in the Classroom - INTRODUCTION	Centennial Complex CR 2226		Centennial Complex CR 2226	
• By Design Labs: Grades 5 & 6	Centennial Complex CR 2232		Centennial Complex CR 2232	
• Counting Molecules with Light-emitting Diodes	Centennial Complex CR 3214			Centennial Complex CR 3214
• Deadly or Curative? Venomous Animals & Their Venoms.	Griggs Hall Lab	Griggs Hall Lab		Griggs Hall Lab
• Demonstrating the Molecular Basis of Finger Formation: The Role of Sonic Hedgehog				Evans Hall Rm 9 (Molecular Embryology Lab)
• Education Robotic Programs / Our Project Based Learning Discovery Model Engages Students with Hands-on Activities that Enhance Learning		Centennial Complex CR 2232		Centennial Complex CR 2232

★ = iPad required or recommended

★★ = iPad or Laptop required or recommended



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Workshops: 1/2-day (4 hours)	Tuesday, June 24		Wednesday, June 25	
	8:30 AM - 12:15 PM	1:30 PM - 5:15 PM	8:30 AM - 12:15 PM	1:30 PM - 5:15 PM
• Felonious Faculty: A Brief but Repeated Life of Crime				Nichol Hall A927
• FIRST Tech Challenge - High School Robotics			Magan Hall Faculty Reading Room	
• How to Author an iBook: The Good, The Bad, & The Ugly	Loma Linda Academy Mac Lab	Loma Linda Academy Mac Lab	Loma Linda Academy Mac Lab	
• Inquiring Minds Want to Know - By Design Workshops for Grades 1-4		Centennial Complex Chen Fong 4220B		Centennial Complex Chen Fong 4220B
• Introduction to Problem Solving for Grades 2-6		Centennial Complex Chen Fong 4220A		
• LEGO Robotics Hands-on Workshop	Centennial Complex CR 3232	Centennial Complex CR 3232	Centennial Complex CR 3232	Centennial Complex CR 3232
• Listening to Atoms with a Pizza Box			Centennial Complex Chen Fong 4220C	
• Make Living Happen			Centennial Complex CR 3220	
• MinecraftEdu: No limit to the creativity of students				Loma Linda Academy Mac Lab
• Nervous Anatomy: "Where the Dead Teach the Living"	Centennial Complex Anatomy Lab		Centennial Complex Anatomy Lab	
• Singapore Strategies, Games, and Activities to Meet Common Core in Grades 1-5	Centennial Complex Chen Fong 4220A			

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2014 Workshop Schedule & Location

Workshops: 1/2-day (4 hours)	Tuesday, June 24		Wednesday, June 25	
	8:30 AM - 12:15 PM	1:30 PM - 5:15 PM	8:30 AM - 12:15 PM	1:30 PM - 5:15 PM
• STEM Project Based Learning: A Novel Approach to All Levels of Education	Cancelled	Centennial Complex CR 3214	Centennial Complex CR 3214	Cancelled
• Studying Sound and Light with the iPad		Centennial Complex Chen Fong 4220 C★		Centennial Complex Chen Fong 4220 C★
• The Chemistry of Cuisine		Nichol Hall Allied Health Kitchen		Nichol Hall Allied Health Kitchen
• What Happens When You Open A Can of Worms? Your Students Are Fully Engaged!	Centennial Complex CR 2220★★		Centennial Complex CR 2220★★	

★ = iPad required or recommended

★★ = iPad or Laptop required or recommended



Research Encounters

Thursday, June 26, 2014

Time	Minutes	Presentation
7:30-8:00		Conference room open
8:00-8:15	15	Welcome: ~Ron Carter Announcements: ~Doug Havens & Marilyn Eggers
8:15-8:30	15	Worship: ~Carla Gober
8:30-8:40	10	Introduction to Research Encounters ~Ron Carter
8:40-9:20	40	From STEM to STERN - When Things Go Wrong in the Classroom ~Willie Davis
9:20-9:35	15	Interactive application; Q&A
9:35-9:40	05	Intro & Set up
9:40-10:20	40	Biological Markers of Longevity ~Penny Duerksen-Hughes
10:20-10:35	15	Interactive application; Q&A
10:35-10:40	05	Intro & Set up
10:35-10:50	15	Break & Presentation Set Up
10:50-11:30	40	Morphamazing: Discovering the Mechanism that Transforms a Cell into an Organism ~Kerby Oberg
11:30-11:45	15	Interactive application; Q&A
11:45-12:00	15	Engaged Learning: table and full-group debrief
12:00-1:00	1 hour	Lunch
1:00-1:40	40	Translating Science into Cures for Childhood Cancer: How One Plan Came Together ~Kimberly Payne
1:40-1:55	15	Interactive application; Q&A
1:55-2:00	05	Intro & Set up
2:00-2:40	40	Food for Thought ~Krystal Gheen
2:40-2:55	15	Interactive application; Q&A
2:55-3:00	05	Break
3:00-5:00	2 hours	Active Learning Activities: <ul style="list-style-type: none"> • Rotating groups of 20 to the Medical Simulation Center – 30 minutes per group • Small collaborative group projects development • Team instructional video project development
5:00-6:00	1 hour	Dinner
6:00-9:00	3 hours	<i>Optional - Video & Collaborative Projects Lab</i> ~Marilyn Eggers, Doug Havens, & Tech Support Team