

TUESDAY SCHEDULE

6:30 – 8:00 a.m.	Breakfast
8:00 – 8:15	Welcome – David Erickson, ECHO's President/CEO
8:15 – 8:30	Worship
8:30 – 8:45	Devotions - From Poverty to Resilience, Tim Albright
8:45 – 9:00	Announcements - Danielle Flood
9:00 – 9:45	<i>Increasing smallholder resilience through agroforestry-</i> Dr. P.K. Nair
9:45 - 10:30	<i>Wild fruits in Central Asia: Their use by local farmers and international interest in the application of natural diversity in addressing agricultural problems of disease and weather</i> - Stan Brown
10:30 - 11:00	Break and networking
11:00 - 11:45	<i>Greenhouse and aquaponics projects - Design and development in a developing world setting</i> - Rex Barber
11:45 - 11:50	Announcements
11:55	Bus leaves for ECHO
12:30 - 1:30 p.m.	Lunch
1:30 - 2:30	Afternoon Workshop Session I
2:30 - 3:00	Break
3:00 - 4:00	Afternoon Workshop Session II
4:30	Bus leaves for Crowne Plaza Hotel
5:00 - 7:00	Dinner (not provided)
7:00 - 8:00	Evening Session I - one hour
7:00 - 8:00	Evening Session I - poster session
8:00 - 8:10	Break
8:10 - 8:35	Evening Session III - 25-minute presentations



TUESDAY MORNING SESSIONS

8:30	9:00	9:30	10:00	10:30	11:00	11:30
...	Increasing smallholder resilience through agroforestry	Wild fruits in Central Asia		Break	Greenhouse and aquaponics projects - design and development in a developing world setting	...

Increasing smallholder resilience through agroforestry

Resilience refers to the capacity for ecological systems to persist and absorb changes. Climate-change resilience encompasses a dual function, to absorb shock as well as to self-renew to cope with new circumstances. Agroforestry offers both mitigation and adaptation strategies for enhancing smallholder resilience. Increased biomass production in multi-species agroforestry combinations enhances carbon sequestration (mitigation mechanism) in biomass and soils. Management of crop components of agroforestry systems through conservation-agriculture and agroecological farming methods including residue/mulching/ground-cover management, crop diversification, water management, and fertilizer-use efficiency enhances the ability of the whole system to adapt better to climate change.

Dr. P.K. Nair

Dr. P.K. Nair, Distinguished Professor at the University of Florida, is a world leader in agroforestry and sustainable land-use systems, a pioneering researcher and educator, and one of the founders of ICRAF (World Agroforestry Centre, Nairobi, Kenya).

Wild fruits in Central Asia: Local use by farmers and international interest in the application of natural diversity in addressing agricultural problems of disease and weather

The Tian Shan mountains that straddle Kazakhstan, Kyrgyzstan, and Uzbekistan on the west and China's Xinjiang Province on the east are home to the Earth's greatest collection of wild fruits of the rose family. Apples, pears, plums, apricots, and others are found in wild groves and forests and have been used by local farmers for centuries. Scientists from around the world are studying, collecting, and breeding this wonderful diversity to try to improve the genetics of domestic fruit for better disease resistance, cold tolerance, and even color. This presentation is a fascinating story of plant diversity colored with first-hand descriptions of a beautiful and little-known part of the world.

Stan Brown

Stan Brown directs the IDEAS Central Asia Harvest Project which has provided extension training beginning in 1994 to small- and medium-scale fruit farmers in Central Asia including Kazakhstan, Uzbekistan, Tajikistan, and Kyrgyzstan.

Greenhouse and aquaponics projects – design & development in a developing world setting

Rex will be sharing two case studies related to greenhouse construction for the benefit of smallholder farmers. One concerns a large greenhouse kit that was designed and built in a closed country using earth-bags for the wall system. The second is a greenhouse and aquaponics training facility in support of a business as mission effort that spans Kazakhstan and the USA.

Rex Barber

Rex Barber is staff architect / team leader with EMI (Engineering Ministries International). He leads teams of design professionals on short-term mission trips designing projects with international partner ministries and also manages, designs and builds projects on the field.

TUESDAY AFTERNOON SESSIONS

01:30	2:00	2:30	3:00	3:30
Soil life - Part 1 Andy Cotarelo	<i>N - Rainforest Clearing</i>	Break	Soil life - Part 2 Andy Cotarelo	<i>N - Rainforest Clearing</i>
Grafting - Session 1 Crafton Clift, David & Jenny Burd, and Lloyd Marsh	<i>K - Maintenance Shop Overhang W</i>		Grafting - Session 2 Crafton Clift, David & Jenny Burd, and Lloyd Marsh	<i>K - Maintenance Shop Overhang W</i>
Tour of ECHO's farm (English, Spanish, Creole) Martin Price, Brad Ward, Rhoda Buetler	<i>F - Bamboo Courtyard</i>		Agroforestry tour Tim Watkins and Bob Hargrave	<i>S - Tropical Highlands</i>
Meet the Speaker Dr. P.K. Nair	<i>B - Visitor Center</i>		Raising third culture kids Ellen Hargrave	<i>B - Visitor Center</i>
Fortifying tortillas with chaya Penny Rambacher & Marta Sicajan	<i>G - AT Kitchen</i>		Meet the Speaker Rex Barber	<i>H - AT Center</i>
Seed bank tour Holly Sobetski and Tim Watkins	<i>J - Seed Bank</i>		Meet the Speaker Stan Brown	<i>T - Global Farm Classroom</i>
Chapin Drip Irrigation field demonstration Doug and Nancy Carlson	<i>Q - Semi Arid</i>		Culturing beneficial microbiology for farming Stacy Reader	<i>L - PLC</i>
Agricultural development and the digital generation: ECHOcommunity.org Nate Flood	<i>D - Ag Tech Classroom</i>		Designing polyculture and companion plantings for tropics and drylands Daniel Halsey	<i>D - Ag Tech Classroom</i>

TUESDAY AFTERNOON SESSIONS I (1:30 - 2:30)

Complete profiles of all session speakers are available in the Session leader bios section of this book

Soil life - Part 1 Andy Cotarelo, ECHO's Farm Manager	<i>N - Rainforest Clearing</i>
Part 1 of 2 discussing the importance of soil life in the farming system. We will talk about ECHO's experience with understanding soil life and how it impacts the small-scale farmer. The workshop will be a mixture of sit-down discussion as well as looking at some examples of systems that have stewarded the "livestock" in the soil.	
Grafting - Session 1 Crafton Clift, David & Jenny Burd, and Lloyd Marsh	<i>K - Maintenance Shop Overhang - West</i>
Grafting tropical fruit and nut trees is such a popular subject that every year ECHO has grafting workshops at all afternoon sessions. Each afternoon during the first session, the teaching team will determine the interests and experience level of each delegate and then offer personalized instruction. The first session usually involves instruction and demonstration.	
Tour of ECHO's farm (English, Spanish & Creole) Martin Price (English), Former CEO and Founder of ECHO, Brad Ward, ECHO's Central America & the Caribbean Regional Impact Team Leader, Rhoda Buetler	<i>F - Bamboo Courtyard</i>
This walking tour of the farm will feature some of the lesser known plants and techniques; for example, perennial vegetables and rooftop gardening techniques.	



Meet the Speaker	<i>B - Visitor Center</i>
<i>Dr. P. K. Nair</i>	
See presentation summary and biography from morning talk.	
Fortifying tortillas with chaya	<i>G - AT Kitchen</i>
<i>Penny Rambacher & Marta Sicajan</i>	
Learn how to add chaya and other under-utilized greens to fortify existing food culture with protein, iron, calcium, and more. It is as simple as adding greens to corn tortillas, a staple food item in Central America. Chaya can also be added to beans, rice and scrambled eggs as well as used to make a nutritious baby food to prevent early onset malnutrition. As a tea, the green helps lower blood sugar for diabetics. Come taste green tortillas hot off the comal in the AT pavilion.	
Seed bank tour	<i>J - Seedbank</i>
<i>Holly Sobetski, ECHO Seed bank Manager</i>	
Have you ever wondered how seeds get from the field to a packet? Take a tour of ECHO's seed bank and learn about basic seed saving and storage techniques. Held at the ECHO seed bank, this workshop touches on some basic principles for selecting crops to multiply, growing a crop for seed production, collecting and storing the seed, and then monitoring quality/viability of stored seeds. It will include information on how development practitioners can store high-value seeds under proper conditions in areas where electricity is not available for dehumidifying or cooling.	
Chapin Drip Irrigation field demonstration	<i>Q - Semi Arid</i>
<i>Doug & Nancy Carlson</i>	
A simple bucket drip irrigation system is being used worldwide to enable small-scale farmers to produce vegetables during either dry seasons or drought conditions. A demonstration of this drip irrigation system will be presented as well as various other improved gardening technologies to assist in food security programs.	
Agricultural development & the digital generation:	<i>D - Ag Tech Classroom</i>
<i>Nate Flood, ECHO's Digital Media Specialist</i>	
Through ECHOcommunity over 11,000 development workers, trainers, and small-scale farmers are getting the ECHO conference 24 hours a day, 365 days a year. In this interactive session you will learn about some hidden benefits of your ECHOcommunity membership, get hands-on help with your questions, and help to shape the future of your online community. Several suggestions from last year's session have already been implemented on ECHOcommunity. Here is your chance to weigh in on what's coming next.	

Tuesday's lunch generously provided by:

New Hope Presbyterian
Northside Baptist
Buckingham Presbyterian

TUESDAY AFTERNOON SESSIONS II (3:00 - 4:00)

Soil life- Session 2	<i>N - Rainforest Clearing</i>
<i>Andy Cotarelo, ECHO's Farm Manager</i>	
Part 2 of 2 discussing the importance of soil life in the farming system.	
Grafting - Session 2	<i>K - Maintenance Shop Overhang - West</i>
<i>Crafton Clift, David & Jenny Burd, and Lloyd Marsh</i>	
Grafting tropical fruit and nut trees is such a popular subject that every year ECHO has grafting workshops at all afternoon sessions. Second session delegates who attended any first session will have opportunity to practice grafting techniques they observed.	
Agroforestry tour	<i>S - Tropical Highlands</i>
<i>Tim Watkins, ECHO's Head of Agriculture Operations</i> <i>Bob Hargrave, ECHO's Technical Response Unit</i>	
This tour introduces the concept of agroforestry and presents various examples of agroforestry systems at ECHO..	
Raising third culture kids	<i>B - Visitor Center</i>
<i>Ellen Hargrave, African Inland Missions</i>	
This workshop will be a time to think through and talk about educating and raising the most important resource that God has given us - our children- in a culture other than the one that their parents have come from. What are some of the challenges? What is best for each child? Although each setting and child is unique, there are many ideas and experiences that we can share to help each other in the journey. Ellen will also be available for private meetings throughout the week.	
Meet the Speaker	<i>H - AT Center</i>
<i>Rex Barber</i>	
See presentation summary and biography from morning talk.	
Meet the Speaker	<i>T - Global Farm Classroom</i>
<i>Stan Brown</i>	
See presentation summary and biography from morning talk.	
Culturing beneficial microbiology for farming	<i>L - Peckham Learning Center</i>
<i>Stacy Reader, ECHO's Research and Publications Associate</i>	
The goals of this presentation are to exhibit how microorganisms and microbiology benefit ecosystem health and explore in what ways farmers can use microorganisms and microbiology to increase the long-term health of soil, crops, or animals. The use of microbiology for soil restoration by encouraging microbial breakdown of protein will be explained and demonstrated during the session. Topics will include comparing Effective Microorganisms (EM) and indigenous microorganisms (IMO), the benefits of fermented amino acid (FAA) sprays and application practices of both IMO and FAA.	
Designing polyculture and companion plantings for tropics and drylands	<i>D - Ag Tech Classroom</i>
<i>Daniel Halsey</i>	
Understanding the dynamics of ecological design and agricultural practices connect at the point of design. Travel with us through our design process to create an ecologically balanced and appropriate diagram to implement, whether on small acreage or vast hectares of land. Learn the steps and process to delivering a clean and understandable concept.	



NOTES

TUESDAY EVENING SESSIONS

Room	7:00	8:10
B	Evaluation: How can we help farmers do better? (Live webinar) Bob Morikawa	Empowering communities through moringa peer education! Rick Kemmer
D	Upland maize (corn) production systems: Strategies for sustainability Dr. Josh Ringer	The value of sustainable tourism as a complement to agriculture activities in rural community development Colin Richard
E	Silvopastoral systems in Brazil Felipe Pinheiro	Learn more about the ECHO internship! Brian Flanagan
F	ECHO poster session Dave Williams & Stacy Reader	Chapin drip irrigation discussion Doug and Nancy Carlson

Evaluation: How can we help farmers do better? (Live webinar)

7:00 - 8:00 Room B

Bob Morikawa

Knowing how farm communities are doing, and how a community development project is impacting farm families is critical to community and project success. This workshop will discuss evaluation strategies and share practical lessons learned on conducting effective evaluations.

Upland maize (corn) production systems: Strategies for sustainability

7:00 - 8:00 Room D

Dr. Josh Ringer

Market forces in Southeast Asia have encouraged the proliferation of Hybrid Maize (Corn) production systems among marginalized smallholder farmers throughout upland areas. This presentation will describe that system and how the system can become more efficient in order to increase financial return and nutrient use efficiency. In addition, options for crop diversification will be discussed. The focus will be on Southeast Asian upland systems but will also include comparable examples from Africa and Central and South America.

Silvopastoral systems in Brazil

7:00 - 8:00 Room E

Felipe Pinheiro

This presentation will focus on the potential use of silvopastoral systems (SPS) in Brazil to fight the increasing of land degradation and will describe the specific characteristics of SPS in the different ecological regions of the country. We will also consider management aspects, ecosystems services, economic potential, and the impediments for the use of SPS throughout Brazil.

ECHO's poster session

7:00 - 8:00 Room F

Facilitated by Dave Williams, Auburn University & Stacy Reader, ECHO's Research & Publications Associate

During ECHO Florida's second annual poster session, attendees who submitted a poster will present their research findings.



Empowering communities through moringa peer education**8:10 - 8:35 Room B***Rick Kemmer*

Learn how Strong Harvest trains community participants to become Peer Educators in basic nutrition and the cultivation and uses of the moringa tree to provide good nutrition, clean water, and economic opportunities at the family level. Peer Educators become subject matter experts, sharing their knowledge within their own communities and beyond, teaching and encouraging others to use moringa to meet their unique situations and needs. Participants will also have a chance to peruse the Strong Harvest training manual and large-scale training illustrations which are designed to be used at all educational levels and are available in English and six additional languages.

The value of sustainable tourism as a complement to agriculture activities in rural community development**8:10 - 8:35 Room D***Colin Richard*

This presentation will examine the value of sustainable tourism as a complement to agriculture activities in rural community development settings. The United World Tourism Organization (UNWTO) identifies tourism as “one of the strongest drivers of world trade and prosperity,” and the majority of visitors to the developing world – including short-term missions groups - utilize tourism infrastructure. Various types of tourism will be discussed, as well as the United Nations Educational and Scientific Organization’s (UNESCO) framing of “sustainable tourism.”

Learn more about the ECHO internship!**8:10 - 8:35 Room E***Brian Flanagan*

Interested in learning more about ECHO’s Internship program? Thinking about applying? Come and learn more about ECHO’s program and the process of applying. There will also be time for questions and answers.

Chapin Drip Irrigation discussion**8:10 - 8:35 Room F***Doug Carlson, Executive Director of Chapin Living Waters*

This session will be an overview of the development of this technology and how it is being used in many places around the world.

WEDNESDAY SCHEDULE

6:30 – 8:00 a.m.	Breakfast
8:00 – 8:15	Worship
8:15 – 8:30	Devotions - From Poverty to Resilience, Bruce Wilson
8:30 – 8:45	Announcements - Danielle Flood
8:45 – 9:00	<i>Update on the services and activities of ECHO's Regional Impact Centers in Africa and Asia</i> - David Erickson
9:00 – 9:45	<i>Tropical legumes for sustained cropping on marginal soils</i> - Dr. Tim Motis
9:45 - 10:30	<i>How linguistics can benefit agricultural development workers</i> - Dr. David Ross
10:30 - 11:00	Break and networking time
11:00 - 11:45	<i>Creation care through agricultural development</i> - Scott Sabin
11:45 - 11:50	Announcements - Danielle Flood
11:55	Bus leaves from hotel
12:30 - 1:30 p.m.	Lunch
1:30 - 2:30	Afternoon Workshop Session I
2:30 - 3:00	Break
3:00 - 4:00	Afternoon Workshop Session II
4:30	Bus leaves for Crowne Plaza Hotel
5:00 - 7:00	Dinner (not provided)
7:00 - 7:25	Evening Session I - 25-minute presentation (Alex Moseson)
7:00 - 8:00	Evening Session I - 50-minute presentations
7:35 - 8:00	Evening Session II - 25-minute presentations (Marcie Dallman)
8:00 - 8:10	Break
8:10 - 8:35	Evening Session III - 25-minute presentations



WEDNESDAY MORNING SESSIONS

8:30	9:00	9:30	10:00	10:30	11:00	11:30
...	Tropical legumes for sustained cropping on marginal soils	How linguistics can benefit agricultural development workers		Break	Creation care through agricultural development	...

Tropical legumes for sustained cropping on marginal soils

Through generous support from the Howard G. Buffett Foundation, ECHO completed a five-year (2010-2015) research project in Limpopo Province of South Africa. The central question addressed was “How can small-scale farmers in sub-Saharan Africa continue to produce food with limited resources for improving depleted soils?” Emphasis was placed on evaluating how best to utilize tropical legumes for sustained cropping of dry, sandy soils. Drawing from lessons learned over five growing seasons of field trials, Tim Motis will discuss 1) the benefits of tropical legumes and their contribution to soil ecology, 2) factors to consider in selecting a legume for your area, 3) options for inter-cropping legumes with grain crops and moringa, and 4) low-cost soil amendments to enhance farmer success with the use of tropical legumes.

Dr. Tim Motis

Tim Motis grew up in Liberia and worked in Ethiopia for two years before earning his PhD in horticulture at the University of Florida. He has been on staff with ECHO since 2003. Currently, he oversees ECHO's Agriculture Technical and Research Division. His team produces informational resources relevant to small-scale farmers, responds to agriculture development related inquiries, maintains a library collection of resources pertaining to tropical agriculture, and conducts research. From 2010-2015, Tim led a research program in South Africa focused on maintaining soils with tropical legumes. Other research activities include field experiments on ECHO's Global Demonstration Farm in Florida and collaborative efforts with ECHO Regional Impact Centers.

How linguistics can benefit agricultural development workers

This presentation explores the benefits of linguistic and cultural sensitivity to increase the effectiveness and acceptability of agricultural development projects. Two examples of well-intentioned development projects, which failed for lack of cultural understanding, are cited – one a small-scale project and the other a large-scale project. The presentation also includes some suggestions for increasing the effectiveness of publicity materials.

Dr. David Ross

Dr. David Ross is president of the Graduate Institute of Applied Linguistics in Dallas, TX. He has had careers in civil engineering, Bible translation, and higher education administration, and has published scholarly papers in all three areas of service.

Creation care through agricultural development

Creation care is a unique way to better understand God and participate in his redemptive work in the world. Furthermore, while care of the environment may seem a secondary priority, those we seek to serve are particularly vulnerable to its degradation.

Scott Sabin

Since 1995, Scott Sabin has served as the Executive Director of Plant With Purpose, an international Christian organization that empowers the poor in rural areas around the world where poverty is caused by deforestation.

WEDNESDAY AFTERNOON SESSIONS

01:30	2:00	2:30	3:00	3:30
Meet the Speaker Dr. David Ross	<i>B - Visitor Center</i>	Break	Practical lessons about managing a non-profit organization Dr. Martin Price	<i>B - Visitor Center</i>
Grafting - Session 1 Crafton Clift, David & Jenny Burd, and Lloyd Marsh	<i>K - Maintenance Shop Overhang W</i>		Grafting - Session 2 Crafton Clift, David & Jenny Burd, and Lloyd Marsh	<i>K - Maintenance Shop Overhang W</i>
Meet the Speaker Scott Sabin	<i>T - Global Farm Classroom</i>		Urban agriculture using five-gallon buckets Jim Schwai	<i>T - Global Farm Classroom</i>
AT demonstration tour Craig Bielema & Sara Garrison	<i>H - AT Center</i>		Off-grid solar oven manufacture Tom Hallquist	<i>H - AT Center</i>
Fruit tree propagation techniques Lydia Hoffland	<i>M - Maintenance Shop Overhang E</i>		Natural farming tour Rick Burnette, Melissa Larson, and Stacy Reader	<i>M - Maintenance Shop Overhang E</i>
Financial literacy for development workers Tina Ugland	<i>D - Ag Tech Classroom</i>		Basics of budgeting for NGOs Robin & Brian Flanagan	<i>D - AgTech Classroom</i>
Compost and vermiculture Brad Ward	<i>S - Vermiculture Demo</i>		Introduction to bamboo varieties & their propagation & management Tim Watkins	<i>F - Bamboo Courtyard</i>
Breaking the poverty cycle Tim Albright	<i>L - PLC</i>		Meet the Speaker Dr. Tim Motis	<i>E - A-Frame Courtyard</i>

WEDNESDAY AFTERNOON SESSIONS I (1:30 - 2:30)

Complete profiles of all session speakers are available in the Session Leader Bios section of this book

Meet the Speaker Dr. David Ross	<i>B - Visitor Center</i>
See presentation summary and biography from morning talk.	
Grafting - Session 1 Crafton Clift, David & Jenny Burd, & Lloyd Marsh	<i>K - Maintenance Shop Overhang West</i>
Grafting tropical fruit and nut trees is such a popular subject that every year ECHO has grafting workshops at all afternoon sessions. Topics: Each afternoon during the first session, the teaching team will determine the interests and experience level of each delegate and then offer personalized instruction. The first session usually involves instruction and demonstration.	
Meet the Speaker Scott Sabin	<i>T - Global Farm Classroom</i>
See presentation summary and biography from morning talk.	
AT demonstration tour Craig Bielema, ECHO's Appropriate Technology Manager & Sara Garrison, AT Intern	<i>H - AT Center</i>
ECHO's AT department is working to teach relevant ideas that can be used to help with the basic needs of food, water, and shelter. This tour will focus on technologies such as pumps, water collection and treatment, and more.	



Fruit tree propagation techniques <u>East</u> <i>Lydia Hoffland, ECHO's Propagation Manager</i> <p>This workshop will present the basics of vegetative propagation of fruit trees in a small-scale nursery setting. Learn from practical demonstrations of a variety of techniques used to multiply major fruit crops in a development context.</p>	<u>M - Maintenance Shop Overhang</u>
Financial literacy for development workers <i>Tina Ugland, ECHO's Finance Director</i> <p>This is an introduction to basic bookkeeping and accounting concepts. It will be presented in an easily understandable way that is meant to demystify accounting terms and concepts. The objective is to provide a level of understanding that will create a foundation for the accounting work that you may be responsible for.</p>	<u>D - Ag Tech Classroom</u>
Compost and vermiculture <i>Brad Ward, ECHO's Central America & the Caribbean Regional Impact Team Leader</i> <p>Soil health is essential to productive agriculture. Join this workshop to learn more about how you can increase your soil's health and adopt a no-waste mentality. The workshop will cover the construction and use of "hot" compost piles that kill weed seeds and harmful pathogens, setting up and maintaining productive worm composting systems as well as making and using compost tea.</p>	<u>S - Vermiculture</u>
Breaking the poverty cycle <i>Timothy Albright, ECHO's Chief Operations Officer</i> <p>This talk will focus on some of the challenges that small-scale farmers face when trying to implement change and how we, as facilitators, can identify and invest in agents of transformation while we accompany them on their journey from poverty towards resilience.</p>	<u>L - Peckham Learning Center</u>

Today's lunch generously provided by:

St. Luke's Episcopal
Christ Community Church
St. Hillary's

WEDNESDAY AFTERNOON SESSIONS II (3:00 - 4:00)

Practical lessons about managing a non-profit organization	<i>B - Visitor Center</i>
<i>Dr. Martin Price, Former CEO and Founder of ECHO</i>	
This talk is a rapid-fire discussion of many principles that continue to serve me well in leading or consulting with non-profit organizations. These are principles that pop out immediately in the right situation and guide me in how I respond to certain situations. It is surprising how many people end up being leaders and managers in the NGO world who have had no training and little time to develop a set of core values of practical management ideas.	
Grafting - Session 2	<i>K - Maintenance Shop Overhang West</i>
<i>Crafton Clift, David & Jenny Burd, and Lloyd Marsh</i>	
Second session delegates who attended any first session will have opportunity to practice grafting techniques they observed.	
Urban agriculture using five-gallon buckets	<i>T - Global Farm Classroom</i>
<i>Jim Schwai</i>	
This workshop demonstrates how to prepare recycled 5-gallon containers with which to grow vegetables. The SIPer is a subsurface irrigation planter that uses 1/3 of the water, soil, and effort required by a conventional garden. It incorporates subsurface irrigation, composting, water catchment systems, horticulture, solar, and LED technologies.	
Off-grid solar oven manufacture	<i>H - AT Center</i>
<i>Tom Hallquist</i>	
Solar ovens are an appropriate technology for populations that must walk more than 10 miles for firewood, spend more than half their monthly income on charcoal, or live in camps for the displaced where cooking fuel is unavailable or dangerous to obtain. As many within these populations are in need of income, solar oven manufacturing can play a role in creating jobs and providing a basic need.	
Natural farming tour	<i>M - Maintenance Shop Overhang East</i>
<i>Rick Burnette, ECHO's Director of Agriculture, Melissa Larson, Tropical Lowlands intern at ECHO</i>	
<i>Stacy Reader, ECHO's Research and Publications Associate</i>	
See how ECHO harnesses the power of beneficial microorganisms by capturing and culturing indigenous microorganisms (IMO) for improving the soil, fortifying crops, feeding animals, and for producing compost and natural fertilizers.	
Basics of budgeting for NGOs	<i>D - Ag Tech Classroom</i>
<i>Robin & Brian Flanagan</i>	
This workshop will be an introduction to the basics of creating a project/program budget. This will be for those that want more experience in creating and managing budgets for their NGO. The workshop will complement the introduction to basic bookkeeping and accounting concepts workshop.	
Introduction to bamboo varieties and their propagation and management	<i>F - Bamboo Courtyard</i>
<i>Tim Watkins, ECHO's Head of Agriculture Operations</i>	
This workshop will feature various bamboo varieties growing on the ECHO farm, describing some of the general characteristics and also include propagation and care of tropical and subtropical bamboo species.	
Meet the Speaker	<i>E - A Frame Courtyard</i>
<i>Dr. Tim Motis</i>	
See Presentation summary and biography from morning talk.	



NOTES

WEDNESDAY EVENING SESSIONS

Room	7:00	7:30	8:10
B	Micorrrhyzal applications Dr. Mike Amanranthus		Nutritious leafy green crops for the tropics Josh Jamison
D	Analyzing the impact of a five-year collaboration among the Karamojong in Uganda David Erikson		Creole discussion group - Making the most of ECHO's services Brian Flanagan, Rhoda Buetler, and Brad Ward
E	Innovation for international development: Agriculture and engineering in partnership Alex Moseson	Forest gardens in East Kalimantan Marcie Dallmann	Aquaculture/aquaponic's role in Christian community development Dr. Corey Courtwright
F	Changing the need via product development: methods and techniques used by a 'seedsman' to meet the needs of a hungry marketplace Mike Mueller		Survival gardening videos Carl Burkybile

Micorrrhyzal applications

7:00 - 8:00 Room B

Dr. Mike Amanranthus

The single greatest leverage point for a sustainable and healthy future for the seven billion people on the planet is arguably immediately underfoot: the living soil where we grow our food. The mycorrhizal fungi are keystone species in the living soil because of their ability to access nutrients and water and protect plant roots from deadly diseases. Recent scientific studies have documented the ability of mycorrhizal fungi to improve crop yields while decreasing the use of chemical fertilizers, pesticides and water. New technological advances are making mycorrhizal inoculum available and affordable for small farms and a valuable tool in sustainable agriculture.

Analyzing the impact of a five-year collaboration among the Karamojong in Uganda

7:00 - 8:00 Room D

David Erickson, ECHO's President and CEO

ECHO participated in a unique five-year multi-sectoral collaboration in the Karamoja Region of Uganda. David Erickson will share some of the distinctives, challenges and impacts of this multi-organization initiative to foster holistic change in this historically-troubled area of N.E. Uganda.

Innovation for international development: Agriculture and engineering in partnership

7:00 - 7:25 Room E

Dr. Alex Moseson

The Innovation for International Development (I2D) Lab at Purdue University puts engineering innovations to work for sustainable global development. Learn best practices, see examples of engineering and agriculture producing solutions greater than the sum of their parts, and explore partnership opportunities.

Forest gardens in East Kalimantan

7:30 - 7:55 Room E

Marcie Dallmann

The presentation will give a brief overview of the forest gardens of the Dayak people of East Kalimantan in Indonesia. The overview will include traditional practices and plant species composition, the conservation value of these gardens, as well as the major changes occurring in these systems.

Changing the need via product development: methods and techniques used by a 'seedsman' to meet the needs of a hungry marketplace

7:00 - 8:00 Room F

Mike Mueller

After 30 years of working with American vegetable farmers and seed companies to identify and help develop improved varieties of vegetables for the challenging market place, Mike has learned several things which are transferable to meeting the needs of small plot subsistence farmer/gardeners.



Nutritious leafy green crops for the tropics	8:10 - 8:35 Room B
<i>Josh Jamison</i>	
This talk will be a brief survey of the large diversity of leaf crops from around the world that have potential to improve nutrition, especially focusing on perennial species. Topics covered will be nutrition content, culture, and climate considerations. Plants discussed will range from well-known options like moringa to less familiar and highly underexploited species, many of which are demonstrated on the ECHO farm.	
Creole discussion group - Making the most of ECHO's services	8:10 - 8:35 Room D
<i>Brian Flanagan, ECHO's Intern Manager, Rhoda Buetler Brad Ward, ECHO's Central America and the Caribbean Regional Impact Team Leader</i>	
Delege ki sòt Ayiti pral gen yon opotinite pou aprann prensipal tip de sèvis ECHO bay epi wè koman pou aplike sèvis ECHO pou travay devlopman agrikòl nan kominotè kote yap travay.	
Aquaculture/aquaponic's role in Christian community development: Factors to consider before starting an aquaculture project in the developing world	8:10 - 8:35 Room E
<i>Dr. Corey Courtwright</i>	
Fish is a wonderful protein source and can be very inexpensive to produce, making aquaculture (i.e., fish farming) and aquaponics trendy topics in Christian community development circles. However, aquaculture - especially aquaponics - is not universally applicable to the developing world. We will explore technical factors to consider before undertaking an aquaculture/aquaponics project.	
Survival gardening videos	8:10 - 8:35 Room F
<i>Carl Burkybile</i>	
Healing Hands International produces train-the-trainer survival gardening workshops in 25 countries. During this session, participants will see handouts, vinyl banners, and videos on making compost piles, constructing raised planting beds and using drip irrigation. The videos are in English, Spanish, French, and Swahili and can be downloaded from the www.hhi.org website. The videos can also be loaded to android cell phones and pasted from cell phone to cell phone with blue tooth technology.	

THURSDAY SCHEDULE

6:30 – 8:00 a.m.	Breakfast
8:00 – 8:15	Worship
8:15 – 8:30	Devotions - From Poverty to Resilience, Marcie Dallmann
8:30 – 8:45	Announcements and evaluations - Danielle Flood
8:45 – 9:30	<i>The basics of biogas for smallholder farmers</i> - Dr. Ann Wilkie
9:30 – 10:15	<i>Biochar for soil restoration and environmental management: An integrated food-energy systems approach</i> - Dr. Roy Beckford
10:15 - 10:30	Break and networking time
10:30 - 11:15	<i>Water-harvesting principles & the story of an African rain farmer: Design guidelines for regenerative water and fertility management</i> - Brad Lancaster
11:15 - 11:30	Announcements & group photo
11:55	Bus leaves from hotel
12:30 - 1:30 p.m.	Lunch
1:30 - 2:30	Afternoon Workshop Session I
2:30 - 3:00	Break
3:00 - 4:00	Afternoon Workshop Session II
4:30	Bus leaves for Crowne Plaza Hotel
6:30 - 9:00	Banquet - Crowne Plaza Ballroom <ul style="list-style-type: none"> • Welcome & blessing • Dinner • Delegate Takeaways • Banquet speaker- David Erickson, President/CEO • Closing Prayer of the Nations



THURSDAY MORNING SESSIONS

8:30	9:00	9:30	10:00	10:30	11:00	11:30
...	The basics of biogas for smallholder farmers	Biochar for soil restoration and environmental management: An integrated food-energy systems approach		Break	Water-harvesting principles & the story of an African rain farmer: Design guidelines for regenerative water and fertility management	...

The basics of biogas for smallholder farmers

Anaerobic digestion, or biodigestion, involves the microbial degradation of organic materials in an oxygen-free environment. Feedstocks for anaerobic digestion include livestock manures, crop residues, culled fruit and vegetables, food waste, and other organic by-products. The process produces renewable energy in the form of biogas (which is mostly methane) and a nutrient-rich digestate that can be used as a biofertilizer instead of commercial fertilizers.

Dr. Ann Wilkie

Dr. Ann Wilkie is a Professor of Bioenergy and Sustainable Technology in the Soil and Water Science Department at the University of Florida - IFAS. Dr. Wilkie's specialty is microbial metabolism, with particular emphasis on anaerobic processes and biomass to biofuel conversion. Dr. Wilkie is an internationally recognized expert in biogas technology and has conducted leading research on the practical application of anaerobic digestion for waste treatment and renewable energy production from biomass and organic residues, including livestock waste, food waste, bioethanol and biodiesel by-products, and other waste streams.

Biochar for soil restoration and environmental management: An integrated food-energy systems approach

Roy Beckford will be presenting findings from a research project that investigated an intervention strategy. The first goal was to determine the practicability of rebuilding soil horizons on eroded parent soils using blends of biochar and compost to create anthroposols, through a process called 'Restorative Anthropogenesis.' The second goal was to develop a closed loop cycle between pyrogenic carbon (thermochemically altered carbon) and farm soils. The final goal was to model how an integrated food-energy system (IFES) impacts biogeochemical cycles to restore ecological interactions and improve the delivery of ecosystem services.

Dr. Roy Beckford

Roy Beckford has been the University of Florida's Agricultural and Natural Resources Agent in Lee County, Florida since April 2005 and serves concurrently as County Extension Director. He previously worked in Agricultural Extension in Jamaica and the British Virgin Islands for 14 years.

Water-harvesting principles & the story of an African rain farmer: Design guidelines for regenerative water and fertility management

"You must plant the rain before you plant a seed or tree!" proclaimed rain farmer Mr. Zephaniah Phiri Maseko of Zimbabwe. By doing just that, he and his family turned a wasteland into an oasis, raised groundwater and well levels even in dry years, reduced flooding in wet years, and enhanced the fertility of the soils. This inspiring story will be shared along with the strategies used, and more importantly, the guiding principles that informed the choice, placement, and implementation of these strategies into a more integrated and productive system. These principles work in any climate experiencing a dry season or drought. And they help us see and act more holistically by asking us questions that direct our attention to important aspects of water and fertility systems we might otherwise overlook.

Brad Lancaster

Brad Lancaster is a dynamic teacher, consultant, and designer of regenerative systems that sustainably enhance local resources and our global potential. He is the author of the award-winning, best-selling book series Rainwater Harvesting for Drylands and Beyond.

THURSDAY AFTERNOON SESSIONS

1:30	2:00	2:30	3:00	3:30
Meet the Speaker Dr. Ann Wilkie	<i>B- Visitor Center</i>	Break	Meet the Speaker Brad Lancaster	<i>B - Visitor Center</i>
Grafting - Session 1 Crafton Clift, David & Jenny Burd and Lloyd Marsh	<i>K - Maintenance Shop Overhang W</i>		Grafting - Session 2 Crafton Clift, David & Jenny Burd, and Lloyd Marsh	<i>K - Maintenance Shop Overhang W</i>
Bamboo harvest, treatment, and utilization Craig Bielema	<i>F - Bamboo Courtyard</i>		Theology of agriculture Andy Cotarelo	<i>F - Bamboo Courtyard</i>
Sustainable clean cook stove fuel: From field to table Tom Setchel	<i>H - AT Center</i>		Sustainable clean cook stove fuel: From field to table Tom Setchel	<i>H - AT Center</i>
Meet the Speaker Dr. Roy Beckford	<i>T - Global Farm Classroom</i>		Principles of community development Tim Albright	<i>N - Rainforest Clearing</i>
Green manure / cover crops Dr. Tim Motis	<i>L - PLC</i>		Pure water does grow on trees! Rick Kemmer	<i>L - PLC</i>
International transitions: Surviving or thriving Ellen Hargrave	<i>D - Tech Bldg Classroom</i>		Nutrition anti-nutrients and toxins Dr. Martin Price	<i>D - Tech Bldg Classroom</i>
Birds: Friend or foe in the agricultural landscape Bob Hargrave	<i>N - Rainforest Clearing</i>		Dryland farming Bob Hargrave	<i>Q - Semi-Arid</i>

THURSDAY AFTERNOON SESSIONS I (1:30 - 2:30)

Complete profiles of all session speakers are available in the Session Leader Bios section of this book

Meet the Speaker Dr. Ann Wilkie	<i>B - Visitor Center</i>
See Presentation summary and biography from morning talk.	
Grafting - Session 1 Crafton Clift, David & Jenny Burd, & Lloyd Marsh	<i>K - Maintenance Shop Overhang W</i>
Grafting tropical fruit and nut trees is such a popular subject that every year ECHO has grafting workshops at all afternoon sessions. Topics: Each afternoon during the first session, the teaching team will determine the interests and experience level of each delegate and then offer personalized instruction. The first session usually involves instruction and demonstration.	
Bamboo harvest, treatment, and utilization Craig Bielema	<i>F - Bamboo Courtyard</i>
This workshop will introduce participants to post-harvest bamboo care and application, including methods of preservation and construction techniques such as forming joints.	



Sustainable clean cook stove fuel: From field to table	<i>H - AT Center</i>
<i>Tom Setchel</i>	
This live demonstration of the “field to cook stove” process will result in sustainable, clean burning ethanol cooking fuel produced from sugarcane. Over two workshop sessions, we will be crushing the cane, demonstrating the fermentation and distillation processes and also cook on a stove recently designed and built to burn ethanol in Haiti.	
Meet the Speaker	<i>T - Global Farm Classroom</i>
<i>Dr. Roy Beckford.</i>	
See Presentation summary and biography from morning talk.	
Green manure/ cover crops	<i>L - Peckham Learning Center</i>
<i>Dr. Tim Motis, ECHO's Director of Research and Ag Tech</i>	
Dr. Motis will present an overview of the use of tropical legumes as green manure/cover crops. Drawing on findings from ECHO research, this talk will cover 1) benefits of legumes, 2) basic characteristics and growth requirements of some commonly grown legumes, and 3) ways to integrate these into smallholder farming systems. Some initial information will be presented via PowerPoint, followed by a farm walk to take a look at legumes being grown at ECHO.	
International transitions: Surviving or thriving	<i>D - Tech Bldg Classroom</i>
<i>Ellen Hargrave, Africa Inland Mission</i>	
Those of us involved in international mission or development work find ourselves leaving one culture and entering another - and then probably re-entering as well. In this workshop Ellen will introduce strategies for handling these transitions effectively.	
Birds: Friend or foe in the agricultural landscape	<i>N - Rainforest Clearing</i>
<i>Bob Hargrave, ECHO's Technical Research Specialist</i>	
Mentioning birds and agriculture in the same sentence usually brings to mind images of scarecrows or flocks of birds decimating grain fields in Africa. But birds do have their role in a healthy agro-ecosystem. In this workshop we will consider both negative impacts and ecosystem services provided by birds. We will also spend part of the session finding and identifying birds at ECHO. Bring binoculars if you have them.	

Today's lunch generously provided by:
Lee County Homeschoolers

THURSDAY AFTERNOON SESSIONS II (3:00 - 4:00)

Meet the Speaker	<i>B - Visitor Center</i>
<i>Brad Lancaster</i>	
See Presentation summary and biography from morning talk.	
Grafting - Session 2	<i>K - Maintenance Shop Overhang W</i>
<i>Crafton Clift, David & Jenny Burd, and Lloyd Marsh</i>	
Second session delegates who attended any first session will have opportunity to practice grafting techniques.	
Theology of agriculture	<i>F - Bamboo Courtyard</i>
<i>Andy Cotarelo, ECHO's Farm Manager</i>	
<p>Since a declining percent of the US population is involved in all aspects of food production in the last century, our ability to understand the Bible from an agrarian perspective has become more difficult. What does my faith have to do with farming? What does Jesus have to with my agricultural practices? Farming is much bigger than producing food; there are economic, social, ecological and spiritual ramifications. We will look at what scripture says about different agricultural systems such as; regenerative agriculture; sacredness of soil, and the Christology of compost.</p>	
Sustainable clean cook stove fuel: From field to table	<i>H - AT Center</i>
<i>Tom Setchel</i>	
<p>Over two workshop sessions, we will be crushing the cane, demonstrating the fermentation and distillation processes and also cook on a stove recently designed and built to burn ethanol in Haiti.</p>	
Principles of community development	<i>N - Rainforest Clearing</i>
<i>Tim Albright, ECHO's Chief Operations Officer</i>	
<p>This will be a brief review and discussion on what does and does not constitute community development. Different levels of interaction within community development will be explored considering some of the dangers of dependency and the importance of empowerment.</p>	
Pure water does grow on trees!	<i>L - Peckham Learning Center</i>
<i>Rick Kemmer</i>	
<p>Are you curious about how moringa seeds can remove 90-99% of the impurities from dirty water? Come and see it in action! While we are thrilled with what moringa seeds can do on their own, we are working to develop an even better process utilizing functionalized sand (a combination of crushed moringa seed powder and sand) which will give people the ability to have a continuous source of pure water. We also need your help! Come brainstorm with us to identify ways to create an in-home functionalized sand water filter. Our goal is for the filter to be made from items that can be sourced at the village level and can then be replicated by others.</p>	
Nutrition, anti-nutrients, and toxins	<i>D - Tech Bldg Classroom</i>
<i>Dr. Martin Price, Former CEO and Founder of ECHO</i>	
<p>With an academic background in biochemistry and having studied and promoted a wide range of crops for global food security over the past four decades, Dr. Price will discuss nutrients, anti-nutrients, toxins, and health in the context of the Westerner eating and working with impoverished people around the world.</p>	
Dryland farming	<i>Q - Semi-Arid</i>
<i>Bob Hargrave, ECHO's Technical Research Specialist</i>	
<p>Dryland farming principles learned from Bob Hargrave's experience in East Africa. This will be a discussion of the challenges to agriculture, the resources available and strategies for crop production in semi-arid areas.</p>	

