

Ecological Society of America Annual Meeting Report

96th Annual Meeting of the Ecological Society of America
“Earth Stewardship”
August 7th – August 12th, 2011 Austin, TX

1) Meeting Overview

SEEDS supported 33 students to attend the 2011 ESA Annual Meeting (27 undergraduate students and six SEEDS alumni students). The breakdown of funding was as follows: Fifteen NSF-funded undergraduate students; six SEEDS-funded undergraduate students; two SEEDS Chapter funded students (Stanford University and University of Michigan); four undergraduate students funded through a partnership with Dr. Emanuel and the NSF Research Initiation Grant to Broaden Participation, four USDA-Forest Service funded alumni and two alumni supported through the generous donations of ESA Members.

Each undergraduate student selected a mentor to work with during the week via an on-line process and thus, 27 mentors were selected to participate in the 2011 SEEDS program at the ESA Annual Meeting (See Appendix A). Eighty percent of SEEDS students presented their research (seventeen poster presentations and ten talks). A full list of SEEDS participant presentations can be found in Appendix B. In addition to presenting their research, SEEDS student leadership at an ESA meeting was at an all time high. SEEDS students and alumni led:

- **two field trips** (an Urban Bioblitz as part of the SEEDS Education and Outreach Initiative (SEOI) and a “Toxic Tour” in collaboration with the Environmental Justice section;
- a **symposium** on Revolutionary Ecology Part II: Defining and Conducting Stewardship and Action as Ecologists and Global Citizens;
- an **organized oral session** on Action Ecology for All;
- and **two workshops** (Diversity and Inclusiveness sponsored by the SEEDS Network of Alumni and Professionals (SNAP), and an Active Ecologists Guidebook). Three students served as **panelists** at the Diversity Luncheon and SEEDS alumni led the Diversity Mixer events.

Several events were planned specifically for SEEDS participants and mentors, most all of which were led by SEEDS students and alumni. These events included a student orientation, a participant outing led by alumni, a mentors’ orientation led by SNAP, a participant welcome dinner, a student/mentor breakfast, a Chapter workshop, and a closing. SEEDS participants also took part in meeting-wide activities such as the Diversity Mixer which highlighted students and chapters for their accomplishments, the Diversity Luncheon where SEEDS students and alumni sat on a panel discussing Latina Women in Ecology, in addition to attending the oral and poster sessions, symposia, workshops, and special sessions in which they were interested. A SEEDS schedule of events can be found in Appendix C. Photos from the Annual Meeting can be found at <http://www.esa.org/seeds/photoalbum/thumbnails.php?album=37>.

2) Meeting Mentor Program

Students selected a meeting mentor with common research interests through an on-line process. Staff also also matched SEEDS students with an alumni mentor. Alumni mentors are former SEEDS students that have previously participated in an ESA meeting. Four alumni mentors attended the meeting with support from SEEDS. Alumni mentors provided near-peer support intended to help students feel comfortable at the meeting.

The ESA member mentors provided support for the students during the meeting. Mentors helped students network with other ESA members, guided students through all of the options of sessions to attend, and provided academic and career advice. Mentors volunteered to be involved with SEEDS, and were selected online by the students based on the closeness of the match with mentor and students' interest area as well as their interest in mentoring a SEEDS student. A list of mentors and their research areas can be found in Appendix D.

3) Orientations

The alumni mentor orientation was held by phone prior to the meeting on Thursday July 28th. Each alumnus was assigned between six and seven students to get to know at the meeting. Participants discussed ways to formally and informally help students during the Annual Meeting, reflecting on what worked for them in meetings past and as SEEDS students themselves. Participants were given ideas for outings in Austin that would acquaint their student group with the city and help build camaraderie among the group.

Saturday, August 7th was orientation day for the student participants. Alumni attended this meeting as well. After dinner, students were given an overview of the Annual Meeting and expectations for the week. Students received their individual student binders containing meeting materials and participated in a diversity themed icebreaker. Following the orientation alumni led their students on outings in Austin. Alumni and students visited various sites in Austin including a Mexic-Arte Museum and Austin's Museum of the Weird where they purchased fake mustaches to wear in Austin. Some even visited Congress Bridge to see thousands of bats fly out for the night.

The mentor orientation was held in two sessions on Sunday August 8th. One in the morning led by staff with a portion dedicated to discussion from SNAP's Diversity and Inclusiveness workshop. The second was WK 13 - Fostering Diversity and Inclusiveness in Ecology and was held that afternoon. In both sessions an important and enlightening dialogue was held for personal exploration and reflection on the importance of diversity and some in depth concepts on inclusiveness. SEEDS Alumni contributed by speaking candidly on their experiences as a minority and what it has meant to be SEEDS students. They also gave insight on how the Mentors they'd had as students provided them with a meaningful experience despite the relatively short period of time they had together. Finally tips were given on how to use many of the things discussed to build a stronger connection with their mentees.

The SEEDS Welcome dinner followed the ESA Opening Plenary on Sunday August 8th. The dinner included all SEEDS participants: students, mentors, alumni, SEEDS staff and invited Chapter faculty advisors. This was the first opportunity many student participants and mentors had to meet in person and get to know each other. Seating was assigned to ensure students and mentors had space to interact. Teresa Mourad gave an exciting and uplifting welcome to the group.

4) SEEDS Campus Ecology Chapter Workshop

SEEDS sponsored a SEEDS Campus Ecology Chapter workshop on Wednesday, August 10th. The lunchtime workshop provided an opportunity for all Chapters represented at the meeting to share one of their greatest accomplishments over the last year. Each Chapter representative (students only) gave a three minute overview of their chapter. Other chapter students and guests in attendance were also given the opportunity to speak including high school participants invited from the SEOI BioBlitz. The workshop was also intended for students or faculty who were interested in starting a SEEDS Chapter at their home institution. A discussion followed the student presentations on what chapter might be

interested in doing with a \$1,000 special project grant provided for by the USDA Forest Service. The room was broken up into four breakout groups by interest. The discussion group topics included:

- Community development and or outreach projects.
- Chapter collaboration efforts.
- Chapter research projects.
- Wild Card (other interests or ideas).

Table 1. SEEDS Chapter representatives presenting Chapter activities at the ESA meeting.

1. Arizona State University	Songling Du & Ricardo Duran
2. College of Menominee Nation	Dean Davis
3. Florida Atlantic University	Josh Scholl
4. Howard University	
5. Johnson C Smith University	Rolanda Sue
6. Livingstone College	Joey Johnson
7. Northern Arizona University	Jessica Guo
8. Stanford University	Érica Fernández, Joanna Rosene-Mirvis, Kimberly Gibson
9. SACNAS	Cynthia Wright
10. Texas A&M University	Ricardo Colón-Rivera
11. Universidad Metropolitana	Nelson Bonilla
12. University of CA, Berkeley	Evan Portier
13. University of Hawaii, Manoa	Russell Auwae & Damian McPherson
14. University of Michigan	Tiffany Carey, Gisela Alvarez and Iman Sylvain
15. University of PR, Humacao	Carlos Zayas
16. University of PR, Rio Piedras	Beatriz Otero Jimenez & Ana Elisa Pérez-Quintero
17. University of PR, Bayamon	Stephanie Cruz Maysonet
18. Oregon State University	Nathanael Eisenhut

5) SEEDS Advisory Board Meeting

The Board met Tuesday morning. The meeting began with a program update then went on to discuss the future direction of the program. Big discussion items included the following questions:

- What components are missing in the current programming to achieve a progression of activities from introductory to advanced levels in terms of fostering careers in ecological research and action ecology?
- What key opportunities should SEEDS align with and develop over the next three to five years?
- What are the challenges for these alignments?

Much focus was given to developing ideas on a more comprehensive program that would provide a direct pipeline from perhaps the high school level to leadership in the ESA community.

6) Diversity Mixer

This event attracted more than 250 people. The Diversity Mixer theme was again “SEEDS in Action” following the increased momentum on SEEDS Action in ecology movement. Kellen Marshall-Gillespie, SEEDS Alumni from University of Illinois-Chicago was incredible as the MC for the presentation during the mixer. After a welcome by ESA President Terry Chapin and warm words from Meg Lowman and Nancy Grimm, Erica Fernandez of Stanford University introduced the seven exhibitors in the SEEDS annual career fair (a full list of exhibitors can be found in Appendix E), Erica also presented the Outstanding Achievement awards for 2011. Charlee Glenn, Diversity Program Assistant for the SEEDS Program presented the 2011 Chapter of the Year awards. Recognition was

given to the Honorable Mention: Florida Atlantic University SEEDS Chapter, accepted by Josh Scholl, Runner-Up: College of Menominee SEEDS Chapter, accepted by Dean Davis and the 2011 SEEDS Chapter of the Year Winner: University of Puerto Rico, Bayamon LIFE Chapter accepted by Stephanie Cruz-Maysonet..

7) North Carolina Secondary Succession Meeting

The NC Succession Meeting, Wednesday August 11th marked the end of the year long project. Education & Diversity Programs Director, Teresa Mourad and Diversity Program Assistant Charlee Glenn met with project PI Ryan Emanuel, PhD, the four representing students and faculty members who participated in the research. The group recapped their experiences in participating with the project and thoughts for continuing the program. Evaluations were taken by faculty and students. Discussion continued with Ryan and faculty about continuing the project.

8) Student and Mentor Evaluations

Students and mentors were sent an on-line survey following the meeting. Results are presented below.

Students

Students were given the opportunity to rate several aspects of the annual meeting on a seven point scale, with one being the least and seven being the highest. Overall, students rated the ESA Annual Meeting as a highly positive experience. In all categories concerning their experience at the annual meeting the students indicated scores above six or seven point scale. Rated especially high (6.5 and 6.45 out of 7 respectively) was the opportunity to interacting with SEEDS students and learning about ecology initiatives/projects in which I would like to become involved. From the high ratings in all the aspects of the ESA Annual Meeting we can only conclude that the program is a tremendous benefit to students, their interest in ecology and their professional development as budding ecologists.

In thinking about SEEDS program support during the ESA Annual Meeting, students indicated that the SEEDS program enhance their overall meeting experience (6.82 out of 7), and their comfort level at the meeting by being a part of a small group within a large meeting (6.77 out of 7). The SEEDS program received high marks in all categories with the lowest being 6.23 out of 7 in the program's ability to enhance the student's networking capabilities by being matched with a mentor and meeting other SEEDS students. There was a significant increase from last year in students being encouraged to become members of the ESA in the future (6.68 out of 7).

Regarding students' ratings of their mentors, the highest rated (6.5 and 6.14 out of 7) included: approachability of their mentors, and how satisfied they were with the match, respectively. The lowest rated aspects of student mentors included how available their mentors were (5.55 out of 7), and how likely they were to keep in touch with their mentors after the meeting (5.59 out of 7), which are still relatively high scores. The evaluation indicated that the mentor aspect of SEEDS appears to be a critical component to SEEDS student meeting success at the ESA Annual Meeting.

Student responses to the open-ended questions were particularly insightful as they offered their thoughts, feelings and elaborations on the questions posed about other meaningful aspects of the meeting that increased to motivation in ecology:

- Although I have been really committed to the field of ecology since I participated in activities like REU and SEEDS field trips, my awareness about the many different branches in the field was not so clear, I think this meeting make me aware about the many different branches of ecology, and also with all the experiences I went through in this meeting, it makes me do a lot of brainstorming about the specific field that I want to pursue my graduate studies.
- The exposure to all the different talks and sessions really shocked me at the diversity of research fields in ecology. By going to probably more than thirty talks and taking notes, I was

able to really identify a captivating area of interest and look at different grad school programs.
Thanks!

- Really what the role of ESA was. I had heard of it many times before and had an idea of the purpose of the organization, but did not fully understand until after the meeting
- My thoughts about diversity and the ESA were changed as a result of exposure to the incredible diversity developing in ESA and the broad range of research being conducted by its members.
- Realizing the need to use ecology for the advancement of societal needs and sustainability; also, just an overall appreciation of nature that is applicable to all fields of study.

For the full student survey results, see Appendix F.

Mentors

Mentors rated their SEEDS mentoring experience with students equally well. The most common reason mentors volunteered was that they were convinced ecology needs a diverse population to be a strong and relevant science (94.6%). This is an encouraging result given its consistency with the SEEDS mission.

All of the mentors corresponded with their mentee prior to arriving at the ESA Annual Meeting, and more than 72% of mentors met with their mentee at least once a day during the ESA Annual Meeting. 90% of the mentors plan to keep in touch with their mentee following the meeting.

Mentors rated their ability to positively influence their mentee and overall level of professionalism as the highest categories in level of satisfaction with their mentees. Lowest rated was their punctuality for meeting times.

Things that helped mentors be good in their role included getting to know their mentee personally time during the Saturday SEEDS welcome dinner and the online student selection of mentors (the fact their mentees chose them). Lowest rated was the mentors' own former experience as a mentee themselves. 69% of mentors were leaving with a deepened understanding of the SEEDS program and its mission, 61.8% with a continued commitment to helping diversity the ecology profession, and 85.4% with a desire to continue working with SEEDS students.



Appendix A SEEDS Participants

Ecological Society of America 96th Annual Meeting
August 6th - August 12th, 2011 ♦ Austin, Texas

*Indicates Alumni Mentor match

Students	Mentors
Russell Auwae University of Hawaii at Manoa rauwae@hawaii.edu	Wendy Yang University of California, Berkeley wendy_yang@berkeley.edu
Omar Bonilla Universidad Metropolitana omi.bonilla@gmail.com	Louie Yang University of California, Davis lhyang@ucdavis.edu
Harriett Brown University of Missouri htbtzc@mail.missouri.edu	*Christopher Cheleuitte Nieves Texas A&M University cheleuitte@tamu.edu
Tiffany Carey University of Michigan tifcarey@umich.edu	Emily Moran National Institute for Mathematical and Biological Sciences moranev@nimbios.org
Stephanie Cruz Maysonet University of Puerto Rico lady_ng6@hotmail.com	Catherine Hulshof University of Arizona hulshof@email.arizona.edu
Dean Davis College of Menominee Nation DavisD_0729@menominee.edu	Laurie Marczak University of Montana laurie.marczak@cfc.umt.edu
Songling Du Arizona State University songling.du@gmail.com	*Amber Finley Northstar Council adfinley@dons.usfca.edu
Ricardo Duran Arizona State University rduran3@asu.edu	David Knochel University of Colorado at Boulder, INSTAAR DAVID.KNOCHEL@COLORADO.EDU
Nathanael Eisenhut Oregon State University eisenhutn@hotmail.com	Nancy Grulke US Forest Service, Pacific NW Research Station ngrulke@fs.fed.us
Érica Fernández Stanford University ericaf3@gmail.com	Lis Castillo Nelis Stanford University lnelis@stanford.edu
Dana Galván Rice University dcg8@rice.edu	Sean Moore National Center for Atmospheric Research smoore@ucar.edu
Damian McPherson University of Hawaii at Manoa damianmc@hawaii.edu	Kyla Dahlin Stanford University kmd35@stanford.edu
Beatriz Otero Jimenez University of Puerto Rico, Rio Piedras beatrizotero99@gmail.com	Christopher Anderson Sub-Antarctic Biocultural Conservation Program, UNT Christopher.Anderson@unt.edu
Rachel Perez Alcaraz University of California, Riverside rpere015@ucr.edu	Kimberly Williams-Guillen University of Washington Bothell kimwilliamsg@gmail.com

Students	Mentors
Ana Elisa Pérez-Quintero <i>University of Puerto Rico, Rio Piedras</i> p.anaelisa@gmail.com	Jennifer Momsen <i>North Dakota State University</i> jennifer.momsen@ndsu.edu
Dayani Pieri <i>Oakton Community College</i> dapieri@flash.net	Naupaka Zimmerman <i>Stanford University</i> naupaka@stanford.edu
Evan Portier <i>University of California, Berkeley</i> eportier@berkeley.edu	Rebecca Trueman <i>Concordia University Chicago</i> rebecca.trueman@cuchicago.edu
Joanna Rosene-Mirvis <i>Stanford University</i> jorosene@stanford.edu	Mark Brunson <i>Utah State University</i> Mark.Brunson@usu.edu
Joshua Scholl <i>Florida Atlantic University</i> jscholl1@fau.edu	Louis Gross <i>The Institute for Environmental Modeling (TIEM) University of Tennessee</i> gross@tiem.utk.edu
Cynthia Wright <i>Texas A&M University</i> c_wright@tamu.edu	Alexandria Poole <i>Sub-Antarctic Biocultural Conservation Program, UNT</i> alexandria.poole@gmail.com
Carlos Zayas <i>University of Puerto Rico, Humacao</i> zayas.carlos30@gmail.com	Claire Lunch <i>Marine Biological Laboratory</i> clunch@mbi.edu
Zach Barthel <i>University of North Carolina, Pembroke</i> zeb002@bravemail.uncp.edu	Craig Young <i>National Park Service</i> craig_young@nps.gov
Joey Johnson <i>Livingstone College</i> joeyj154@yahoo.com	Nicole Soper Gorden <i>University of Massachusetts</i> nsopereg@cns.umass.edu
TJ Souther <i>Western Carolina University</i> tjsouther1@catamount.wcu.edu	Scott Collins <i>University of New Mexico</i> scollins@sevilleta.unm.edu
Rolanda Sue <i>Johnson C Smith University</i> rsue@jcmail.jcsu.edu	*Zakiya Leggett <i>Weyerhaeuser Company</i> zakiya.leggett@weyerhaeuser.com
Gisela Alvarez <i>University of Michigan</i> gisela8@live.com	Luben Dimov <i>Alabama A&M University</i> luben.dimov@gmail.com
Kimberly Gibson <i>Stanford University</i> kjgibson@stanford.edu	*Colibri Sanfiorenzo-Barnhard <i>Grupos Ambientales Interdisciplinarios Aliados (GAIA)</i> guacariga@gmail.com
Alumni Mentors	
Ricardo Colón-Rivera <i>Texas A&M University</i> ricardojcolon@gmail.com	Jessica Guo <i>Northern Arizona University</i> jsg88@nau.edu
Kellen Gillespie <i>University of Illinois-Chicago</i> kmarsh9@uic.edu	Iman Sylvain <i>University of Michigan</i> imansylvain@yahoo.com



Appendix B

SEEDS Participants Presentation Schedule

Ecological Society of America 96th Annual Meeting
August 6th - August 12th, 2011 ♦ Austin, Texas

SEEDS Participants' names are in bold

MONDAY, August 8th

1:30 PM – 5:00 PM

ORAL SESSIONS

Contributed Oral Paper 9-3 - Pollination I:

Room 9C, Austin Convention Center

2:10 PM Does a shift to small flowers in annual groundcherries leave specialist pollinators behind?
Stephanie Cruz Maysonet, University of Puerto Rico in Bayamón; T'ai H. Roulston, University of Virginia

4:30 PM – 6:30 PM

POSTER SESSIONS

Exhibit Hall 3

Poster Session 5 - Stewardship:

#60 Environmental Rhetoric and Communication Strategies
Kimberly Gibson, Stanford University

Poster Session 7 - Community Disturbance and Recovery:

#67 Assessing secondary ecosystem succession in Livingstone Forest, NC
Joey Johnson, Livingstone College; Ezra Mutai, Livingstone College; Andrew West, Livingstone College; Sashikala Sabaratnam, Livingstone College; Ryan E. Emanuel, North Carolina State University

Poster Session 8 – Community Pattern and Dynamics:

#76 Ground truthing LIDAR data within a successional diverse piedmont forest
Rolanda Sue, Johnson C. Smith University; Joseph L. Fail Jr., Johnson C. Smith University; Jamaal Jackson, Johnson C. Smith University; Megan Talley, Johnson C. Smith University; Michelle Jackson, Johnson C. Smith University; Camille Grimsley, Johnson C. Smith University; Ryan E. Emanuel, Appalachian State University

Poster Session 8 – Community Pattern and Dynamics:

#85 Assessment of secondary ecosystem succession in Hoke County, North Carolina
Zach E. Barthel, University of North Carolina at Pembroke; Doshie A. Smith, University of North Carolina at Pembroke; Caleb J. Sutton, University of North Carolina at Pembroke; Ryan E. Emanuel, North Carolina State University; Leon S. Jernigan, University of North Carolina at Pembroke

Poster Session 8 – Community Pattern and Dynamics:

#89 Population dynamics and growth patterns of reintroduced Gunnison's prairie dog colonies at the Sevilleta National Wildlife Refuge, and their impact on the preexisting vegetative community
Ricardo Duran III, Arizona State University

Poster Session 14 – Agroecology:

#167 Landscape resistance to dispersal of a common poison frog in the lowlands of northeastern Costa Rica
Beatriz Otero-Jiménez, University of Puerto Rico Rio Piedras Campus; A. Justin Nowakowski, Florida International University

TUESDAY, AUGUST 9th

8:00 AM – 11:30 AM

SYMPOSIUMS

Symposium 4-4 - Building a Global Sense of Place, Responsibility, and Stewardship:
Ballroom E, Austin Convention Center

9:10 AM Identifying drivers of biocultural homogenization and an urban sense of place

Alexandria K. Poole, Center for Environmental Philosophy, Institute of Applied Science, University of North Texas; Ricardo Rozzi, University of North Texas and University of Magallanes - Institute of Ecology and Biodiversity, Chile; **Ana Elisa Pérez-Quintero**, University of Puerto Rico; Yanet Medina, Universidad de Magallanes Programa de Conservación Biocultural Subantártica - Parque Etnobotánico Omora

1:30 PM – 5:00 PM

ORAL SESSIONS

Contributed Oral Paper 47-7 – Reptiles and Amphibians:
Room 18A, Austin Convention Center

3:40 PM Distribution and habitat use of the gopher tortoise (*Gopherus polyphemus*) in a declining southeast Florida conservation area

Joshua P. Scholl, Florida Atlantic University (SEEDS Student); Leonardo Calle, Florida Atlantic University (SEEDS student); Evelyn M. Frazier, Florida Atlantic University; Tobin Hindle, Florida Atlantic University

4:30 PM – 6:30 PM

POSTER SESSIONS

Exhibit Hall 3

Poster Session 15 – Climate Change:

#7 Effects of sea level rise on a rare *Pterocarpus* forested wetland in Puerto Rico

Ricardo J. Colón-Rivera, Texas A&M University; Rusty A. Feagin, Texas A&M University; Jason B. West, Texas A&M University

Poster Session 21 – Wetlands:

#90 Root Nodulation in the wetland tree *Pterocarpus officinalis* along coastal and montane systems of northeast of Puerto Rico

Rachel G. Perez, East Los Angeles College; T. Heartsill Scalley, International Institute of Tropical Forestry

Poster Session 22 – Coastal habitats:

#98 A new bio-bay: Bioluminescence in the Humacao Natural Reserve, Puerto Rico

Carlos M. Zayas-Santiago, University of Puerto Rico at Humacao; **Ricardo J. Colón-Rivera**, Texas A&M University; Rusty A. Feagin, Texas A&M University

Poster Session 30 – Urban Ecosystems:

#170 Pollen and public health: A citizen science project

Tiffany S. Carey, University of Michigan, Ann Arbor; Daniel W. Katz, University of Michigan

WEDNESDAY, AUGUST 10th

8:00 AM – 11:30 AM

ORAL SESSIONS

Organized Oral Session 21 – Earth Stewardship: Communicating and Fostering Stewardship Behavior:
Room 17A, Austin Convention Center

10:50 AM From knowledge to action: Creating a social movement

Erica Fernandez, Stanford University

1:30 PM – 5:00 PM

ORAL SESSIONS

Organized Oral Session 30 – We are all Connected: From Environmental Justice Education and Local Community Involvement to Earth Stewardship:

Room 14, Austin Convention Center

1:30 PM Thinking globally, acting locally - what does this mean for today's ecologists?

Ana Elisa Pérez-Quintero, University of Puerto Rico; Leanne M. Jablonski, Marianist Environmental Education Center

4:30 PM – 6:30 PM

POSTER SESSIONS

Exhibit Hall 3

Poster Session 34 – Behavior:

#11 How pebble size affects logperch (*Percina caprodes*) foraging behavior

Harriett Brown, University of Missouri; Jeffrey D. Fore, University of Missouri; Douglas B. Noltie, University of Missouri

Poster Session 53 – Remote Sensing and Image Analysis:

#174 Secondary forest succession quantification using LIDAR analysis in the southern Appalachians

Tucker J. Souther, Western Carolina University; Robbie G. Kreza, Western Carolina University; Marcus C. Mentzer, Western Carolina University; Brian D. Kloeppe, Western Carolina University; Ryan E. Emanuel, North Carolina State University

Poster Session 53 – Remote Sensing and Image Analysis:

#176 Assessment of secondary succession in North Carolina: Advancing understanding of successional vegetation through coupled field and remote sensing studies

Ryan E. Emanuel, North Carolina State University; **Zach E. Barthel**, University of North Carolina at Pembroke; Jamaal Jackson, Johnson C. Smith University; Michelle Jackson, Johnson C. Smith University; **Joey Johnson**, Livingstone College; Robbie G. Kreza, Western Carolina University; Marcus C. Mentzer, Western Carolina University; Ezra Mutai, Livingstone College; Doshie A. Smith, University of North Carolina at Pembroke; **Tucker J. Souther**, Western Carolina University; **Rolanda Sue**, Johnson C. Smith University; Caleb J. Sutton, University of North Carolina at Pembroke; Megan Talley, Johnson C. Smith University; Andrew West, Livingstone College; Joseph Fail Jr., Johnson C. Smith University; Leon S. Jernigan, University of North Carolina at Pembroke; Brian D. Kloeppe, Western Carolina University; Sashikala Sabaratnam, Livingstone College

THURSDAY, AUGUST 11th

8:00 AM – 11:30 AM

SYMPOSIUMS

Symposium 17 - Revolutionary Ecology: Defining and Conducting Stewardship and Action as Ecologists and Global Citizens:

Ballroom G, Austin Convention Center

Moderated by: **Ricardo J. Colón-Rivera**

8:00 AM – 11:30 AM

ORAL SESSIONS

Contributed Oral Paper 86-2 - Urban Ecosystems I:

Ballroom B, Austin Convention Center

8:20 AM Why are total soil respiration measurements higher in urban forests than rural forests

Russell Auwae, University of Hawaii at Manoa

1:30 PM – 5:00 PM

ORAL SESSIONS

Contributed Oral Paper 104-1 – Stewardship, Education, and Outreach:

Ballroom B, Austin Convention Center

1:30 PM Progressive Ecology: Shifting the flow of conservation biology through involving communities in the Northeastern Ecological Corridor of Puerto Rico through research and its declaration of nature reserve

Ricardo Rivera, Northwestern University; **Ana Elisa Pérez-Quintero**, University of Puerto Rico - Río Piedras and SEEDS; Diana K. Guzmán, Northeastern Ecological Corridor, Coalition; Lourdes B. Lastra-Díaz, University of Puerto Rico, Río Piedras Campus; Sara B. Ocasio, University of Puerto Rico; Carmen Guerrero, Coalition Pro-Northeastern Ecological Corridor; Ramón Salazar, University of Puerto Rico - Río Piedras and SEEDS; Betsabé D. Castro-Escobar, University of Puerto Rico, Río Piedras Campus; **Beatriz Otero**, University of Puerto Rico Río Piedras Campus

4:30 – 6:30 PM

POSTER SESSIONS

Exhibit Hall 3

Poster Session 56 – Biodiversity :

#1 Biodiversity loss and reforestation in rural Maya Yucatan
Erica Fernandez, Stanford University

Poster Session 57 – Ecosystem Function :

#17 Priority effects on a marine fouling community: Changes on the community structure due to the first colonizer
Nelson Omar Bonilla, Universidad Metropolitana

Poster Session 61 – Invasion : Ecosystem Processes :

#60 The effects of invasive European buckthorn and restoration on microbial metabolic processes and fungal communities in an oak woodland
Dayani S. Pieri, Chicago Botanic Garden; Lauren A. Bailey, Lake Forest College; Andrew W. Wilson, Chicago Botanic Garden; Daniel J. Larkin, Chicago Botanic Garden; Louise M. Egerton-Warburton, Chicago Botanic Garden

Poster Session 61 – Invasion : Ecosystem Processes :

#61 Pepperweed invasion increases nitrogen cycling rates in a managed grassland
Evan Portier, University of California, Berkeley; Wendy H. Yang, University of California, Berkeley; Whendee L. Silver, University of California, Berkeley

Poster Session 68 – Biogeochemistry : Biogeo Patterns Along Environmental Gradients :

#145 The effects of pH on carbon mineralization to CO₂ and CH₄ in peatlands across an ombrotrophic-minerotrophic gradient
Nathanael M. Eisenhut, University of Oregon; Rongzhong Ye, University of Oregon; Brendan J. M. Bohannon, University of Oregon; Qusheng Jin, University of Oregon; Scott D. Bridgham, University of Oregon

Poster Session 69 – Biogeochemistry : C and N Cycling in Response to Global Change :

#164 Quantifying environmental and topographic controls on soil respiration in a montane drainage system
Rebecca L. Minor, University of Arizona; **Cynthia L. Wright**, Texas A&M University; Shirley A. Papuga, The University of Arizona; Greg A. Barron-Gafford, University of Arizona

FRIDAY, AUGUST 12th

8:30 AM – 10:30 AM

POSTER SESSIONS

Exhibit Hall 3

Poster Session 75 – Latebreaking : Biodiversity :

#20 Effects of production method and geography on the fungal community composition in green coffee beans
Iman Sylvain, University of Michigan; Timothy James, University of Michigan

Poster Session 82 – Latebreaking : Ecological Knowledge (Education, TEK, Philosophy) :

#95 Maximizing research efforts through PhD-mentored undergraduate research experiences: The humacao natural reserve
Ricardo J. Colón-Rivera, Texas A&M University; Rusty A. Feagin, Texas A&M University



Appendix C **SEEDS Schedule**

Ecological Society of America 96th Annual Meeting
August 6th - August 12th, 2011 ♦ Austin, Texas

Saturday, August 6

SEEDS Student Orientation, 4:00 – 7:00 pm, Skyline, Radisson Hotel

An orientation for SEEDS alumni and students to prepare for the meeting experience.

SEEDS Austin Stroll with Alumni, 7:00 – 8:30 pm

A walk through downtown Austin for evening sightseeing with SEEDS Alumni

Sunday, August 7

Mentor Orientation, 10:00 – 12:00 noon, 18C, Austin Convention Center

An orientation for SEEDS alumni and students to prepare for the meeting experience

SNAP Workshop (WK-13): "Diversity and Inclusiveness in Ecology" 12:30 - 4:30 14, Austin Convention Center

A personal exploration and professional development course on the relevance and importance of diversity, tolerance, and inclusiveness in the ecology community.

SEOI Field Trip (FT 14): "Urban Bioblitz: Ecologists Contributing and Learning from a Progressive Austin Community Restoration Effort" 8:00 am – 4:30 pm

SEEDS students and the Applied Ecology Section partnership field trip.

SEEDS Welcome Dinner, 7:00 – 9:00PM, Travis III, Radisson Hotel

A dinner and opportunity for SEEDS students and mentors to meet in person (for the first time) and plan for the week ahead.

Monday, August 8

SEEDS Breakfast, 7:00- 8:00 AM, Austin Convention Center, Room 18D

A breakfast for SEEDS students and mentors to plan for the week ahead.

ESA Undergraduate Student Orientation, 11:30 AM – 1:15 PM, Austin Convention Center, Room 7

In partnership with the ESA Student Section, a career panel will discuss opportunities in ecology and how to make the most of the ESA meeting.

Tuesday, August 9

SEEDS Advisory Board Meeting, 7:00 – 9:00 AM, Treaty Oak, Radisson Hotel

Planning of SEEDS program by SEEDS Advisory Board Members

SEEDS Professional Development – (WK 29): 11:30 AM-1:15 PM, 18A, Austin Convention Center

Learn the basics in writing for applying to graduate school. *(optional)*

Wednesday, August 10

SEEDS Chapter Workshop, 11:30 – 1:15, 6B, Austin Convention Center

An opportunity for new and established chapters to share their activities, ideas and plans

Diversity Mixer, 6:30 – 8:00, Austin Convention Center, Ballroom F

A dinner highlighting the SEEDS Program, showcasing the Chapter of the Year, and celebrating diversity on a whole.

SEEDS Student Workshop, WK 36 – The active ecologist: Developing a guide for how ecologists and communities can best collaborate for a healthier environment. 8:00 pm – 10:00 pm. Austin Convention Center, 19A

What should the role be of ecologists, other scientists and ecology students within community efforts? How active can we be in local and global issues as ecologists? How can the modern ecologist each do their part in communicating with the public and engaging communities in pertinent scientific issues that affect society's well-being? This interactive workshop will give feedback on the Ecologists' Guide to Working with Communities being developed by the Environmental Justice (EJ) Section.

Thursday, August 11

SEEDS Student Symposium, SYMP 17 - Revolutionary Ecology: Defining and Conducting Stewardship and Action as Ecologists and Global Citizens. 8:00 am – 11:30 am, Austin Convention Center, Ballroom G

The character of the numerous and grave problems facing human society—climate change, loss of biodiversity, lack of food security, loss of ecosystem services, environmental toxification, and others—are undeniably multi-faceted, cutting across not just academic disciplines but peoples, communities, and nations. Ecology, in its simplest formulation as the study of the interactions between organisms and their environment, is logically central to understanding and developing solutions to these problems; problems that have profound implications for livelihoods and justice. Yet if ecologists are to be leaders in facing these issues, or participate in "earth stewardship", we must recognize that such roles by definition require action. They require going beyond traditional roles and boundaries to learn and interact with a variety of other academic fields and communities. In doing so, we are essentially seeking to be action ecologists.

Diversity Luncheon: Careers in Ecology: The Glass Ceiling and Other Challenges / Carreras en Ecologia: El Techo de Cristal y Otros Desafios 11:30 am - 1:15 pm, Ballroom F, Austin Convention Center

SEEDS Closing, 4:00 – 5:00 pm, 19B, Austin Convention Center

SEEDS students convene for a wrap-up discussion and evaluations.

ESA Closing "An Austin Night for Nature", 8:00 – 10:00 pm ACL Moody Theater

Three local bands: Alejandro Escovedo and the Sensitive Boy, Carolyn Wonderland, and Hendrix and Maines. Come and hear this concert at the NEW home of the Austin City Limits, located only a few blocks from the Austin Convention Center.



Appendix D

SEEDS Mentor/Alumni* Research & Interest Areas

Ecological Society of America 96th Annual Meeting

August 6th- August 12th, 2011 ♦ Austin, Texas

***Amber Finley** (SEEDS Alumni)

adfinley@dons.usfca.edu

Northstar Council

My expertise really lies in Education and Outreach tied with Traditional Ecological Knowledge. I currently run a Science/Culture camp that in itself sounds like an oxymoron, but is actually quite the opposite. Our non-profit has just completed our first year of activities and many of them were strongly based in both Western Science and Traditional Native Knowledge perspectives. My Master's work focused on integrating Traditional Ecological Knowledge and it's holders into Ecosystem Management schemes. I also worked on Wetland Restoration projects during my studies at the University of San Francisco, with a particular emphasis in sediment dynamics and accumulation patterns. As an undergraduate I worked in several labs including a couple of genetics labs with a focus on molecular biology and the other on reptile sex determination. As a junior I was employed by one of my mentors to help on his dissertation project for Juneberry Restoration on my homelands at the Fort Berthold Indian Reservation.

Catherine Hulshof

hulshof@email.arizona.edu

University of Arizona, (Plant ecology)

Though my research interests are broad and cover topics ranging from physiology, ecology, evolution and biogeography, quantifying the degree, patterns and drivers of plant trait variation underlies most of my research projects. I have research sites in tropical (Costa Rica), subtropical (Arizona) and temperate (Oregon) ecosystems and study how climate and climatic variability affects plant trait variation and species' distributions along elevational and latitudinal gradients. I've also work on projects assessing the interaction between plant traits and caterpillar (Lepidoptera) diversity and function, the tradeoff between growth and reproduction in a tropical tree as well as plant diversity and function along a flooding gradient in wetland and limestone forests.

Christopher Anderson

Christopher.Anderson@unt.edu

Sub-Antarctic Biocultural Conservation Program, University of North Texas (Ecosystem Ecology)

Currently, I coordinate a binational research, education and conservation program between the University of Magallanes (Chile) and the University of North Texas (USA). I am also an assistant professor at both universities, focusing on the socio-ecological role of invasive species in novel communities and ecosystems. I focus my research on the socio-ecological role of invasive3 species in novel communities and ecosystems, but I have also dedicated significant time and effort to implementing long-term socio-ecological research programs, such as the Omora Park and the Cape Horn Biosphere Reserve that strive to link interdisciplinary research with education, conservation and other socially-relevant outcomes.

***Christopher Cheleuitte-Nieves** (SEEDS Alumni)

cheleuitte@tamu.edu

Texas A&M University, Graduate student (Animal ecology)

During my undergraduate program, I conducted studies on arthropod diversity and sea turtle conservation. I also was awarded a pre-veterinary internship, Vetward Bound Enrichment Summer Program, at Michigan State University. I participated in a study abroad experience in Costa Rica and Nicaragua with the Organization for Tropical Studies conducting research on arthropod ecology, avian behavior and fish distribution patterns. Furthermore, I worked for an equine and small animal clinic in Puerto Rico. My Ph.D. research aimed to better understand the movement patterns of free-ranging ungulates in semi-arid rangelands in South Texas. We used

Global Positioning System (GPS) collars, Geographic Information Systems (GIS) and remote sensing technology to evaluate the seasonal and diurnal patterns of a Bonsmara cattle herd spread and explore grouping dynamics, the influence of dominance ranks on spatial associations and the relationship between seasonal forage biomass, use of shade, water and supplemental feed areas on animal distribution. Finally, I also participated in an International Research Experience for Students (IRES) in the Magellan and Sub-Antarctic Region of Chile. Our research project was aimed to determine the spatial distribution patterns of invasive mammals such as beaver, American mink and muskrat in the Magellan and Sub-Antarctic Region. Next Fall 2011 I will start Veterinary school at Cornell University to complete the second half of my academic dream. After obtaining the DVM degree I hope to conduct research in the interface between veterinary epidemiology and animal behavioral ecology and to develop and implement effective and innovative diagnostic and treatment methods relevant to the field of veterinary medicine.

Claire Lunch

clunch@mbl.edu

Marine Biological Laboratory, Postdoctoral Scientist (Physiological ecology)

I work on plant physiology in the context of novel and/or changing environments. For my dissertation I used gas exchange techniques to study the response of a grassland ecosystem to a variety of resource additions. In my postdoc, I am investigating photosynthesis in green algae from cryptobiotic soil crusts, to identify adaptations associated with the movement of algae from aquatic to terrestrial environments.

***Colibri Sanfiorenzo-Barnhard (SEEDS Alumni)**

guacariga@gmail.com

Grupos Ambientales Interdisciplinarios Aliados (GAIA)

While I was an undergraduate student I was mainly conducting research in a Tropical Plant Ecology Laboratory that focused on plant-plant interaction at Mona Island, a protected area west of Puerto Rico. At the end of my undergraduate career I was a SEEDS Fellow and was able to conduct research at La Sepultura Biosphere Reserve in Chiapas Mexico. I looked at the distribution of trees in active pasturelands in an effort to transform conventional production system to sustainable systems (i.e agroforestry). Currently as a grad student I continue to conduct research in La Sepultura. I am using landscape ecology as a tool for developing adaptive land management that serve both biodiversity conservation and sustainable human development. My research since then has focused on using landscape ecology as a tool for land management in protected areas. I continue to work in La Sepultura and I am in the process of developing a research station so we can do long term research in the area.

Craig Young

craig_young@nps.gov

National Park Service, Federal employee (Plant ecology)

I have worked as a field ecologist with TNC, engaged in natural community descriptions and quality assessments in longleaf pine forests. I have worked with the Natural Heritage Program in Virginia as a land manager in coastal and pine-dominated systems. I currently work in the area of invasive plant monitoring and management. In addition, I monitor rare plants and wetlands for parks. Recent publications have focused on monitoring protocols and ecology of the rare Missouri bladderpod, as well as examination of the factors driving invasive plant distribution on parks.

David G. Konchel

DAVID.KNOCHEL@COLORADO.EDU

***University of Colorado at Boulder, INSTAAR (Institute for Arctic and Alpine Research),
2nd year Post Doctoral Research Scientist (Plant-insect interactions, non-native invasive plant management,
and ecological restoration)***

I am interested in how multiple biotic and abiotic factors govern plant growth and distribution, including herbivory, plant competition, disturbance, soil resources, landscape patterns, and climate. Present Research: Understanding how interactions of top-down (herbivory) and bottom-up (soil resources, plant competition)

factors influence plant population dynamics. My current research focus is on important rangeland weeds of western forests and grasslands, including Dalmatian toadflax (*Linaria dalmatica*), spotted knapweed (*Centaurea stoebe*), and winter annual species such as cheatgrass (*Bromus tectorum*). An emphasis is put on long-term and sustainable controls of nuisance plants in the face of multiple external drivers, with research that investigates controls on these species at various ontogenetic stages (seeds, seedlings, adult plants). Further, I seek to develop an extensive public outreach program in order to effectively transfer the latest scientific findings on the ecology of particular rangeland weeds to land managers, ranchers, and governmental agencies.

Emily Moran

moranev@nimbios.org

National Institute for Mathematical & Biological Sciences, Post-doctoral fellow (Plant ecology Forest ecology; population dynamics; global change; statistics)

I am interested in ecological and evolutionary responses to rapid environmental change. For my Ph.D., I studied seed and pollen dispersal, gene flow, and hybridization in oaks, using a mixture of ecological, genetic, and statistical tools. Currently, I am investigating the selective effect of CO₂ and ozone on aspen, the effect such selection may have on the genetic structure of plant populations, and the implications of shifts in plant genotype frequency for insect population dynamics.

Jennifer Momsen

jennifer.momsen@ndsu.edu

North Dakota State University, Faculty (Education and outreach)

My graduate work is in historical ecology. I investigated the driving forces shaping the formation of vegetation communities over three distinct temporal scales. With my postdoc, I shifted into education research, where I look at student understanding of complex systems, including the carbon cycle, and student quantitative reasoning abilities. I continue this line of research in my faculty position.

Alexandria Poole

alexandria.poole@gmail.com

Sub-antarctic Biocultural Conservation Program, UNT

Biocultural conservation acknowledges the inherent correlation between linguistic, cultural and biological diversity. The local ecological knowledge that is embedded in a local language is often lost as that language is replaced. This loss of oral knowledge alters the ability of the local community to live off the land, and has been described as an “extinction of experience” within a community. My inquiry looks into the extent to which urbanization, education, and technological development effect the relationship between the local community and their environment, and the consequences in terms of ecological and social well-being. My hope is that this work will help facilitate more ecologically and community oriented policy and education that integrate philosophy, sciences and public policy, while better understanding the homogenizing processes diminishing biodiversity.

Kimberly Williams-Guillen

kimwilliamsg@gmail.com

University of Washington Bothell, Faculty (Animal ecology)

I am a tropical ecologist, and my research focuses on the role of agricultural areas and other managed landscapes in the conservation of wildlife species. I also study the ecosystem services provided by wildlife. My current research centers on bats, and how agricultural intensification affects both the structure of bat communities and the ecosystem service of pest control provided by insect-eating bats. I have worked primarily in Mexico and Nicaragua for my research. In Mexico, I have studied bats in shade coffee plantations. In Nicaragua I have worked in a wide variety of ecosystems and land use types. If you are interested in animal ecology, wildlife management and conservation, tropical ecology, or agroecology, then I would be happy to provide you with some guidance and companionship at the ESA's in Austin this year, where I am co-organizer of a symposium on the ecosystem services provided by bats.

Kyla Dahlin

kmd35@stanford.edu

Stanford University, grad student (Terrestrial ecology)

My PhD research is focused on understanding the relative importance of environmental and stochastic controls on plant distributions. I work in a lab that uses advanced airborne remote sensing to produce very high resolution imagery (cao.stanford.edu), so now I spend about 80% of my time at the computer, 20% in the field. In the past I've worked as a restoration ecologist in a U.S. National Park and an urban forester in New York City.

Laurie Marczak

laurie.marczak@cfc.umt.edu

University of Montana, faculty (Aquatic ecology)

I am a food web ecologist working on questions primarily at the boundaries of aquatic and terrestrial systems. While the majority of my work is basic or theoretical in nature I also have extensive involvement in practical conservation questions (land use issues, invasive species etc).

Lis Castillo Nelis

lnelis@stanford.edu

Stanford University, postdoc (Terrestrial ecology)

I'm interested in community ecology, especially how invasive species interact with one another and how they become integrated into native communities. My Ph.D. research examined native and exotic plant responses to exotic European rabbits on Robinson Crusoe Island, Chile. My postdoctoral research is exploring how native and exotic plant resources are used by invasive Argentine ants, and how Argentine ants change interactions among native ants.

Louie Yang

lhyang@ucdavis.edu

UC Davis, assistant professor (Community ecology)

I am interested in how species interactions change over time. I study ecology at multiple time scales, including community responses to extreme events, changes in species interactions over ontogeny, and the effects of climate change on the timing of species interactions. I am particularly interested in understanding how species interactions change when communities are strongly perturbed, and seek to develop a general framework to understand when ecosystems show resilience and when they don't. In general, I am interested in how natural communities combine complex, coordinated and changing interactions over time. My research aims to integrate multiple perspectives in order to tackle emerging questions in complex systems. I attempt to draw insights from multiple avenues of inquiry, including field-based investigations in a wide range of ecosystems. I often seek to combine behavioral, population, community and ecosystem ecology to study a wide range of species interactions, including plant-herbivore, soil-plant, predator-prey, plant-pollinator, mutualistic and competitive interactions. Past research focuses on insect ecology and plant-insect-soil ecology.

Louis Gross

gross@tiem.utk.edu

The Institute for Environmental Modeling (TIEM) University of Tennessee, Faculty and Director of NIMBioS (Ecology and Math)

My work has included mathematical and computational models in physiological ecology, plant ecology, animal behavior, population and community dynamics, infectious diseases, landscape ecology and resource management. I have long been involved in modeling for Everglades Restoration as co-leader of the ATLSS (Across Trophic Level Systems Simulation) project, one of the largest ecological modeling linked to natural system planning projects ever attempted. I currently direct one of the major NSF-funded Centers (NIMBioS) that supports research and education across the interface of all of biology and mathematics.

Mark Brunson

Mark.Brunson@usu.edu

Utah State University, faculty member (Human ecology)

My research and teaching focus on the interconnections between ecological systems and human systems. Currently I'm especially interested in how differences and/or changes in human behavior lead to changes in ecological impact, and also why those behaviors occur. Mostly I work in the western U.S. My students and I are looking at indirect ecological effects of motorized recreation in Southwest deserts, effects of climate change on flowering desert plants (and why managers don't recognize them), human responses to non-native frog invasion in Hawaii, and use of resilience theory to design adaptive management strategies for national park ecosystems.

Nancy Grulke

ngrulke@fs.fed.us

US Forest Service, Pacific NW Research Station, Federal research scientist

Director, Western Wildlands Environmental Threats Assessment Program (Plant ecology)

Current work: interdisciplinary work on pine drought stress, bark beetle attack, and remotely detected stress and attack from southern California to central Oregon; interdisciplinary work on the role of oak drought stress in oak susceptibility to new, aggressive, invasive wood borer; stomatal mechanisms of response to elevated ozone and CO₂ exposure in pines, fir, beech, oaks, endangered native species, and some crops. Past research: grass stress physiology, grass populations dynamics, and CO₂ balance of arctic and polar desert ecosystems; ecophysiology of oaks, pines, firs, and giant sequoia in the western US; long term community response to disturbance in arctic and alpine ecosystems

Naupaka Zimmerman

naupaka@stanford.edu

Stanford University, graduate student (Microbial ecology)

Originally I got fascinated by ecology through several experiences with forest ecology in college, and then through several summer internships in Hawaii working for the USDA Forest Service doing invasive species research in lowland wet forests in Hawaii (mostly community ecology types of analyses). In grad school, I have become really interested in the microbial communities that live in and on plants. They are intellectually exciting because I am always amazed when I think about the fact that each tree or plant we see is actually a community into itself, and functions as a whole (perhaps only as a whole), and we know very little about how those interactions work or why. I have been investigating these questions with a whole series of experiments using new molecular genetics techniques, greenhouse and field experiments, and bioinformatics. I am working somewhere between vegetation community ecology, molecular community ecology, biogeochemistry, and mycology (the study of fungi!).

Nicole Soper Gorden

nsopereg@cns.umass.edu

University of Massachusetts, graduate student (Ph.D.) (Plant ecology)

I work with plant-insect interactions. I am particularly interested in understanding how multiple antagonist and mutualist insects affect selection pressures on plants, and on floral chemical defenses as a way to mediate insect interactions with flowers. My current research is looking at the induction of floral chemical defenses and how they affect several antagonists and mutualists. I have also worked with how abiotic factors affect plant-insect interactions, galling insects, and vegetation surveys/habitat identification.

Rebecca Trueman

rebecca.trueman@cuchicago.edu

Concordia University Chicago, Faculty (Biogeochemistry)

I classically work with stable isotopes as indicators/tracers of ecological processes. I have worked in temperate forests and prairies primarily. I have papers published or in preparation related to C cycling. I classically look at ecosystem scale C dynamics but have also worked extensively with nutrient cycling in soils.

Scott Collins

scollins@sevilleta.unm.edu

University of New Mexico, Faculty (Terrestrial ecology)

Ecological Society of America, President Elect

My research focuses on the impact of natural disturbances and global environmental change on mesic and arid grassland ecosystems. I am particularly interested in the interactive effects of fire, grazing and drought in mesic grasslands in North America and South Africa, and how rainfall variability, temperature change, and shrub encroachment affect aridland ecosystems in the southwestern US. Together with my students and colleagues I am currently working on a) the effects of soil resource available on plant community diversity, b) the effects of increased rainfall variability on Chihuahuan Desert processes, c) the effects of nighttime warming, winter rainfall and N deposition on species interactions in Chihuahuan Desert grassland, d) long-term vegetation dynamics in desert grassland, e) environmental genomics of fungi in desert grassland, and f) the interactive effects of fire and grazing on mesic grassland vegetation in Kansas and South Africa.

Sean Moore

smoore@ucar.edu

National Center for Atmospheric Research (biological invasion, plant-insect interactions, plant-microbe interactions, population ecology, and evolutionary ecology)

In my PhD program, I'm broadly interested in mutualism, species coexistence and diversity. Using plant-rhizobia interactions as a model system, I'm currently working on two main projects:

1. The potential ecological and evolutionary impacts of novel stressors (herbicides) on soil microbial organisms and, consequently, on crops that rely on the ecosystem services provided by the soil microbial community (e.g., nutrient availability, pathogen suppression).
2. How ecological and evolutionary changes in plant-rhizobia interactions may feedback to influence plant community dynamics. For example, genetic changes in one species (e.g. rhizobia) might indirectly alter the strength of ecological interactions with other species (plant competition).

Wendy Yang

wendy_yang@berkeley.edu

University of California, Berkeley, post-doc Biogeochemistry (terrestrial biogeochemistry & nitrogen cycling)

In particular, I am interested in improving our understanding of soil emissions of nitrous oxide, a potent greenhouse gas and catalyst for stratospheric ozone depletion. For my dissertation I developed new methods for measuring nitrous oxide consumption to dinitrogen, an inert gas, in soils. I am now studying a new pathway for dinitrogen production that couples the soil nitrogen and iron cycles; this pathway short circuits nitrous oxide production to avoid the emissions of nitrous oxide from soil.

Zakiya Leggett

zakiya.leggett@weyerhaeuser.com

Weyerhaeuser Company, Research Scientist (Soil ecology/forestry)

My PhD research is focused on understanding the relative importance of environmental and stochastic controls on plant distributions. I work in a lab that uses advanced airborne remote sensing to produce very high resolution imagery (cao.stanford.edu), so now I spend about 80% of my time at the computer, 20% in the field. In the past I've worked as a restoration ecologist in a U.S. National Park and an urban forester in New York City.



Appendix E

SEEDS Graduate School and Career Fair

Exhibitor list

ESA Annual Meeting, Diversity Mixer
August 10, 2011

Weyerhaeuser Company

Careers with Weyerhaeuser Company

Description: Weyerhaeuser releases the potential in trees to solve important problems for people and the planet. The need for imaginative, sustainable solutions to the world's challenges has never been greater. We are uniquely qualified to meet these needs and those of our customers in ways that create ongoing prosperity. We are inspired by trees. Their strength, vitality, and unlimited potential to be transformed into useful products have guided our approach to business for more than a century. Trees and human ingenuity are equally precious, sustainable resources, and we are committed to growing both.

Website: <http://www.weyerhaeuser.com/>

Contacts: Effenus Henderson, Chief Diversity Officer, effenus.henderson@weyerhaeuser.com, 253-924-3261
Zakiya Leggett, Sustainability Scientist and SEEDS Alumni zakiya.leggett@weyerhaeuser.com, 252-474-3710

University of Michigan Department of Ecology and Evolutionary Biology

Graduate Programs in Ecology and Evolutionary Biology (M.S. and Ph.D.); REU program for 1st and 2nd year college students

Description: EEB offers three graduate degree options: Frontiers Masters, Ph.D., and Traditional Masters. The Frontiers Masters program is a fully-funded, two-year program that allows students to explore a wide range of research approaches in ecology and evolutionary biology, followed by a focused research project with the support of a faculty mentor. This program provides the foundation needed to continue on to a top-rated Ph.D. program. The Ph.D. program guarantees five years of funding, with the goal of completing a dissertation research project under the guidance of an advisor. The Traditional Masters program is a flexible option offering either a thesis-based or a coursework-based degree to prepare students for a variety of career objectives. We are also offering a Research Experience for Undergrads (REU) program for early undergraduates in the summer of 2012, with opportunities for research in a variety of areas.

Website: <http://www.lsa.umich.edu/eeb>

Location: Ann Arbor, MI

Application deadline: Apply by 12/1/2011 (Ph.D.) or 2/1/2012 (M.S.) for Fall 2012 admission

Contacts: Jane Sullivan, Graduate Program Coordinator, janesull@umich.edu, 734-615-7338
Deborah Goldberg, Professor and Department Chair, degold@umich.edu, 734-615-4912

Kent State University

Environmental Aquatic Resource Sensing IGERT

Description: This Integrative Graduate Education and Research Training (IGERT) program (funding by the National Science Foundation) represents an interdisciplinary, dual-institution (Kent State Miami University) program focused on Environmental Aquatic Resource Sensing (EARS). The theme of EARS is training of doctoral students in environmental sensing, focused on freshwater resources, accentuated with business experiences, to develop professionals equipped for diverse careers. Human dependence on freshwater ecosystems is absolute. EARS will prepare graduate students for future careers relevant to freshwater resources through training in environmental science, sensor design & use, and business methods. Data will be disseminated to stimulate K-16 and public interest in environmental science. Development of a diverse research community will be facilitated via a combination of recruitment and ongoing program connections.

Website: <http://www.kent.edu/biology/graduate/igert.cfm>

Location: Kent State University and Miami University

Contacts: Margaret Nagella, Program Assistant, mlnagell@kent.edu, 330-672-7828
Laura Leff, Professor, lleff@kent.edu, 330-672-3613
Chris Blackwood, Assistant Professor, cblackwo@kent.edu, 330-672-3613

National Ecological Observatory Network (NEON)

Job opportunities with NEON

NEON will be the first observatory network of its kind designed to detect and enable forecasting of ecological change at continental scales over multiple decades. NEON data will focus on how land use, climate change and invasive species affect biodiversity, disease ecology and ecosystem services. NEON employs scientists in the fields of ecology, meteorology, biogeochemistry, and ecoinformatics. Each year, NEON will hire a staff of Seasonal Field Technicians across the United States who will assist with field observation, sample collection and handling, sample processing and sample shipment of a variety of taxa including: Small Mammals; Birds; Beetles; Mosquitoes; Plants; Soil Microbes. NEON is a project of the U.S. National Science Foundation, with many other U.S. agencies and NGOs cooperating.

Website: <http://www.neoninc.org/>

Contacts: Laura Reynolds, Recruiter, lreynolds@neoninc.org, 720-746-4930

USDA Forest Service

Working for the Great Outdoors: Careers with the Forest Service

A career with the Forest Service will challenge you to manage and care for more than 193 million acres of our nation's most magnificent lands, conduct research through a network of forest and range experiment stations and the Forest Products Laboratory, and provide assistance to State and private forestry agencies. It's an awesome responsibility – but the rewards are as limitless as the views.

Website: <http://www.fs.fed.us/>

Contacts: Rich Pouyat rpouyat@fs.fed.us, Ralph Crawford Rcrawford01@fs.fed.us, and Quin Holifield qnholifield@aol.com

University of Puerto Rico-Río Piedras Campus

Natural-Human Systems in the Urbanizing Tropics

Description: The University of Puerto Rico's IGERT program aims to train Ph.D. students to apply an interdisciplinary and collaborative approach to environmental problems in urbanizing, tropical landscapes. Puerto Rico has a dynamic environmental history, suffering nearly complete deforestation, then enjoying forest recovery, and then experiencing urban sprawl as the economy modernized. This last shift produced environmental problems, overlaid by changes in climate and vulnerability to catastrophic storms making Puerto Rico an ideal place to conduct integrative research. IGERT research can focus on many topics involving environmental themes in the urbanized tropics such as climate, water, food security, renewable energy, waste management, biodiversity, and urban system services. Fellows work together with natural and social science faculty as well as local NGO's to develop dissertation questions that can help solve current environmental problems in Puerto Rico.

Website: http://envsci.uprrp.edu/index.php?page=program-description&hl=en_US

Location: San Juan, Puerto Rico

Contacts: Program Coordinator, Colibrí Sanfiorenzo-Barnhard uprrp.igert@gmail.com

National Audubon Society

Internship and Career Opportunities with Audubon

For more than a hundred years, Audubon has harnessed America's love of birds and channeled that energy into a real force for conservation. The power of the organization has always been its ability to mobilize the strength of communities at the local, state and national level to come together to protect birds and America's great natural landscapes. It all starts when you see a bird in nature, learn more about it, and eventually become connected to the world around you in ways you never imagined. What defines Audubon's unique value is a powerful grassroots network which includes local chapters, state offices, Audubon Centers, Important Bird Area Programs, and 700 staff across the country. Our non-profit organization offers various opportunities in the areas of conservation, public policy, education, land stewardship, and development/fundraising, as well as administrative openings. Please visit our Career Center on www.audubon.org to learn more and apply.

Website: <https://careers-audubon.icims.com>

Contacts: Teresa LaRocca, HR Generalist, tlarocca@audubon.org



Appendix F

SEEDS Student Survey Results

Ecological Society of America 96th Annual Meeting
August 6th - August 12th, 2011 ♦ Austin, Texas

2011 ESA Annual Meeting student survey

1. What were the most meaningful aspects of the ESA meeting in terms of supporting your ecology interests and motivation to continue in an ecology pathway?

Answer Options	Not at all			Somewhat			Very much	Rating Average	Response Count
Interacting with SEEDS students	0	0	0	2	1	3	16	6.50	22
Participating in workshops/field trips	0	0	0	3	1	8	10	6.14	22
Seeing the research (oral/poster) presentations	0	0	0	2	4	4	12	6.18	22
Networking with professional ecologists and graduate students	0	0	0	2	3	4	13	6.27	22
Having a Meeting Mentor	0	0	0	1	2	6	13	6.41	22
Seeing what an ESA meeting is all about	0	1	2	0	0	7	12	6.09	22
Gaining ideas/support for my own projects	0	0	0	1	1	10	10	6.32	22
Learning about ecology initiatives/projects in which I would like to become involved	0	0	0	0	3	6	13	6.45	22
<i>answered question</i>									22
<i>skipped question</i>									0

2. Please describe any other meaningful aspects about the meeting that helped increase your motivation in ecology.

<i>answered question</i>	10
<i>skipped question</i>	12
Number	Response Text
1	I met many professionals in the field, which encouraged me to pursue graduate studies in ecology, and also to apply to grants. I think that I make several contacts which are prospective mentors for my graduate career, and I also learn about many graduate programs that I was not aware; now I feel that I have a broader set of options to pursue my graduate studies.
2	Meeting the ecologists that are the top of their field
3	Chapter workshop was very helpful

4	The theme of this meaning was especially accommodating to my personal interests in ecology.
5	Attending the 2011 ESA Meeting was an awesome experience! I thank SEEDS so much! The meeting was a very inspirational opportunity that motivated me to do projects and continue studying ecology. The diversity of people and research interests was astounding, every single day was an opportunity to learn much more. I made good friendships which I look forward to keeping in touch with, and hopefully working with one day.
6	THE DEVELOPMENT AND DISCUSSION OF NEW IDEAS
7	It is always rejuvenating to experience the energy and passion of fellow SEEDS students. Likewise, the energy and bustle of professional ecologists at work was an amazing experience which I am sure will inspire me in years to come!
8	Learning about the broad disciplines and possible jobs that fit into the study of ecology. We don't need to necessarily be Ph.d s in ecology, but we can all work together to keep ecological systems healthy!
9	The importance and relevance of the application of ecology to society. Also, Bioblitz was a great learning experience and a great opportunity to experience ecology in the local community.
10	Occasional SEEDS Meetings throughout the week.. Especially the first and last meeting.

3. Thinking about the SEEDS program at the meeting, how much did it:									
Answer Options	Not at all			Somewhat			Very much	Rating Average	Response Count
Enhance your overall meeting experience.	0	0	0	0	0	4	18	6.82	22
Enhance your comfort level at the meeting by being a part of a small group within a large meeting.	0	0	0	0	0	5	17	6.77	22
Enhance your ability to network by being matched with a mentor and meeting other SEEDS students.	0	1	0	0	3	6	12	6.23	22
Help you feel supported during the week	0	0	0	1	2	4	15	6.50	22
Encourage you to want to become a member of the ESA	0	0	0	0	1	5	16	6.68	22
<i>answered question</i>									22
<i>skipped question</i>									0

4. Thinking about your meeting mentor, please rate the following:									
Answer Options	Not at all			Somewhat			Very much	Rating Average	Response Count
How satisfied were you with the match	0	1	0	3	0	5	13	6.14	22

How much did he/she exhibit that ecology is a rewarding profession	1	1	0	0	5	2	13	5.95	22
How much did he/she motivate you into your ecology pathway	1	1	1	1	2	6	10	5.73	22
How helpful was he/she in guiding the next steps in your career	1	1	1	1	2	6	10	5.73	22
How much did he/she enhance your overall meeting experience	1	1	1	1	1	7	10	5.77	22
How available was your mentor	1	1	1	3	2	4	10	5.55	22
How approachable was your mentor	0	1	0	0	2	2	17	6.50	22
How valuable was it to have a mentor	1	1	1	2	3	3	11	5.64	22
How likely are you to keep in touch with your mentor after the meeting	1	0	1	5	2	2	11	5.59	22
<i>answered question</i>									22
<i>skipped question</i>									0

5. What was the most helpful thing that your mentor did?	
<i>answered question</i>	20
<i>skipped question</i>	2
Number	Response Text
1	she helped me to understand who were the big presenters and major players within the ESA.
2	Encouraged me to apply to the NSF grant, he offered me his help by reviewing my application to the grant. Also, he spend a lot of time with me during the meeting, and that gave me the comfort I needed for the meeting.
3	Discussed future interests and career moves, as well as advice for those just starting out
4	Introduce me to various listservs to be apart of
5	Give me advise about my next step as a senior about to graduate.
6	she helped guide me through the conference and she introduced me to people that she knew which helped build my network
7	Just explained to me how they got where they were at and offered to help me get achieve my goals.
8	The most helpful think my mentor did was to take an interest in my interests, and offer guidance in how to get where I would like to be.
9	Recommend speakers
10	Good conversation regarding areas of study we are both interested in. Allowed me to get a clearer idea on the details regarding specific type of research. Really nice person and very good at explaining.

11	She supported me on my presentation and we had conversations about graduate schools and studying abroad.
12	MORE HELPFUL TO ME WERE THE MENTORS THAT I DID NOT SELECT
13	She introduced me to REUs, social-ecological systems, and action ecology. This lead me to ideas of ways to be involved in ecology and contribute to planetary stewardship while coming at it with a different background.
14	My mentor was excellent and did many things during the week which really enhanced my ESA meeting experience. However, the most valuable thing my mentor did was having a long chat with me about graduate school and potential career paths in ecology.
15	We had morning meetings and she helped me think and participate in themes related to ecology education.
16	He help me by giving advice on possible careers that I'm into.
17	My mentor helped me by seeing my poster before my presentation and asking me valuable questions and preparing me for the presentation.
18	broke down her field of ecology into little bite-size pieces.
19	Met with me every day to recap on that day's events. She also helped me navigate through the workshops in addition to requesting ones I should go to based off my interests.
20	Recommend certain presentations to attend.

6. Did you have any concerns when working with your mentor?	
<i>answered question</i>	18
<i>skipped question</i>	4
Number	Response Text
1	none
2	No concerns, everything went really well. I am really satisfied with the match.
3	Perhaps availability to some extent, they were pretty busy but that is understandable
4	Interests wouldn't align
5	No.
6	none
7	no
8	No, I did not.
9	No
10	Just that I seemed to already have a pretty planned out meeting schedule and my mentor seemed satisfied with it, so there was not much more to plan for.
11	No.
12	NO
13	No.
14	No, she was great, but she did say she felt she wasn't very useful to the ESA process, which I don't think is true, and she was very open about talking and mentoring other undergraduate students.
15	Before the meeting I was worried that I wouldn't get along with my mentor because they would keep telling me what I should do meeting/life. Turned out my mentor was great and was very helpful.

16	No. he was very cordial and though busy made ample time for me.
17	Not at all!
18	Disconnect in research interest.

7. Please provide your mentors name (optional) if you think it will be helpful for SEEDS staff to connect your feedback with your mentor's identity.

<i>answered question</i>	12
<i>skipped question</i>	10
Number	Response Text
1	Louie Yang, UC at Davis
2	Zakya Legette
3	David Knochel
4	Luden
5	n/a
6	CLAIRE LAUNCH
7	Dr. Lou Gross
8	Jenni
9	Craig Young
10	Naupaka Zimmerman
11	Dr. Wendy Yang
12	Emily Moran

8. Using the scale below, please think about your feelings BEFORE your participation in the meeting, what was your:

Answer Options	None			Somewhat			A great deal	Rating Average	Response Count
Interest in ecology.	0	0	0	3	4	7	8	5.91	22
Understanding of ecology.	0	1	1	5	7	4	4	5.09	22
Understanding of what ecologists do.	0	2	0	4	6	6	4	5.18	22
Motivation to pursue your own research in ecology.	0	1	2	2	6	4	7	5.41	22
Belief that ecology is a rewarding career option.	0	1	0	5	8	2	6	5.27	22
Awareness of the diverse areas of study and career options in ecology.	1	4	1	6	4	3	2	4.19	21
Awareness of the diverse areas of study and career options in ecology.	1	4	1	5	5	3	3	4.36	22
Awareness of the diverse students and professionals interested	0	2	2	6	5	3	4	4.77	22

in ecology.									
Understanding of ESA and its role in the profession.	1	2	2	6	4	5	2	4.50	22
Interest in graduate school for ecology or a related field.	1	0	1	4	5	4	7	5.36	22
Commitment to pursue a career in ecology.	0	1	1	5	5	2	8	5.36	22
<i>answered question</i>									22
<i>skipped question</i>									0

9. Using scale below, please think about your feelings AFTER your participation in the meeting, what is your:									
Answer Options	None			Somewhat			A great deal	Rating Average	Response Count
Interest in ecology.	0	0	0	0	0	7	15	6.68	22
Understanding of ecology.	0	0	0	0	3	7	12	6.41	22
Understanding of what ecologists do.	0	0	0	0	0	7	14	6.67	21
Motivation to pursue your own research in ecology.	0	0	0	0	2	5	15	6.59	22
Belief that ecology is a rewarding career option.	0	0	0	0	1	5	16	6.68	22
Awareness of the diverse areas of study and career options in ecology.	0	0	0	0	2	2	18	6.73	22
Awareness of the diverse areas of study and career options in ecology.	0	0	0	0	2	3	17	6.68	22
Awareness of the diverse students and professionals interested in ecology.	0	0	0	0	0	5	17	6.77	22
Understanding of ESA and its role in the profession.	0	0	0	1	0	7	14	6.55	22
Interest in graduate school for ecology or a related field.	0	0	0	1	2	5	14	6.45	22
Commitment to pursue a career in ecology.	0	0	0	2	3	3	14	6.32	22
<i>answered question</i>									22
<i>skipped question</i>									0

10. If any of the above items changed dramatically on the scale, what aspects of the meeting caused the change?	
<i>answered question</i>	11
<i>skipped question</i>	11
Number	Response Text
1	Just having the opportunity to see what else is out there. Most of this knowledge and research isn't really open to the public and is kept in closed circles. This knowledge really needs to be available to the public and we need to get that information out there.
2	Although I have been really committed to the field of ecology since I participated in activities like REU and SEEDS field trips, my awareness about the many different branches in the field was not so clear, I think this meeting make me aware about the many different branches of ecology, and also with all the experiences I went through in this meeting, it makes me do a lot of brainstorming about the specific field that I want to pursue my graduate studies.
3	Really what the role of ESA was. I had heard of it many times before and had an idea of the purpose of the organization, but did not fully understand until after the meeting
4	Networking, talking to ecologists, visiting posters, and getting feedback on my poster
5	The exposure to all the different talks and sessions really shocked me at the diversity of research fields in ecology. By going to probably more than thirty talks and taking notes, I was able to really identify a captivating area of interest and look at different grad school programs. Thanks!
6	THE ACTIVE INVOLVEMENT THAT A STUDENT CAN HAVE IN SUCH AN IMPORTANT MEETING
7	Attendance of the meeting encouraged me to look at smaller sub-fields of ecology including urban ecology, social-ecological systems, and action ecology. It decreased my interest in older sub-fields of ecology. I left the meeting with a mixed feeling of "Wow ecology is so cool, studied by amazing people, and has so much to offer to the current global crisis" and "I don't know where to insert myself or if this is for me."
8	My thoughts about diversity and the ESA were changed as a result of exposure to the incredible diversity developing in ESA and the broad range of research being conducted by its members.
9	Understanding of what ecologists do.
10	Workshops, SEEDS mentor, SEOI Field Trip, Poster Session
11	Realizing the need to use ecology for the advancement of societal needs and sustainability; also, just an overall appreciation of nature that is applicable to all fields of study.

11. After this meeting, how likely are you to do the following:									
Answer Options	Not likely			Somewhat likely			Extremely likely	Rating Average	Response Count
Give a presentation at your school	1	0	2	2	2	4	11	5.73	22
Talk to friends about the meeting	0	0	0	0	0	2	20	6.91	22
Talk to family about the meeting	0	0	0	1	1	3	17	6.64	22

Attend another ESA Annual Meeting	0	0	0	1	0	4	16	6.67	21
Seek a research opportunity and present at an ESA meeting	0	0	0	0	2	4	16	6.64	22
Renew your ESA membership next year	0	0	0	0	1	6	15	6.64	22
Contact some of the professionals and students you met	0	0	0	0	0	4	18	6.82	22
<i>answered question</i>									22
<i>skipped question</i>									0

12. Please describe any concrete suggestions for improvement.	
<i>answered question</i>	13
<i>skipped question</i>	9
Number	Response Text
1	This was a great experience and I think it would be even more valuable if we had more workshops for the SEEDS students to really create some amazing outcomes and pave the future for ESA
2	Have a more variable food menu, maybe with some chicken and fish.
3	Perhaps some scheduling conflicts with the work shops. I know that no matter what time you make the work shops it will overlap with many other activities that some people were interested in attending. Maybe having them at various different times throughout the week?
4	Some sort of online database/schedule where SEEDS mentors and mentees can plan talks
5	Everything was fine In my opinion.
6	A suggestion I would have for future SEEDS ESA experiences would be to bring some of the more interactive aspects of the other SEEDS meetings to the Annual ESA meeting. That would really make this experience a great one.
7	n/a
8	TO EXPAND
9	I have no suggestions for improvement. This meeting was awesome and the support from mentors, SEEDS alumni, SEEDS students, and SEEDS/ESA staff was phenomenal.
10	I think SEEDS is fantastic! I would like to help high school chapter students participate. Maybe have suggestions for gathering money for the students to participate, or have ESA-SEEDS mentors donate a small amount for them-although I think this is already being done.
11	Is there anyway the SEEDS closing could be done early Friday morning than Thursday Afternoon? Two years in a row, I had Thursday afternoon presentations.
12	Having more outreach opportunities to underrepresented/minority groups. This was an awesome conference, however I feel that there is still a need for diversity. If this means connections with Historically Black Colleges, scholarships to attend the conference or representatives from the conference come in and talk to Universities around America.
13	Continued involvement of students in leadership roles.

13. Is there anything else you would like to share with us?	
<i>answered question</i>	10
<i>skipped question</i>	12
Number	Response Text
1	Really happy for this opportunity
2	I think the SEEDS program and all the opportunities they have offered to me as a undergraduate student have shaped me as a professional and really encouraged me to be an ecologist. Thank you for this experience, and I hope that it could be repeated. I wish that some day I will be one of the meeting mentors.
3	I never feel like I leave a SEEDS experience without gaining something. That is the great thing about this program, continuous growth.
4	First I would like to thank SEEDS and especially Charlee and Melissa for the amazing job they do in organizing everything! I really really appreciated how smoothly everything went. From the time I arrived by plane, to the hotel check-in to finally the great ESA Conference everything went so well. All the workshops were really motivating, the talks were great lectures and the students I met were really great individuals. Attending an ESA Conference through SEEDS, definitely was a superb way to end my summer. Thank you for everything!
5	IT WAS GREAT
6	Thank you so much for all of your hard work! This is a really wonderful program!
7	This has been an incredible experience and I hope that it remains available to future students!
8	Melissa and Charlee do an amazing job.
9	SEEDS ia the best! I love SEEDS!
10	Thank you for the amazing experience. One short week can have a lasting impact!