

Agenda: NSF Amazon-PIRE Symposium and Workshop

(in collaboration with the LBA Data Model Intercomparison Project and Biosphere 2)

DAY 1, MONDAY, 25 APRIL, 2011: Symposium of results from Amazon-PIRE (10 minute presentations)

7:30 – 8:30 Breakfast and Registration

8:30 Overview of symposium and workshop goals (Saleska)

9:00 *Research Findings from the core PIRE mission: What are the carbon & vegetation dynamics of Amazon forests under climatic variability and change?*

Science Motivation and overview (**Scott Saleska**)

Forest flux responses to interannual variation:

- Santarem region (**Natalia Restrepo**, presented by **Saleska**)
- Manaus region (PIRE collaborator **Alessandro Araujo**, Embrapa, Belem)

MODIS Satellite reveals whole-forest responses to the Amazon droughts of 2005 and 2010
(UofA Research Professor **Kamel Didan**)

Forest inventories: tree mortality and drought (UofA PIRE research fellow, **Luciana Alves**)

Soil dynamics and trace gas fluxes (PIRE fellow **Joost van Haren**, UofA SWES)

10:30 BREAK

11:00 *Research Findings from the Core PIRE mission (continued)*

Regional carbon balance and variability: The perspective from the atmosphere
(**Steve Wofsy**, Harvard Earth & Planetary Sciences)

Climate and forest interactions in the past 1,000 years -- Evidence from Peruvian lake sediments
(**Jonathan Overpeck**, UofA Geosciences)

Modeling Forest responses to climate (PIRE fellow **Brad Christoffersen** and **Koichi Sakaguchi**)
Constraining modeled response to drought with new hydrophysiological measurements
(**Tom Powell**, Harvard University)

Biosphere 2: a tool for probing effects of climate on rainforest community assembly?
(**Ty Taylor**, UofA EEB)

12:15 DISCUSSION

12:30 LUNCH

2:00 LIDAR and forest vegetation and carbon dynamics (an NSF-PIRE, NASA LIDAR collaboration)
(**Scott Stark**, **Maria Hunter**, **Juliana Schietti**, **Michael Lefsky**)

2:45 PTR-MS measurements in Biosphere 2 and in the Amazon rainforest elucidate the functional basis for plant isoprene production (**Kolby Jardine**, UofA B2 Research Scientist)

3:00 Educational Outreach and institutional transformation

The PIRE field course as Outreach tool: bringing the Amazon to the Tucson Public Schools (an NSF-PIRE, NSF-GK12 collaboration) (**Ginny Fitzpatrick**, UA BioME Fellow)

3:15 BREAK

3:45 UofA programs for international collaboration and outreach, Brazil and Beyond
(**Maria Teresa Velez**, Associate Dean, UA Graduate College)

New environmental science program, Federal University of East-Para(UFOPA), Santarem, Brazil
(**Plinio Camargo**, Professor, U. of Sao Paulo and UFOPA, Santarem, Brazil)

PIRE - UFOPA research collaborations in Santarem
Michela Figueira (Assistant Professor, UFOPA)

4:30 TOUR of BIOSPHERE 2

6:15 DINNER in Biosphere 2

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DAY 2, TUESDAY, 26 APRIL 2011: Workshop on future directions for PIRE research

7:30 – 8:30 Breakfast

8:30 Overview & discussion of workshop goals (Saleska)

"Pitches" for possible New Directions

Integrating eddy flux and tower-mounted multi-band cameras for Improving Remote sensing based detection of vegetation processes (Saleska, Natalia Restrepo, Alfredo Huete)

Diversity in water use and water acquisition mechanisms of tropical trees - new directions for central Amazon research (PIRE collaborator **Rafael Oliveira**, U of Campinas, Campinas, Brazil)

Integrating carbon cycling, atmospheric chemistry and microbial molecular biology

- Proposal for DOE ARM and BVOC projects in Santarem
(**Steve Wofsy**, Harvard, and **Kenia Wiederman**, University of Sao Paulo)
- Next-generation sequencing approaches to microbe-atmosphere interactions
(**Tim O'Connor**, U of Oregon)
- Metagenomics of phyllosphere and soil communities on Andean slopes
(**Maren Friesen**, USC, with contribution from Joost van Haren)

Prospects for Future airborne LIDAR surveys in Amazonia (**Michael Keller**, USDA)

10:00 COFFEE BREAK

10:30 Integrating NSF's new Science, Engineering, and Education for Sustainability (SEES) initiative

- Bridging the social and ecological dimensions of Reducing Emissions from Deforestation and Degradation (REDD) (**Tracey Osborne**, UofA Geography)
- Science and the governance of sustainability
(**Diana Liverman**, UoA Institute of the Environment)
- Prospects for Institution-building for International Programs at UoA
(**Francisco Marmolejo**, UA Assistant Vice President for Western Hemispheric Programs)

11:30 CHARGE: USING BREAKOUTS to sketch "Proposals" following "Pitches"
INITIAL BREAK-OUT MEETINGS of "Proposals" (with notes preserved on 'Wiki' site)

Integrating ecosystem fluxes and ecohydrophysiology in Central Amazon research
(Rafael and Alessandro)

Atmospheric Chemistry and Molecular Biology
(Kenia Wiedeman, Tim O'Connor, and Kolby Jardine)

Integrating Phyllosphere and soil communities with ecosystem function: central to
Western Amazon (Maren and Joost)

LIDAR Surveys (Michael Keller and Juliana Schiatti)

12:30 LUNCH

2:00 CONTINUE BREAK-OUT MEETINGS

3:30 BREAK

4:00 Break-out reports

5:00 Wrap-Up DISCUSSION

6:30 Meet to go out for Dinner in town

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DAY 3 (OPTIONAL) WEDNESDAY 27 APRIL – Individual Working groups

8am Breakfast

10:30 Coffee Break

12:30 Lunch

Afternoon or evening departure to Tucson, or stayover with dinner at restaurant in town

Schedule determined by individual working groups. The purpose of this day is to take advantage of the broader meeting to allow pre-existing groups to make progress on their projects, whether this is by sharing the details of data analysis and methods, outlining papers or proposals, or making plans for work.

All groups should have a designated note-taker for recording their agenda and progress, using the open Wiki, to document their directions and progress.

Suggested working groups:

Airborne LIDAR

Stark, Schietti, Lefsky, Hunter, and Keller

ATMOSPHERIC CHEMISTRY AND BIOLOGY

Kolby Jardine

Matt Hyak (Harvard)

Kenia Wiedeman

Tim O'Connor, Ann Womack (UofO)

EDDY FLUX TOWERS and Remote sensing

Alessandro

Suelen Marostica

Jin Wu

Kamel

SOILS and Soil Gas dynamics

Joost

Plinio

Cosme

Lindsey

Virginia

Maren

Santarem Region ecophysiology and Ecology

Rafael

Luciana

Michela

Tom Powell