AGENDA
NCED 2013 Summer Institute:
“Subsurface to surface: recovering surface dynamics from stratigraphic records”

August 14-23, 2013, University of Minnesota

SIEDS series organizer: Chris Paola
2013 conveners: Vaughan Voller and Efi Foufoula-Georgiou
Technical coordinators: Deb Pierzina, Antoinette Abeyta, Barbara Heitkamp

Lecturers:
Jef Caers (Stanford University)
Diana Dalbotten (NCED)
Efi Foufoula-Georgiou (University of Minnesota)
Steve Goodbred (Vanderbilt University)
Gordon Grant (USDA Forest Service)
Pat Hamilton (Science Museum of Minnesota)
Jessica Kozarek (University of Minnesota)
David Mohrig (University of Texas – Austin)
Pat Nunally (University of Minnesota)
Irina Overeem (University of Colorado, CSDMS)
Chris Paola (University of Minnesota)
Gary Parker (University of Illinois at Urbana-Champaign)
Paola Passalacqua (University of Texas – Austin)
Kyle Straub (Tulane University)
Vaughan Voller (University of Minnesota)

Description:
The NCED Summer Institute on Earth Surface Dynamics (SIEDS) started in 2009 with the idea of creating an interdisciplinary school for young researchers focused on studying the dynamics of the Earth’s surface. One of the goals of the institute is to expose students to an integrated approach to earth surface dynamics that involves laboratory experiments, theory, numerical modeling, and field work. Collaboration between NCED and CSDMS allows students to be exposed to numerical modeling using community codes housed under CSDMS (Community Surface Dynamics Modeling System). Students are also provided with training in broader impacts via exposure to the Science Museum of Minnesota, collaborative work with the University of Minnesota STEM (Science Technology, Engineering and Mathematics) Center and overview of the extensive Education and Diversity Programs of NCED.

The school spans 10 whole days (including Saturday) with morning and afternoon sessions. Plenty of opportunity for interaction with lecturers and researchers is provided during those long days. See http://www.nced.umn.edu/2013-summer-institute for information on the 2013 Summer Institute.

Another special highlight of SIEDS is the ability of the participants to interact and advise REU students during an intense afternoon session at which REU students mingle with SIEDS students.
to present their posters and seek mentoring for graduate school. Both SIESD and REU students found this very inspiring in the past and developed friendships and mentoring that will last.

**Themes of SIESD 2013:**

(1) *Past as a key to the Future* (from cores to stratigraphy, deciphering past environments to understand current and future variability and change)  
(2) *Education and broader impacts on environmental change*

**Past editions (presentations and materials available on SIESD website)**

2009 – Complexity and Predictability in Earth Systems  
2010 – Rivers and Vegetation  
2011 – Coastal Processes and the Dynamics of Deltaic Systems  
2012– Future Earth: Interaction of Climate and Earth-surface Processes

**Base Reading material for 2013 SIESD:**

2013 SIESD Agenda

Day and Session Timeline Key:
Session 1: 8:30 to 10:15 am
  Break
Session 2: 10:45 am to 12:00 pm
  Lunch break
Session 3: 1:30 to 3:15 pm
  Break
Session 4: 3:45 to 5:30 pm

Meals are on your own unless otherwise indicated.

*Note: Sunday morning session will start at 9:00 a.m.

August 14 – Wednesday (St. Anthony Falls Laboratory (SAFL))
Session 1: Welcome to SIESD 2013! (Chris Paola)
Session 2: SAFL Tour
  Lunch – on your own
Session 3+4: (David Mohrig)
  Session 4 breaks early at 5 pm

Dinner and poster session – at SAFL

August 15 – Thursday (SAFL)
Session 1: (David Mohrig)
Session 2: (Gary Parker)
  Lunch and presentation – at SAFL: How to be an effective scientific communicator (Pat Nunnally and Joanne Richardson)
  1:30-2:00 pm Overview of Group Projects (Chris Paola)
Session 3+4: (Gary Parker)
  Session 3 starts at 2pm.

Dinner – on your own

August 16 – Friday (Keller Hall (Rm. 3-170) Computer lab / Lunch at Civil Engineering)
Session 1-4: Using spatial statistics to link surface and subsurface - computer clinic and lecture (Jeff Caers)
  Lunch with REU students at Civil Engineering Rotunda
  Dinner – on your own

August 17 – Saturday (SAFL)
Session 1: Briefing — The power of experiments (Gordon Grant)
Session 2: The power of experiments – hands on flume session (Gordon Grant)
  Lunch – on your own
Session 3: The power of experiments – hands on flume session (Gordon Grant)
Session 4: Wrapping up flume session/research group time
  Dinner – on your own
August 18 – Sunday (Science Museum of Minnesota (SMM))
9:00-9:45  NCED’s Role in Broader Impacts (Pat Hamilton)
9:45-10:15  Tour of SMM
10:15-10:45  Tour of Big Backyard
10:45-12:00  Participants free to tour the rest of the museum
Free rest of the day

August 19 – Monday (Keller Hall (Rm. 3-170) Computer lab)
Session 1-4: All day computer clinic with numerical models (Irina Overeem)
Lunch and Dinner – on your own

August 20 – Tuesday (Keller Hall (Rm. 3-170) Computer lab and Rapson Hall)
Session 1+2: Concluding computer clinic with numerical models (Irina Overeem)
Lunch – on your own
Session 3+4: Beneath the carpet: From process geomorphology to stratigraphic record in the Ganges-Brahmaputra River delta (Steve Goodbred)
Dinner – on your own

August 21 – Wednesday (SAFL)
Session 1+2: Understanding the “Stratigraphic filter” (Kyle Straub)
Lunch – on your own
Session 3+4: (Paola Passalaqua)
Session 4: Group project time
Dinner – on your own

August 22 – Thursday (SAFL)
Session 1+2: Experiments in the Outdoor Stream lab (Jessica Kozarek)
Lunch – on your own
Session 3+4: Group project time
Dinner – Efi’s House

August 23 – Friday (SAFL)
Session 1+2: Research results and SIESD 2013 Wrap Up
Lunch and presentation – at SAFL: How to be an effective scientific communicator – concluding thoughts (Pat Nunnally and Joanne Richardson)
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