Critical Zone Processes

Energy - CEE

Water: from ice to droplets to oceans

Program:

1:00-1:05pm | Welcome: Markus Buehler (Department Head)
1:05-1:15pm | Instructions & Network Experiment: Christos Nicolaides

1:15-2:00 pm | Session 1 | Chair/Timekeeper: Amanda Parry (1C)

David Talmy (Postdoc, Follows group)
Marine algal growth & subcellular resource allocation in the world’s ocean

Dan Cziczo (Faculty)
Laboratory & field studies of how particles influence cloud formation

Lydia Bourouiba (Faculty)
Droplets and pathogen transport

Carlos Cerezo Davila (PhD student, Buyukozturk)
Modeling building energy demands at the urban scale: a bottom up approach

Benoit Coasne (Visiting Scientist, Ulm)
Realistic molecular model of mature and immature kerogens in organic-rich shales

Linsen Chong (PhD student, Osorio)
Better traffic light designs for urban cities

2:00-3:00 pm | Session 2 | Chair/Timekeeper: Anthony McHugh (1C)

Peter Kang (Postdoc, Juanes group)
Anomalous transport in porous and fractured media

Manoshi Sen Datta (PhD student, Polz Group)
Microbial communities at the microscale

Alison Hoyt (PhD student, Harvey Group)
Methane cycling in tropical peatlands

Jen Nguyen (PhD student, Stocker Group)
Bacterial growth in fluctuating environments

Arda Halu (Postdoc, Gonzalez Group)
Towards the urban adoption of microgrids

Arghavan Loughghalam (Postdoc, Ulm Group)
Environmental footprint of pavement infrastructure: Analysis of Virginia Roadway Network

Saurabh Amin (Faculty)
On the effect of information in congestion games

Elfatih Eltahir (Faculty)
How irrigation modifies rainfall distribution
3:00-3:30pm | Coffee Break

3:30-4:30pm | Session 3 | Chair/Timekeeper: Majdolene Khweis (1E)

Ornella Iuorio (Postdoc, Ochsendorf Group)
    Smart retrofit for resilient historical cities

Markus Buehler (Faculty)
    Biologically inspired materials & structures for strength & toughness

Francisco Lopez Jimenez (Postdoc, Reis Group)
    Soft color-composites for optical switching and dimming

Xuanhe Zhao (Faculty)
    Designing soft materials with unprecedented properties and functions

Andrew Whittle (Faculty)
    Watching over your water supply – from leaks to biofilms

David Ridley (Postdoc, Heald Group)
    Building a global picture of aerosols and air quality from space

Eben Cross (Research Scientist, Kroll Group)
    Assessing environmental exposure through low-cost air quality sensing

Yingxiang Yang (PhD Student, Gonzalez Group)
    Fundamental model of individual mobility to generate patterns of daily trajectories

4:30-5:00pm | Session 4 | Chair/Timekeeper: Noor Khouri (1C)

Shanasia Sylman (Senior, 1E)
    TREX - Vog and its effect on air on Hawai‘i

Julia Hogroian (Junior, 1C)
    TREX - Vog and its effect on soil on Hawai‘i

Erin Reynolds (Sophomore, 1-ENG)
    Terrascope - Technologies for global water security: Designing a slow sand filtration system

Ben Eck (Senior, 1E)
    D-Lab - Indoor air quality monitoring for biofuels in the developing world

5:00-7:00pm | Cheese & Wine reception