



Department of Civil
and Environmental
Engineering



CRC for
Water Sensitive Cities

2014 UCI-Water PIRE UPP Down Under Schedule

Week 1

Monday, June 16th: Orientation & Overview- Engineering Gateway 4171

- 8:30AM-9:00AM: Breakfast (Provided)
- 9:00AM-9:45AM: Welcome and Overview of PIRE Research and Program- S. Grant
- 10:00AM-10:50AM: Urban Water Supply and Wastewater Systems of Southern California-S. Grant
- 11:00AM-11:50AM: Introduction to the Governance, Regulatory, and Planning Contexts for Stormwater and Wastewater-U.S. vs. Australia-D. Feldman
- 11:50AM-12:50PM: Lunch (Provided)
- 1:00PM-1:50PM: Climate and Hydrology of Southern California and Southeast Australia-A. AghaKouchak
- 2:00PM-3:30PM: Fun and Games-J. Rowe
- 3:40PM-4:30PM: Freshwater Ecology and Anthropocentric Impacts: An Overview-P. Bowler
- 4:45PM-5:00PM: Travel to Gina's Pizza
- 5:00PM: Dinner with 2013 Cohort

Tuesday, June 17th: Urban Water Sustainability, Direct Potable Reuse & Careers in Environmental Engineering - Engineering Gateway 4171

- 8:30AM-9:00AM: Breakfast (Provided)
- 9:00AM-9:50AM: Urban Water Sustainability: Definitions and Applications-D. Feldman
- 10:00AM-11:30AM: Panel Discussion: What Are the Varieties of Careers in Environmental Engineering?-D. Feldman
- 12:00PM-1:15PM: Lunch with Panel Participants (Provided)
- 1:25PM-2:15PM: Detecting Human Pathogenic Viruses, Bacteria, and Protozoans I-S. Jiang
- 2:30PM-4:00PM: Panel Discussion: Direct Potable Reuse-S. Jiang
- 4:00PM-5:00PM: Cohort Interaction with Panel Participants

Wednesday, June 18th: Climate Change, Drainage Systems & Constructed Wetlands - Engineering Gateway 4171

- 8:00AM-9:00AM: Breakfast (Provided)
- 9:00AM-9:50AM: Climate Change and Non-stationary Processes: Detection and Modeling-A. AghaKouchak
- 10:00AM-10:50AM: Flood Risk and Drainage Systems of Southern California and Southeast Australia-B. Sanders
- 11:00AM-11:50AM: Constructed Wetlands for Wastewater Treatment-P. Bowler
- 11:50AM-12:50PM: Lunch (Provided)
- 1:00PM-5:00PM: Tour of OC Drainage Systems-C.Crompton, J.Peng

Thursday, June 19th: Stormwater Capture & Reuse - Engineering Gateway 4171

- 9:00AM-9:30AM: Travel to IRWD San Joaquin Marsh System
- 9:30AM-11:30AM: Tour of IRWD San Joaquin Marsh System-Ian Swift
- 11:30AM-12:00PM: Travel to UCI's North Campus
- 12:00PM-12:50PM: Lunch (Provided, Boxed)
- 1:00PM-1:50PM: Constructed Wetlands for Stormwater Treatment-P.Bowler
- 2:00PM-4:50PM: Tour of UCI's San Joaquin Marsh System, Newport Back Bay, Bonita Creek, and San Diego Creek-P. Bowler
- 4:50PM-5:00PM: Travel back to UCI Main Campus

Friday, June 20th: Biofilter Treatment Systems - Engineering Gateway 4171

- 8:30AM-9:00AM: Breakfast (Provided)
- 9:00AM-9:50AM: What do "Natural" and "Conventional" Treatment Systems have in Common?-B. Winfrey
- 10:00AM-10:50AM: Pollutant Removal in Biofilter Systems: Are There Tradeoffs?-M. Rippy
- 11:00AM-11:50AM: Discussion/Q&A with Cohorts of Recently Learned Concepts-P. Bowler and R. Ambrose
- 11:50AM-12:50PM: Lunch (Provided)
- 1:00PM-1:50PM: Urban Stream Syndrome-R. Ambrose
- 2:00PM-2:50PM: Measuring Physical and Chemical Water Quality Parameters-M. Rippy
- 3:00PM-3:50PM: Measuring Ecosystem Components of Biofilters and Constructed Wetlands-B. Winfrey and A. Mehring* *assist in preparation
- 4:00PM-4:50PM: Designing a Sampling Program for Constructed Wetlands and Biofilters-R. Ambrose

Saturday, June 21st – Sunday June 22nd: Free Days





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Week 2

Monday, June 23rd: **Old Laguna Sampling-B. Winfrey, M. Rippy, S. Jiang, A. Mehring, and E. Huang – Engineering Tower Loading Dock**

9:00AM: Meet to Board Vans

12:00PM: Lunch (Provided, Boxed)

Tuesday, June 24th: **Biofilters – Engineering Gateway 4171**

8:30AM-9:00AM: Breakfast (Provided)

9:00AM-9:50AM: Statistical Approaches for Experimental Design and Data Analysis-M. Rippy, A. Mehring and B. Winfrey

10:00AM-10:50AM: Plant and Animal Communities in Biofilters: Are They Sustainable?-B. Winfrey and A. Mehring

11:00AM-11:50AM: Biofilter Systems in the U.S. and Australia: a Trans-Continental Comparison-B. Winfrey and A. Mehring

11:50AM-12:50PM: Lunch (Provided)

1:00PM-1:30PM: Travel to CalTrans Biofilter

1:30PM-4:30PM: Tour of CalTrans Biofilter-B. Winfrey and Bhaskar Joshi (or other CalTrans representative)

4:30PM-5:00PM: Travel back to UCI

Wednesday, June 25th: **Forge and Orchard Meadow Sampling-B. Winfrey, M. Rippy, A. Mehring, S. Jiang, E. Huang, and E. Gomez – Engineering Tower Loading Dock**

9:00AM: Meet to Board Vans

12:00PM: Lunch (Provided, Boxed)

Thursday, June 26th: **Detecting Human Pathogenic Viruses & Field Work Follow Up – Engineering Gateway 4171**

9:30AM-10:00AM: Breakfast (Provided)

10:00AM-10:50AM: Detecting Human Pathogenic Viruses, Bacteria, and Protozoans II-E. Huang

11:00AM-11:50AM: Detecting Human Pathogenic Viruses, Bacteria, and Protozoans III-Y. Cao

11:50AM-12:50PM: Lunch (Provided)

1:00PM-3:00PM: Demonstration of PCR and Gel Electrophoresis-E. Huang

3:00PM-5:00PM: Field Work Follow-Up and Data Analysis-M. Rippy, A. Mehring, B. Winfrey, S. Jiang, E. Huang, and E. Gomez

Friday, June 27th: **Low Energy Treatment Systems – Engineering Gateway 4171**

8:30AM-9:00AM: Breakfast (Provided)

9:00AM-9:50AM: Application of Ecological Theory to Biofilter Design-L. Levin-via Skype

10:00AM-10:50AM: Case Studies of Low Energy Treatment Systems for Stormwater Management-J. Peng

11:00AM-11:50AM: Discussion/Q&A with Cohorts of Recently Learned Concepts-B. Sanders and S. Jiang

11:50AM-12:50PM: Lunch (Provided)

1:00PM-2:00PM: Tour of UCI Stormwater Capture Reuse Projects-R. Demerjian

2:10PM-2:30PM: Travel to South Coast Research and Extension Center

2:30PM-4:00PM: Tour of Pilot Homes at South Coast Research and Extension Center-D. Haver

Saturday, June 28th – **Free Day**

Sunday June 29th – **Travel to Australia**

4:30PM – 7:55PM: Early Dinner, Confirmation of Paperwork, Movie (Engineering Gateway 4171)

7:55PM: Board Shuttles to LAX

11:30PM: Flight Departure





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Week 3

Monday, June 30th: **Day Lost in Time Vortex**

Tuesday, July 1st: **Arrive in Australia**

6:35AM: Land in Melbourne

8:00AM: Board Sky Bus & Travel to University of Melbourne

9:00AM-10:00AM: Check into Housing

10:00AM+: Free Day to Acclimate

Wednesday, July 2nd: **Tour of Lab Facilities**

10:00AM-10:50AM: Tour of Lab Facilities

11:00AM-11:50AM: Safety Lecture

11:50AM-12:50PM: Lunch

1:00PM-5:00PM: Preparation of Lab Materials for Sampling-S. Jiang, K. Low, and M. Rippy

Thursday, July 3rd: **Lynbrook Biofilter Tour and Wetland Sampling-A. Mehring, B. Winfrey, S. Jiang, S. Grant, M. Rippy, and K. Low**

Friday, July 4th: **Economics and Governance**

10:00AM-10:50AM: Basics of Benefit Cost Analysis I-J. Saphores

11:00AM-11:50AM: Basics of Benefit Cost Analysis II-J. Saphores

11:50AM-12:50PM: Lunch

1:00PM-1:50PM: Valuation Techniques to Assess Environmental Benefits-J. Saphores

2:00PM-2:50PM: Discussion/Q&A with Cohorts of Recently Learned Concepts-D. Feldman and S. Grant

3:00PM-5:00PM: Field Work Follow-Up and Data Analysis-B. Winfrey, A. Mehring, S. Jiang, S. Grant, M. Rippy, and K. Low

Saturday, July 5th – Sunday, July 6th: **Free Days**





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Week 4

Monday, July 7th: **Hampton Park Sampling-A. Mehring, B. Winfrey, S. Jiang, S. Grant, M. Rippy, and K. Low**

Tuesday, July 8th: **Royal Park Sampling-A. Mehring, B. Winfrey, S. Jiang, S. Grant, M. Rippy, and K. Low**

9:00AM-9:30AM: Interaction with AISIESS Students

Wednesday, July 9th: **Urban Water Supply & Public Perception of Water Risks**

9:20AM-9:50AM: Interaction with AISIESS Students

10:00AM-10:50AM: An Overview of Risk Assessment-S. Jiang

11:00AM-11:50AM: Urban Water Supply and Wastewater Systems of Southeast Australia-S. Grant

11:50AM-12:50PM: Lunch

1:00PM-1:50PM: Public Perception of Water Risks: U.S. vs Australia-J. Saphores

2:00PM-2:50PM: Cohort Interaction with Australian Researchers

3:00PM-5:00PM: Field Work Catch-Up and Data Analysis-B. Winfrey, A. Mehring, S. Jiang, S. Grant, M. Rippy, and K. Low

Thursday, July 10th: **Tour of Maribyrnong/Jackson Creek and Western Water Treatment Plant -J. Saphores, D. Feldman, and V. Pettigrew**

9:00AM-9:30AM: Interaction with AISIESS Students

Friday, July 11th: **Statistical Tools for Data Analysis**

9:00AM-9:30AM: Interaction with AISIESS Students

9:45AM-11:00AM: Advanced Statistical Tools for Data Analysis-M. Rippy, A. Mehring and B. Winfrey

11:10AM-12:00PM: Guided Work with Recently Collected Data-M. Rippy, A. Mehring and B. Winfrey

12:00PM-1:00PM: Lunch

1:15PM-2:30PM: Advanced Statistical Tools for Data Analysis-M. Rippy, A. Mehring and B. Winfrey

2:40PM-3:30PM: Guided Work with Recently Collected Data-M. Rippy, A. Mehring and B. Winfrey

3:45PM-5:00PM: Discussion/Q&A with Cohorts of Recently Learned Concepts-J. Saphores and S. Grant

Saturday, July 12th – Sunday, July 13th: **Free Days**

Monday, July 14th: **Tour of Monash Facilities & Communicating Scientific Findings**

9:00AM-10:00AM: Travel to Monash University

10:00AM-12:30PM: Tour of Monash University Laboratory Facilities and Greenhouse

12:30PM-1:30PM: Lunch

1:30PM-2:30PM: Travel back to UM

3:00PM-3:50PM: Communicating Scientific Findings in Written and Oral Forms-M. Rippy, A. Mehring, and B. Winfrey

4:00PM-4:50PM: Communicating Broader Societal Impacts and Public Outreach-J. Rowe

Tuesday, July 15th: **Travel to The United States**

6:00AM: Travel to Melbourne Int'l Airport

9:10AM: Flight Departure

6:35AM (US Time): Arrival at LAX

7:45AM: Shuttle Pickup to UCI

Wednesday, July 16th: **Free Day**





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Week 5

Wednesday, July 16th: **Free Day**

Thursday, July 17th: **Tours of OCWD, GWRS & OCSD – Engineering Tower Loading Dock**

7:15AM-8:00AM: Travel to OCWD GWRS/OCSD

8:00AM-3:30PM: Tour of OCWD GWRS/OCSD-D. Feldman and J. Saphores

3:30PM-4:15PM: Travel back to UCI

Friday, July 18th: **Policies and Governance, Group Discussion – Engineering Gateway 4171**

8:30AM-9:00AM: Breakfast (Provided)

9:00AM-9:50AM: Quantitative Microbial Risk Assessment (QMRA) as an Approach to Assessing Public Health-K. Lim and S. Jiang

10:00AM-10:50AM: Policies for Governing and Associated Public Concerns-L. Stuvick, A. Sengupta, and D. Feldman

11:00AM-11:50AM: Summary, Limitations, and Future Learning Challenges-J. Saphores and D. Feldman

11:50AM-12:50PM: Lunch (Provided)

1:00PM-1:50PM: Discussion/Q&A with Cohorts of Recently Learned Concepts-S. Grant

2:00PM-2:45PM: Discussion of Group Presentations and Selection of Groups-S. Grant and S. Jiang

2:45PM-3:45PM: Group Discussions of Data Analysis and Presentation

3:45PM-5:00PM: Group Presentations of Ideas for Data Analysis and Final Presentation/Refinement of Ideas-S. Grant

Saturday, July 19th – Sunday, July 20th: **Free Days**





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Week 6

Monday, July 21st: **Group Work & Informal Presentations – ECT 123**

9:00AM-11:50AM: Group Work on Data Analyses and Presentations

11:50AM-12:50PM: Lunch (Not Provided)

1:00PM-2:30PM: Informal Presentations of Data Analyses and Presentation Ideas for Review-Groups 1 and 2-K. Low and K. Lim

3:00PM-4:30PM: Informal Presentations of Data Analyses and Presentation Ideas for Review-Groups 3 and 4-L. Stuvick and E. Huang

Tuesday, July 22nd: **Group Work & Informal Presentations – ECT 123**

9:00AM-11:50AM: Group Work on Data Analyses and Presentations

11:50AM-12:50PM: Lunch (Not Provided)

1:00PM-2:30PM: Practice Presentations for Review-Groups 1 and 2-L. Stuvick and E. Huang

3:00PM-4:30PM: Practice Presentations for Review-Groups 3 and 4-K. Low and K. Lim

Wednesday, July 23rd: **Desalination Panel & Tour of Aquarium of the Pacific – Engineering Gateway 4171**

10:00AM-11:30AM: Panel Discussion: Desalination-J. Saphores

12:00PM-1:30PM: Lunch with Panel Participants (Provided)

2:00PM-3:00PM: Travel to Aquarium of the Pacific

3:00PM-5:30PM: Enjoy the Aquarium

5:30PM-6:30PM: Return to UCI

Thursday, July 24th: **Review of Final Papers – Engineering Gateway 4171**

9:00AM-11:50AM: Peer Review of Written Summaries of Research

11:50AM-12:50PM: Lunch (Not Provided)

1:00PM-1:50PM: Revisions of Written Summaries

2:00PM-3:50PM: Faculty Review of Summaries-L. Levin, R. Ambrose, S. Jiang, and S. Grant

4:00PM-5:00PM: Editing and Final Paper Submission

Friday, July 25th: **Final Presentations**

8:30AM-10:45AM: Practice of Presentations

11:00AM-11:30AM: Group 1 Presentation

11:45AM-12:15PM: Group 2 Presentation

12:30PM-1:30PM: Lunch (Not Provided)

1:45PM-2:15PM: Group 3 Presentation

2:30PM-3:00PM: Group 4 Presentation

3:15PM-4:00PM: Closing Remarks-S. Grant

4:00PM-5:00PM: Reception

