



*An Evening With Industry*

Seminar

## PROCESS AND ENERGY AUDITS OF WATER RESOURCE RECOVERY FACILITIES: THEORY TO PRACTICE

Followed by a Networking Reception

**Abstract** - The relationship between water and energy is a pressing issue in several areas of the world. The question of water importation versus on-site reclamation or desalination has been dominating our field for years and has helped shifting the paradigm in engineering design and process selection. Furthermore, the concern with climate change effects and the correspondent regulations have brought more attention to the carbon-equivalent process emissions and the overall environmental impacts of processes for water reclamation, reuse, and wastewater treatment. We present here investigations at the water-energy-carbon nexus, the effects of process dynamics on energy and carbon footprint, as well as the effects of climate change on the treatment processes.

**Daniel Nolasco** has over 25 years of engineering experience in applying dynamic modeling techniques for design and optimization of wastewater treatment plants. He has published over 100 technical papers in journals and conference proceedings and has co-authored four books. His clarification/thickening model is used in most wastewater treatment simulators, has received over 500 citations, and is considered by the International Water Association as one of the "10 most significant groundbreaking papers during the [past] 40 years" in Water Research. He is Director of IWA and a UCI WEX Industrial Fellow.



**Jose Jimenez** is a Vice President and Senior Process and Technical Specialist at Brown and Caldwell who has been involved with the functional design of numerous wastewater treatment plants across the U.S. Jose has worked as senior process design engineer; carried out onsite research; and is the author of over 100 technical papers in journals and conference proceedings. Dr. Jimenez currently serves as Brown and Caldwell's Director of Water Technology and Innovation.

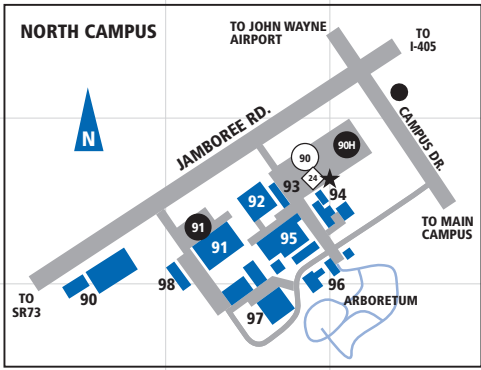
**WHEN:** May 5<sup>th</sup>, 2016  
**WHAT:** 5:00 - 6:00 pm: Seminar  
6:00 - 7:00 pm: Networking Reception  
**WHERE:** UCI Engineering Hall 2430  
(map attached)

MEET PROFESSIONALS FROM INDUSTRY  
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# IRVINE CAMPUS CORE

UCI IRVINE | UNIVERSITY of CALIFORNIA



- LEGEND**
- BUILDINGS
  - BUILDING SITES
  - PARKING LOTS
  - DISABLED PARKING AVAILABLE
  - WALKWAYS
  - FOOTBRIDGES
  - BUS STOPS
  - ★ INFORMATION BOOTHS/  
PARKING PERMITS
  - ▲ SHUTTLE STOPS
  - EMERGENCY PHONES
  - STUDENT HOUSING

THE EVENT IS HERE  
2430 Engineering Hall  
Harut Barsamian Colloquia Room

PARK HERE

For east campus and University Hills, see Campus Map Brochure available at information booths or [www.uci.edu/campusmap](http://www.uci.edu/campusmap)

**Building/ABBREVIATION/Map Coordinate/  
Building Number**

Administration ALH (Aldrich Hall) (E9) **111**  
Administrative Computing Services (H6) **423**  
Administrative Modular (H6) **423**  
Admissions:  
    School of Medicine (E4) **821**  
    Graduate (E9) **111**  
    Undergraduate (E9) **111**  
Air Pollution Labs APL (B3) **94**  
Aldrich Hall ALH (Administration) (E9) **111**  
Alumni House AH (G10) **233**  
American Academy of Arts & Sciences (D3) **A**  
Anteater Instruction & Research Building AIRB  
    (H9) **653**  
Arboretum ARBO (C3) **96**  
Art, Culture & Technology ACT (C7) **727**  
Art Studio ART (D7) **722**  
Arts Computation Engineering Trailers ACE (E6) **522**  
Arts Instruction & Technology Resource Center  
    AITR (D8) **714**  
Arts Student Affairs (D7) **58**  
Arts Village (D7) **710-728**  
Athletics Complex:  
    Anteater Ballpark (C6) **917**  
    Anteater Stadium (C5) **911**  
    Bren Events Center (D6) **901**  
    Crawford Clubhouse (E5) **919**  
    Crawford Field (D5) **909**  
    Crawford Hall (D6) **903**  
    Crawford Pool (D6) **905**  
    Tennis Courts (C6) **913**  
    Vista Field (C6) **915**  
Beall Center for Art & Technology (D8) **712**  
Beckman Center of the National Academies  
    of Sciences & Engineering (C4) **80**  
Beckman Laser Institute BLI (F4) **817**  
Berk Hall BH (E5) **802**  
Berkeley Place BP (G11) **3, 4**  
Bike Shop (D8) **9**  
Biological Sciences III B53 (F6) **519**  
Biological Sciences Administration BSA (G6) **515**  
Bookstore (E8) **113**  
Bren Events Center (D6) **901**  
Bren Hall DBH (H8) **314**  
Building Services Bldg. (G5) **899**  
Calif. Inst. for Telecom. & Info. Tech. [Calit2] (H8) **325**  
Cancer Research Institute (F7) **502**  
Career Center (E8) **105**  
Center for the Neurobiology of Learning &  
    Memory CNLM (Herklotz Research Facility):  
    Annex CNLMA (E6) **516**  
    Bonney Research Laboratory BRL (F6) **512**  
    Qureshey Research Laboratory QRL (F7) **506**  
Center for Research on Info. Tech. & Org. (H3) **H**  
Central Plant CP (E6) **902**  
Chancellor's Office (E9) **111**  
Child Development Center CD (B1) **90**  
Choral Studio (D8) **718**  
Corporate Development (D11) **4199**  
Costume Shop (D7) **713**  
Counseling Center (E8) **105**  
Crawford Clubhouse (E5) **919**  
Crawford Hall CH (D6) **903**  
Cross-Cultural Center CRCC (E8) **103**  
Croul Hall CRH (G7) **417**  
Dance Studios DS (D7) **713**  
Disability Services Center (G8) **313**  
Drama Building DRA (D7) **715**  
Drama Design Laboratory (E7) **603**  
Education (Berkeley Pl. N) (F11) **3**  
Electrical Substation (H4) **40**  
Engineering III (H8) **308**  
Engineering & Computing Trailer ECT (G9) **317**  
Engineering Gateway EG (H8) **321**  
Engineering Laboratory Facility ELF (H9) **323**  
Engineering Lecture Hall ELH (G8) **305**  
Engineering Tower ET (G8) **303**  
Env. Health & Safety Services Facility (H4) **41**  
Equal Opportunity & Diversity (H6) **415**  
Facilities Management Shops (C2) **97**  
Faculty Research Facility FRF (B2) **95**

Faculty/Staff Housing Office (I7) **31**  
Food Facilities:  
    B.C.'s Cavern on the Green (F7) **500**  
    Cafe Med (E5) **800**  
    CyberA Cafe (D8) **712**  
    Phoenix Grille (G9) **204**  
    Student Center (E8) **113**  
Founders' Court (E7) **560**  
Gateway Study Center GC (F8) **101**  
Gillespie Neuroscience Research Facility GNRF (F4)  
    **837**  
Gottschalk Medical Plaza (E4) **820**  
Graduate Division (E9) **111**  
Greenhouse (E7) **514**  
Gross Hall (F4) **845**  
Grounds Maintenance Facility (G5) **897**  
Health Education (E8) **113**  
Health Policy Research (D3) **A**  
Herklotz Research Facility (F6) **506, 512**  
Hewitt Research Hall HRH (F3) **843**  
Housing Administrative Services HAS (E8) **113**  
Human Resources, Staff (F2) **E**  
Humanities Gateway HG (E7) **611**  
Humanities Hall HH (E7) **601**  
Humanities Instructional Building HIB (E8) **610**  
Humanities Interim Classroom Facility HICF (E6) **523**  
Humanities Office Bldg. 2 HOB2 (E7) **625**  
Humanities Research Institute (E9) **111**  
Information, Campus (G11) **6, (E9) 111, (E8) 113**  
Information & Computer Science ICS (G8) **302**  
Information & Computer Science II ICS2 (G8) **304**  
Institute for Surface & Interface Sci. (G7) **401**  
Institute of Transportation Studies (F9) **201**  
Interfaith (G9) **319**  
Interim Classroom Facility ICF (G9) **315**  
Interim Office Building (B2) **92**  
Internal Audit (H6) **423**  
International Center (G11) **6**  
Irvine Barclay Theatre (E9) **1**  
Irvine Hall IH (E3) **835**  
Krieger Hall KH (E8) **600**  
KUCI Radio Station (E6) **521**  
Law (Berkeley Pl. S) (G11) **4**  
Learning & Academic Resource Center LARC (G7)  
    **400**  
Libraries:  
    Langson Library LLIB (F9) **102**  
    Science Library SLIB (F6) **520**  
    Little Theatre (E7) **601**  
    Mailroom (B2) **93**  
    McDonnell Douglas Engineering Auditorium MDE  
    (H8) **311**  
    McGaugh Hall MH (F7) **503**  
    Medical Education Building (F3) **836**  
    Medical Sciences A Administration (F4) **815**  
    Medical Sciences A Annex (F4) **819**  
    Medical Sciences A MS-A (F5) **813**  
    Medical Sciences B MS-B (E5) **811**  
    Medical Sciences C MS-C (E4) **821**  
    Medical Sciences D, Cheney Hall (E4) **825**  
    Medical Sciences E MS-E (E4) **827**  
    Medical Sciences Classroom Facility (E3) **833**  
    Medical Surge I MS1 (E5) **810**  
    Medical Surge II MS2 (E5) **812**  
    Merage School of Business SB (F10) **221**  
    Mesa Arts Building MAB (D7) **58**  
    Mesa Office Building MOB (C7) **59**  
    MRI 3T Trailer (E4) **841**  
    MRI 4T Trailer (E3) **832**  
    Multipurpose Academic & Administrative Bldg.  
    MPAA (F10) **2**  
    Multipurpose Science & Technology Bldg. MSTB  
    (H6) **415**  
    Music & Media Building MM (D8) **726**  
    National Fuel Cell Research Center (H9) **323**  
    Natural Sciences I NS1 (G6) **517**  
    Natural Sciences II NS2 (G6) **402**  
    Network & Academic Computing Services  
    (H9) **321, (H3) G, (H6) 415**  
    New Media Arts Center (D7) **721**  
    Nixon Theatre (D8) **720**  
    Painting Studios (D7) **722**

Parking & Transportation Services (G11) **7**  
Parkview Classroom Building PCB (G7) **403**  
Performance Studios PSTU (C7) **728**  
Physical Sciences Classroom Building PSCB (G7) **413**  
Physical Sciences High Bay (G6) **404**  
Physical Sciences Lecture Hall PSLH (G7) **411**  
Plumwood House PH (Hitachi) (F4) **829**  
Police (G11) **7**  
Production Studio (D7) **723**  
Public Services PSB (G11) **7**  
Purchasing (G11) **7**  
Receiving (B2) **91**  
Recycling Center (B2) **98**  
Registrar:  
    School of Medicine (E4) **827**  
    Main Campus (E9) **111**  
    Reines Hall FRH (G7) **401**  
    Research (E9) **111**  
    Rockwell Engineering Center REC (H8) **311**  
    Rowland Hall RH (G7) **400**  
    Schneiderman Lecture Hall HSLH (F7) **501**  
    Sculpture & Ceramic Studios SCS (D8) **720**  
    Smith Hall WSH (D7) **710**  
    Social & Behavioral Sciences (F10) **214**  
    Social Ecology I SE (G9) **210**  
    Social Ecology II SE2 (F9) **215**  
    Social Science Plaza A SSPA (F9) **211**  
    Social Science Plaza B SSPB (F10) **213**  
    Social Science Hall SSH (F9) **200**  
    Social Science Laboratory SSL (G9) **202**  
    Social Science Lecture Hall SSLH (F9) **212**  
    Social Science Tower SST (F9) **201**  
    Social Science Trailer SSTR (F9) **203**  
    Sprague Hall SPH (F3) **839**  
    Steinhaus Hall SH (F7) **502**  
    Student Center SC (E8) **113**  
    Student Health Center SHC (G11) **5**  
    Student Services I, II SS1, SS2 (E8) **105**  
    Studio Art Trailer (E6) **523**  
    Studio Four STU4 (D7) **725**  
    Studio Theatre (D7) **713**  
    Tamkin Student Lecture Building (E4) **831**  
    Teacher Education (F11) **3**  
    Technology Alliances, Office of (D11) **4199**  
    Thermal Energy Storage Tank (D7) **900**  
    Thesaurus Linguae Graecae (F11) **4199**  
Ticket Offices:  
    Bren Events Center (D6) **901**  
    Irvine Barclay Theatre (E9) **1**  
    UCI Arts (D7) **711**  
Tours (E9) **111**  
Track & Field House (C5) **907**  
Trevor Theatre CTT (D7) **711**  
UCI Environ. Inst.: Global Change, Energy & Sust.  
    Resources (H6) **415**  
University Art Gallery (D8) **712**  
University Club UN CLB (H7) **801**  
University Extension A UNEX (G10) **231**  
University Extension B UNEX (G10) **230**  
University Extension C UNEX (G10) **232**  
University Extension D UNEX (G10) **234**  
University Extension H UNEX (H11) **236**  
University Extension ESL Offices (G10) **238**  
University Tower UT (D11) **4199**  
Visitor Center (E8) **113**  
Volunteer Center (Center for Service in Action)  
    (E8) **113**  
Women's Opportunities Center (G10) **231**  
  
**Buildings**  
**1** Irvine Barclay Theatre (E9)  
**2** Multipurpose Academic & Administrative Bldg.  
    MPAA (F10)  
**3** Education (Berkeley Pl. N) (F11)  
**4** Law (Berkeley Pl. S) (G11)  
**5** Student Health Center SHC (G11)  
**6** International Center (G11)  
**7** Public Services PSB (G11)  
**9** Bike Shop (D8)  
**31** Faculty/Staff Housing Office (I7)  
**40** Electrical Substation (H4)  
**41** Env. Health & Safety Services Facility (H4)

**58** Mesa Arts Building MAB (D7)  
**59** Mesa Office Building MOB (C7)  
**80** Beckman Center of the National Academies of  
    Sciences & Engineering (C4)  
**90** Child Development Center CDC (B1)  
**91** Receiving (B2)  
**92** Interim Office Building (B2)  
**93** Mailroom (B2)  
**94** Air Pollution Labs APL (B3)  
**95** Faculty Research Facility FRF (B2)  
**96** Arboretum ARBO (C3)  
**97** Facilities Management Shops (C2)  
**98** Recycling Center (B2)  
**101** Gateway Study Center GC (F8)  
**102** Langson Library LLIB (Main Library) (F9)  
**103** Cross-Cultural Center CRCC (E8)  
**105** Student Services I, II SS1, SS2 (E8)  
**111** Aldrich Hall ALH (Administration) (E9)  
**113** Student Center SC (E8)  
**200** Social Science Hall SSH (F9)  
**201** Social Science Tower SST (F9)  
**202** Social Science Laboratory SSL (G9)  
**203** Social Science Trailer SSTR (F9)  
**204** Phoenix Grille PHX GRILL (G9)  
**210** Social Ecology I SE (G9)  
**211** Social Science Plaza A SSPA (F9)  
**212** Social Science Lecture Hall SSLH (F9)  
**213** Social Science Plaza B SSPB (F10)  
**214** Social & Behavioral Sciences (F10)  
**215** Social Ecology II SE2 (F9)  
**221** Merage School of Business MSB (F10)  
**230** University Extension B UNEX (G10)  
**231** Women's Opportunities Center/University  
    Extension A UNEX (G10)  
**232** University Extension C UNEX (G10)  
**233** Alumni House AH (G10)  
**234** University Extension D UNEX (G10)  
**236** University Extension H UNEX (H11)  
**238** University Extension ESL Offices (G10)  
**302** Information & Computer Science ICS (G8)  
**303** Engineering Tower ET (G8)  
**304** Information & Computer Science 2 ICS2 (G8)  
**305** Engineering Lecture Hall ELH (G8)  
**308** Engineering III (H8)  
**311** Rockwell Engineering Center REC (H8)  
**313** Disability Services Center (G8)  
**314** Bren Hall DBH (H8)  
**315** Interim Classroom Facility ICF (G9)  
**317** Engineering & Computing Trailer ECT (G9)  
**319** Interfaith (G9)  
**321** Engineering Gateway EG (H8)  
**323** Engineering Laboratory Facility ELF (H9)  
**325** Calif. Inst. for Telecom. & Info. Tech. [Calit2] (H8)  
**400** Rowland Hall RH (G7)  
**401** Reines Hall FRH (G7)  
**402** Natural Sciences II NS2 (G6)  
**403** Parkview Classroom Building PCB (G7)  
**404** Physical Sciences High Bay (G6)  
**411** Physical Sciences Lecture Hall PSLH (G7)  
**413** Physical Sciences Classroom Building PSCB (G7)  
**415** Multipurpose Science & Technology Bldg.  
    MSTB (H6)  
**417** Croul Hall CRH (G7)  
**423** Administrative Modular (H6)  
**500** B.C.'s Cavern on the Green (F7)  
**501** Schneiderman Lecture Hall HSLH (F7)  
**502** Steinhaus Hall SH (F7)  
**503** McGaugh Hall MH (F7)  
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**512** Bonney Research Laboratory BRL (F6)  
**514** Greenhouse (E7)  
**515** Biological Sciences Administration BSA (G6)  
**516** Center for the Neurobiology of Learning &  
    Memory Annex CNLMA (E6)  
**517** Natural Sciences I NS1 (G6)  
**519** Biological Sciences III (F6)  
**520** Science Library SLIB (F6)  
**521** KUCI Radio Station (E6)  
**522** Arts Computation Engineering Trailers ACE (E6)  
**523** Humanities Interim Classroom Facility/Studio  
    Art Trailer HICF (E6)  
**560** Founders' Court (E7)

**600** Krieger Hall KH (E8)  
**601** Humanities Hall HH (E7)  
**603** Drama Design Laboratory (E7)  
**610** Humanities Instructional Building HIB (E8)  
**611** Humanities Gateway HG (E7)  
**625** Humanities Office Bldg. 2 HOB2 (E7)  
**653** Anteater Instruction & Research Building  
    AIRB (H9)  
**710** Smith Hall WSH, Rehearsal Studio (D7)  
**711** Trevor Theatre CTT (D7)  
**712** University Art Gallery (D8)  
    Beall Center for Art & Technology (D8)  
**713** Studio Theatre & Dance Studios (D7)  
**714** Arts Instruction & Technology Resource  
    Center AITR (D8)  
**715** Drama Building DRA (D7)  
**718** Choral Studio (D8)  
**720** Sculpt./Ceramic Studios/Nixon Theatre SCS (D8)  
**721** New Media Arts Center (D7)  
**722** Art Studio ART (D7)  
**723** Production Studio (D7)  
**725** Studio Four STU4 (D7)  
**726** Music & Media Building MM (D8)  
**727** Art, Culture & Technology ACT (C7)  
**728** Performance Studios PSTU (C7)  
**800** Cafe Med (E5)  
**801** University Club UN CLB (H7)  
**802** Berk Hall BH (E5)  
**810** Medical Surge I MS1 (E5)  
**811** Medical Sciences B MS-B (E5)  
**812** Medical Surge II MS2 (E5)  
**813** Medical Sciences A MS-A (F5)  
**815** Medical Sciences A Administration (F4)  
**817** Beckman Laser Institute BLI (F4)  
**819** Medical Sciences A Annex (F4)  
**820** Gottschalk Medical Plaza (E4)  
**821** Medical Sciences C MS-C (E4)  
**825** Medical Sciences D, Cheney Hall (E4)  
**827** Medical Sciences E MS-E (E4)  
**829** Plumwood House PH (Hitachi) (F4)  
**831** Tamkin Student Lecture Building (E4)  
**832** MRI 4T Trailer (E3)  
**833** Medical Sciences Classroom Facility (E3)  
**835** Irvine Hall IH (E3)  
**836** Medical Education Building (F3)  
**837** Gillespie Neuroscience Research Facility  
    GNRF (F4)  
**839** Sprague Hall SPH (F3)  
**841** MRI 3T Trailer (E4)  
**843** Hewitt Research Hall HRH (F3)  
**845** Gross Hall (F4)  
**897** Grounds Maintenance Facility (G5)  
**899** Building Services Bldg. (G5)  
**900** Thermal Energy Storage Tank (D7)  
**901** Bren Events Center (D6)  
**902** Central Plant CP (E6)  
**903** Crawford Hall CH (D6)  
**905** Crawford Pool (D6)  
**907** Track & Field House (C5)  
**909** Crawford Field (D5)  
**911** Anteater Stadium (C5)  
**913** Tennis Courts (C6)  
**915** Vista Field (C6)  
**917** Anteater Ballpark (C6)  
**919** Crawford Clubhouse (E5)  
**4199** University Tower UT (D11)  
  
**Housing Complexes**  
Campus Village CV (F5)  
Mesa Court MESA (C8)  
Middle Earth ME (G9)  
  
**University Research Park**  
**A** 111 Academy (D3)  
**B** 101 Academy (D3)  
**C** 100 Theory (E2)  
**D** 100 Theory (F2)  
**E** 111 Theory (F2)  
**F** 5171 California (H2)  
**G** 5201 California (H3)  
**H** 5251 California (H3)