

## RICA MAE C. ENRIQUEZ

Doctoral Candidate



Environmental Fluid Mechanics & Hydrology Program  
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## EDUCATION

### STANFORD UNIVERSITY, STANFORD, CA — 2005-PRESENT

Ph.D. in Environmental Fluid Mechanics and Hydrology — expected 2011  
M.S. in Environmental Fluid Mechanics and Hydrology — 2006

### JOHNS HOPKINS UNIVERSITY, BALTIMORE, MD — 2001-2005

B.S. with honors in Environmental Engineering — 2005

## HONORS

- ◆ National Center for Atmospheric Research Advanced Study Program Fellowship — Summer 2007
- ◆ National Science Foundation Graduate Research Fellowship — 2005-2008
- ◆ Stanford University Engineering Graduate Diversity Fellowship — 2005-2006
- ◆ JHU Lucien Brush Award for Environmental Engineering Academic Excellence — 2005
- ◆ JHU Mentoring Assistance Peer Program: Mentor of the Year Award — 2005
- ◆ JHU Provost Undergraduate Research Award — Autumn 2004
- ◆ JHU Wye Undergraduate Scholarship — 2003-2005

## RESEARCH EXPERIENCE

### STANFORD UNIVERSITY, STANFORD, CA — 2005-PRESENT

PI: Robert L. Street

*Implementation of a Subgrid-Scale Stress Turbulence Model in a Regional Weather Prediction System*

- ◆ Investigated the increased accuracy of ARPS (Advanced Regional Prediction System) with a novel subgrid-scale turbulence model

*Terrain-Rotor Experiment (T-REx)*

- ◆ Installed and collected soil moisture and temperature sensors within Owens Valley

### JOHNS HOPKINS UNIVERSITY, BALTIMORE, MD — 2002-2005

PI: Marc Parlange

*Large-Eddy Simulations of the Atmospheric Boundary Layer*

- ◆ Simulated effects of grid size on land-atmosphere interaction using remote-sensed data and large eddy simulations

*Biocomplexity Project*

- ◆ Profiled transport of corn pollen using a 3-D LiDAR (Light Detection And Ranging) scanning process
- ◆ Designed 2-D LiDAR periscope

### COLUMBIA UNIVERSITY, NEW YORK, NY — 2002-2003

PI: Peter Schlosser

*Tidal Tracer Transport Project*

- ◆ Surveyed the effects of tidal phase on solute transport in the NY/NJ Harbor, East River, and Hudson River
- ◆ Constructed and calibrated an automated sampling and gas chromatography-electron capture device (GC-ECD) system

### JOHNS HOPKINS UNIVERSITY, BALTIMORE, MD — 2001-2002

PI: A. Lynn Roberts

*Ecotoxicology Study of Human Pharmaceuticals and Personal Care Products (PPCPs)*

- ◆ Investigated the biological activity of natural water samples with a total organic carbon (TOC) analyzer
- ◆ Collected, organized, and discussed data of existing environmental risk assessments

### RUTGERS UNIVERSITY, NEW BRUNSWICK, NJ — 2000-2001

PI: Max Häggblom

*Bioremediation of PAHs Study*

- ◆ Evaluated the feasibility of a plant-microbial based decontamination technology to treat polluted dredge materials from the New York and New Jersey Harbor
- ◆ Designed and implemented a bench-scale bio-slurry bioreactor study

## PUBLICATIONS

- Caplow T, P Schlosser, DT Ho, and RC Enriquez, 2004: Effect of tides on solute flushing from a strait: imaging flow and transport in the East River with SF6. *Environmental Science & Technology*, **38** (17), 4562-4571.
- Launen LA, VH Buggs, ME Eastep, RC Enriquez, JW Leonard, MJ Blaylock, JW Huang, and MM Häggblom, 2002: Bioremediation of polyaromatic hydrocarbon-contaminated sediments in aerated bio-slurry reactors. *Bioremediation Journal*, **6** (2), 125-141.

## PRESENTATIONS & POSTERS

- Enriquez RC, March 2009: Subgrid-scale turbulence modeling for improved large-eddy simulation of flow in the planetary boundary layer. Stanford University Environmental Fluid Mechanics & Hydrology Qualifying Exam.
- Dombroski D, RC Enriquez, I Grooms, and J-Z Zhu: Finding squall lines in the Kelvin-Helmholtz instability. NCAR IMAGE Theme for 2008: Geophysical Turbulence Summer School, July 2008.
- Enriquez RC, RL Street, and FL Ludwig: LES is more with Rica-struction. NCAR IMAGE Theme for 2008: Geophysical Turbulence Summer School, July 2008; Stanford University Atmosphere/Energy Seminar, Winter 2008; Stanford University Environmental Fluid Mechanics & Hydrology Seminar, Autumn 2007.
- Caplow T, P Schlosser, DT Ho, and RC Enriquez: Effect of tidal phase on solute flushing from a strait: SF6 tracer study in the East River, New York. American Geophysical Union Conference, December 2003.
- Caplow T, P Schlosser, DT Ho, N Santella, J Lipscomb, M Garrison, RC Enriquez: Transport & dispersion in New York Harbor: a high resolution SF6 tracer study. American Geophysical Union Conference, December 2002.

## TEACHING EXPERIENCE

### CEE 064/263D. AIR POLLUTION: FROM URBAN SMOG TO GLOBAL CHANGE — WINTER 2009

Professor: Mark Z. Jacobson

- ◆ Guest-taught two lectures
- ◆ Graded final papers

### CEE 160. MECHANICS OF FLUIDS LABORATORY — SPRING 2008

Professor: Stephen G. Monismith

- ◆ Held office hours to answer questions on laboratory assignments
- ◆ Graded laboratories
- ◆ Prepared and supervised four laboratory experiments
- ◆ Created supplementary material to complete laboratory assignments
- ◆ Performed one lecture

### CEE 064/263D. AIR POLLUTION: FROM URBAN SMOG TO GLOBAL CHANGE — WINTER 2008

Professor: Mark Z. Jacobson

- ◆ Held office hours to answer questions on homework, quizzes, and the course project
- ◆ Graded papers and homework
- ◆ Prepared three review lectures
- ◆ Performed five lectures

## TEACHING & MENTORING DEVELOPMENT COURSES

### CTL 400. FUTURE FACULTY SEMINAR— AUTUMN 2008

- ◆ This was a weekly speaker and workshop series on tenure, grant writing, teaching, service, getting hired, and other non-research aspects of the profession.

### CTL 230. MENTORING IN RESEARCH— SPRING 2008

- ◆ We focused on knowledge, skills, and hands-on training to mentor undergraduate research assistants. Topics included communication and project management skills, different learning styles, and cultural, ethnic and socioeconomic diversity.

### CEE 200B. TEACHING OF CIVIL AND ENVIRONMENTAL ENGINEERING— SPRING 2008

- ◆ This course involved discussions on problem solving techniques and learning styles, individual and group instruction, the role of TAs, balancing other demands, and, grading.

### CTL 312. SCIENCE AND ENGINEERING COURSE DESIGN— AUTUMN 2007

Professor: Robyn W. Dunbar

- ◆ Designed effective course materials by employing research on science learning. Topics included syllabus design, course content and format decisions, assessment planning and grading, and strategies for teaching improvement.

## ACADEMIC SERVICE

### STANFORD WOMEN IN SCIENCE AND ENGINEERING— 2008-PRESENT

Member of local support group

### STANFORD GEOKIDS — 2008-PRESENT

Lead hands-on educational activities for local first graders

### STANFORD KAPATID — 2007-2008

Mentor for students at Fremont High School

### STANFORD ENGINEERS FOR A SUSTAINABLE WORLD — 2005-2006

Co-Director of Events

### THE JOURNAL OF YOUNG INVESTIGATORS — 2003-2005

Associate Editor, Co-Developer of the Science Career Center

### JHU ENGINEERS WITHOUT BORDERS— 2004-2005

Executive Board Member

### JHU MENTORING ASSISTANCE PEER PROGRAM — 2003-2005

2005 Mentor of the Year

Mentor for four multicultural college freshmen

Diversity Committee

### JHU FILIPINO STUDENT ASSOCIATION — 2002-2005

Secretary

### JHU SENIOR CLASS GIFT COMMITTEE — 2004-2005

Chair

### JHU PARTNERSHIP FOR STUDENT ACHIEVEMENT — 2002-2004

Mentor for two inner city Baltimore middle school students

## PROFESSIONAL AFFILIATIONS

American Meteorological Society — 2005-Present

Engineer-In-Training Certification — 2005

## FOREIGN LANGUAGES

Tagalog(proficient in reading, writing, speaking)

Spanish(familiar with reading, writing, speaking)

## REFERRALS

### ROBERT L. STREET

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### FRANCIS L. LUDWIG

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