GREGORY IAN BALL

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EDUCATION

[2007-current] Scripps Institution of Oceanography, Univ. of California - San Diego La Jolla, CA
□ Ph.D. (ongoing) Marine Chemistry & Geochemistry **Advisor:** Prof. Lihini Aluwihare

[2003-2007] UC Berkeley Berkeley, California
□ B.A. – High Honors in Geology, College of Letters and Science
□ B.S. – Chemical Biology, College of Chemistry

RESEARCH/WORK EXPERIENCE

[June 1, 2006 – Aug. 2007] Lawrence Berkeley National Lab (LBL) Berkeley, CA
Undergraduate Student Researcher *Advised by: Dr. Gary Andersen (LBL)*

Project 1: Molecular genetics of climate change – quantifying variations in plant metabolic gene expression (rt-qPCR) in response to changes in climatic conditions, soil nutrient availability, and soil microbial community diversity and composition as measured via the DOE 16S PhyloChip diversity microarray to aid in more effectively modeling the response of the terrestrial biosphere to changing climatic conditions.

Project 2: *Honors Thesis Research advised by Prof. Jillian Banfield (UC Berkeley) and Dr. Gary Andersen (LBL)*
Molecular genetics and expression profiling of *Ferroplasma acidarmanus* (fer1), an acidophile which grows at pH~0-1 in toxic heavy metal concentrations. mRNA expression array analysis of fer1 transcriptome under chemo and mixotrophic growth conditions to examine mechanisms of iron metabolism and differences in the cellular physiologies of fer1's predominant metabolic growth states.

[Winter Break 05-06] Chevron Corporation Perth, WA, AUSTRALIA
International Student Intern, Subsurface Technology Group

Research project examining competitive market stances between competing energy operators in Australasia with regards to their procurement of market-limited subsurface exploration equipment (i.e. drill rigs) necessary to comply with government-mandated environmental and offshore oil and gas-field development obligations. Analyzed sediment cores with company geologists and geophysicists.

[2003-2005] University of California, Berkeley Berkeley, California
Undergraduate Researcher *Advised by: Prof. Terry Machen, Molecular and Cell Biology*

□ Research examining aberrant physiologies and molecular signaling pathways in cystic fibrosis-affected human airway epithelial cells. Investigated the interplay of cytosolic redox state and cellular inflammation (via NFκB proxy) and the mediating roles played by metabolic derivatives of arachidonic (ω-6) and docosahexaenoic (ω-3) acids such as prostaglandins, resolvins, and reactive oxygen species.

□ Awarded proposal-based grad-level fellowship from Cystic Fibrosis Foundation to complete work.

[Summer 2003] University of Washington Seattle, Washington
Undergraduate Researcher *Advised by: Prof. Deirdre Meldrum, Electrical Eng., Genomation Labs*

Co-developed method to controllably immobilize living cells within μm-scale parameters using lectins applied via polydimethyl siloxane stamps molded from custom-designed photolithographically-etched silicon wafers for use in miniaturized, high throughput assay processes (e.g. lab-on-a-chip applications).

[Summer 2001] **University of Washington** **Seattle, Washington**

Internship, Malaria Genetics Research *Advised by: Prof. Carol Sibley, Genome Sciences*

Using yeast genetics to elucidate drug resistance-conferring point mutations in the dihydrofolate reductase (DHFR) pathway of the malaria-causing parasite, *plasmodium falciparum*.

[Aug 2000- Aug 2001] **Pacific Science Center** **Seattle, Washington**

Student Field Researcher/Educational Outreach Coordinator

Howard Hughes Medical Foundation-funded program for biological and chemical monitoring of Northwest salmon habitat. Auxiliary responsibilities included development of environmental science curricula and lesson plans and subsequent educational outreach and teaching in Seattle-area schools.

[Jan 2004-Sept 2007] **Barrows House International** **Berkeley, California**

Manager

Responsible for 25room grad/undergrad international student housing complex at UC Berkeley. Managerial responsibilities included: house finances and accounting, tenant selection, house and LAN network maintenance/repairs, mediator between building ownership, tenants, and the city of Berkeley.

PUBLICATIONS/POSTERS

Tracy H. Fung, **Gregory I. Ball**, Sarah C. McQuaide, Shih-hui Chao, Alejandro Colman-Lerner, Mark R. Holl, Deirdre R. Meldrum, (2004). Microprinting of on-chip cultures: patterning of yeast cell microarrays using concanavalin-A adhesion. ASME International Mechanical Engineering Congress, IMECE2004-60866.

Stéphanie M. Bernard, **Ian Ball**, Sam St. Clair, Sarah Placella, Rohit Salve, Eoin L. Brodie, Mary Firestone, Margaret S. Torn, David Ackerly and Gary L. Andersen. A molecular approach to understanding plant response to global climate change in a Californian grassland ecosystem (Poster)

AWARDS RECEIVED

- National Defense Science & Engineering Graduate (NDSEG) Fellowship (2008); 3yrs grad support
- Scripps Institution of Oceanography Director's Fellowship (2007); 1yr grad support
- Charles H. Ramsden Award for study in the Earth Sciences (2007); $3000
- UC Berkeley Phi Kappa Sigma Erdelatz Memorial Prize (2007); $500
- Cystic Fibrosis Foundation Trainee Research Fellowship Award – for independent research project at UC Berkeley Molecular & Cell Biology Lab, 2004; $1500
- Berkeley Undergraduate Research Apprenticeship Program Research (URAP) Award (2004); $2000
- Chevron "Reach" Scholarship Award for study at UC Berkeley (2003); $500