ELISA M. OVADIA

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EDUCATION

Ph.D. Candidate **August 2013-Present**
University of Delaware, Department of Chemical and Biomolecular Engineering, Newark, DE

Bachelor of Science in Chemical Engineering **June 2013**
University of California Santa Barbara, Department of Chemical Engineering, Santa Barbara, CA

RESEARCH

Graduate Research **January 2014-Present**
Research Advisor: Dr. April M. Kloxin
University of Delaware, Department of Chemical & Biomolecular Engineering, Newark, DE
Summary: *Extracellular and Intracellular engineering approaches for modeling cell processes*

- Developed a new approach for the incorporation and release of proteins from PEG hydrogels using click chemistry
- Designed and produced lentiviral-based reporting systems for *in situ* monitoring of cells
- Created three-dimensional hydrogel-based culture models for stem cell culture and neural differentiation

Undergraduate Research **Spring 2013**
Research Advisor: Dr. Michelle O'Malley
UCSB, Department of Chemical Engineering, Santa Barbara, CA
Summary: *Engineering S. Cerevisiae for monomer production*

- Genetic engineering of pYES vector
- Developed leading sequences for mitochondrial and cytosolic localization of gene expression
- Production of Methylacrylic Acid via engineered yeast

NSF REU – The Colorado Center for Biorefining and Biofuels (C2B2) **Summer 2012**
Research Advisor: Dr. Ryan Gill
University of Colorado Boulder, Department of Chemical & Biological Engineering, Boulder, CO
Summary: *Development of E. coli strains with Improved Genome Engineering Properties*

- Employed PCR, gel-electrophoresis, and recombineering to develop eight mutation *E. coli* strains consisting of permutations of modified proteins (DNA Polymerases I & II and *mutS)*
- Determined efficiency for recombineering using selective antibiotic plating
- Developed a highly efficient recombinant *E. coli* strain that can be applied for biofuel

Undergraduate Research **2010-2011**
Research Advisor: Dr. Eric McFarland
UCSB, Department of Chemical Engineering, Santa Barbara, CA
Summary: *Design of Anaerobic Digester to quantify biofuel production*

- Integral team member in developing an in-house designed Anaerobic Digester schematic
- Quantified biofuel production via gas chromatography and mass spectrometry
- Participated in gas sample utilization and upkeep of the digester

LABORATORY SKILLS

Hydrogel Synthesis, Peptide Synthesis, iPSC culture, lentiviral production, Mammalian Cell Culture, Flow Cytometry, qRT-PCR, Immunostaining, Confocal microscopy, HPLC, ^{1}H NMR, PCR, Gel-Electrophoresis, Microbial Cell Culture, DNA Purification Protein Expression, DNA Electroporation, Gas Chromatography, Mass Spectrometry