

Robin Jeffrey Green

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Objective

To secure admission to the Molecular and Cellular Biology Ph.D. program at the University of Washington

Education

Michigan State University, East Lansing, MI
Biochemistry and Molecular Biology/Biotechnology, B.S
Minor in Computer Science
GPA: 3.87/4.00 Major GPA: 3.93/4.00
Honors College Member

Graduation: May 2012

Relevant Coursework: Molecular Biology, Biochemistry I and II, Biochemistry Lab, Introductory Microbiology, Introductory Microbiology Lab, Microbial Biotechnology, Agricultural Biotechnology Lab, Introductory Quantitative Biochemical Techniques, Biology I and II, Biology Lab I and II, Organic Chemistry I and II, Organic Chemistry Lab I and II, Inorganic Chemistry I and II, Inorganic Chemistry Lab I and II, Quantitative Chemistry, Quantitative Chemistry Lab, Physical Chemistry I, Physics I and II, Physics Lab I, Statistics for Scientist, Introductory Programming in Python, Programming in C++, Discrete Mathematics, Algorithms and Data Structures, Computer Database Design With SQL, Webpage Design With PHP

Work Experience

Laboratory of Dr. Eric Hegg, Department of Biochemistry, MSU
Positions: Undergraduate Researcher, Summer Intern

August 2008-Present

- Exploration and characterization of algal hydrogen metabolism for potential application in alternative fuels
- Study of putative evolutionary relationships between hydrogen producing enzymes and iron-sulfur proteins
- Active research, development, and execution of new experimental protocols and bioassays meant to characterize *in vitro* and *in vivo* hydrogen production

Biochemistry Help Room, Department of Biochemistry, MSU
Positions: Tutor

August 2010-Present

- Assisting of junior and senior level natural science students in understanding relevant concepts and materials to courses
- Assisting in the completion of online course homework

Vaccines Basic Research Division, Merck Research Laboratories, Merck
Positions: Molecular Biology Summer Intern

June 2011-August 2011

- Design and development of qRT-PCR based assay for quantification of Alphavirus genetic material in emerging vaccine candidates and animal model studies
- Cloning and molecular biology support of several target sequences for vaccine candidates
- Exploration and characterization of Alphavirus genome using developed qRT-PCR assay and established molecular biology techniques
- Use of appropriate software in vector construction and assay design

Skills

- **Molecular Cloning Techniques**- Polymerase Chain Reaction (PCR), Quantitative PCR, RACE PCR Culture Preparation, Restriction Digest and Mapping, Genetic Differential Screening using Antibiotics, Transformation, Ligation, Site-Directed Mutagenesis, Nucleic acid (DNA and RNA) Isolation, *Agrobacterium* Transfection into Plant Tissue, Vector Design using Molecular Cloning Software
- **Aseptic Techniques**- Autoclaving, Flame Sterilization, Filter Sterilization
- **Analytical Techniques**- Gel Electrophoresis, Coomassie Staining, Western Blotting, Southern Blotting, Bradford Assay, Bicinchoninic Acid Assay, Growth Curve Assembly, Nickel Affinity Chromatography, Chlorophyll Content Determination by UV-Visible Spectroscopy
- **Laboratory Upkeep**- Glassware Maintenance, Material Inventory, Hazardous Waste Disposal
- **Programming Language Proficiency**-Python, C++,SQL,PHP

Presentations

- MSU Undergraduate Research and Arts Forum, 2011- *Investigation and Characterization of Hydrogen Metabolism for Potential Biotechnological Application*
- MSU Undergraduate Research and Arts Forum, 2010- *Investigation of Volvox carteri for Hydrogen Metabolism*
- Pennsylvania State University 29th Summer Symposium (Frontiers in Metallobiochemistry), 2010- *Substrate Transport and Availability for [FeFe]-hydrogenases: Investigation at the Enzymatic and Organism Levels*

Publications

- Cornish, A., Green, R., Hemple, S., Gaertner, K., Hegg, E. (2011). *Hydrogen Metabolism in the Multicellular Green Algae Volvox carteri*. Manuscript in preparation.
- Green, R. *Current Strategies for Optimizing Polyhydroxyalkanoate Production in Bacterial Systems*. MMG 445 Basic Biotechnology eJournal, 6.113 Dec. (2010): 1-6. Print.

Awards

- Great Lakes Bioenergy Research Experience for Undergraduates (REU) Summer Internship Award, 2009- 2010
- MSU Dean's List, Fall 2008- Spring 2011
- Dr. James Billman Undergraduate Research Award, 2010
- MSU Nominee - Barry M. Goldwater Scholarship, 2009
- William Clay Ford Jr. Scholarship, 2009
- MSU Professorial Assistantship, 2008-2010
- MSU Alumni Distinguished Scholarship Competition Commended Semi-Finalist Award, 2008
- MSU STATE Scholarship, 2008
- Michigan Promise Scholarship, 2008
- Eagle Scout Rank-Boy Scouts of America-Troop 416 Saline MI, 2008

Activities

- MSU Biochemistry and Molecular Biology Undergraduate Club President, 2011-Present
- MSU Undergraduate Research Office Ambassador, 2011-Present
- MSU Biochemistry and Molecular Biology Undergraduate Club Vice President, 2010-2011
- MSU Undergraduate Research Advisory Committee Representative, 2010-Present
- MSU Department of Biochemistry and Molecular Biology Curriculum Committee Representative, 2010-Present
- MSU Department of Biochemistry and Molecular Biology Judiciary Committee Member, 2010-Present
- MSU Habitat for Humanity Volunteer, 2010-Present

References

Eric Hegg, Ph.D.

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