

CHERYL HACKWORTH

cheryl_hackworth@westvalley.edu

RECENT WORK EXPERIENCE

RESEARCH FELLOWSHIP

June 2010 – August 2010

LIFE TECHNOLOGIES, INDUSTRY INITIATIVES FOR SCIENCE & MATH EDUCATION (IISME) FELLOW
Assayed efficiency of dye/quencher combinations and novel chemical modifications for use with multiplex RT-PCR to determine presence of food pathogens in food samples.

BIOTECHNOLOGY CONSULTANT

Sept 2006 – Present

GREEN TECH ACADEMY, MIGHTY ALGAE BIOFUELS

Specializing in algae biofuels, biofuel technology, and alternative energy.

BIOLOGY FACULTY

Aug 2006 – Present

WEST VALLEY COLLEGE

Microbiology, Introduction to Biology, Contemporary Biology, Cell Biology, Infectious Disease, Honors Genetics, Plant Biology, Animal Behavior

EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY

Aug 2000 – May 2006

PH.D., PLANT AND MICROBIAL BIOLOGY

NSF Graduate Research Fellow, Outstanding GSI Award

UNIVERSITY OF CALIFORNIA, LOS ANGELES

Aug 1996 – June 2000

B.S., MOLECULAR, CELL, AND DEVELOPMENTAL BIOLOGY

Cum laude, College Honors, Highest Departmental Honors

RESEARCH EXPERIENCE

LIFE TECHNOLOGIES

June 2010 – July 2010

INDUSTRY INITIATIVES FOR SCIENCE AND MATH EDUCATION (IISME) FELLOW

Assayed efficiency of novel probe chemistry for use with multiplex RT-PCR.

MIGHTY ALGAE BIOFUELS

Sept 2006 – May 2009

VICE PRESIDENT OF RESEARCH

First non-founding member; Filed two patents (both pending); Grant writer; Research director; Managed research personnel. Manipulation of physiological and biochemical characteristics of cell cultures, development of continuous flow cultures, monitoring a variety of characteristics of cell culture growth.

UNIVERSITY OF CALIFORNIA, BERKELEY

Aug 2000 – June 2006

PH.D. THESIS (PATRICIA ZAMBRYSKI LAB)

Identification of plant proteins responsible for *Agrobacterium*-mediated DNA transformation of plant cells and understanding protein export through the *Agrobacterium* Type IV secretion system.

UNIVERSITY OF CALIFORNIA, LOS ANGELES

Aug 1997 – June 2000

UNDERGRADUATE RESEARCH (ANN HIRSCH LAB)

The role of lectin in bacterial recognition and symbiosis initiation between *Medicago sativa* and *Rhizobium meliloti*.

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RESEARCH EXPERIENCE (CONTINUED)

ARIZONA STATE UNIVERSITY

June 1999 – August 1999

NSF RESEARCH EDUCATION FOR UNDERGRADUATES (ANDREW WEBBER LAB)

Rates of Photosystem I protein degradation in the *Chlamydomonas reinhardtii* PSI complex.

PATENTS

Hackworth C., Chalberg T. Heterotrophic Shift: Methods and Systems of Cultivating Photosynthetic Cells Under Autotrophic and Heterotrophic Growth Conditions. Patent Pending. Filed June 11, 2009.

Hackworth C., Chalberg T., Eckerle M., Fertik M. Photobioreactor Systems and Methods for Growing Organisms. Patent Pending. Filed August 13, 2009.

PUBLICATIONS

Hackworth C. Understanding Mechanisms of *Agrobacterium tumefaciens* Transformation: Genetic Screens, Protein Interactions, and Protein Localization Studies. Germany: VDM Publishing, 2009.

Zupan J, Hackworth CA, Aguilar J, Ward D, and Zambryski P. “VirB1* promotes T-pilus formation in the vir-type IV secretion system of *Agrobacterium tumefaciens*.” Journal of Bacteriology. Sept 2007. 189(18): 6551 – 6563.

Zupan J, Draper O, Hackworth C, Middleton R, and Zambryski P. “The *Agrobacterium* Type IV Secretion System.” Biology of Plant-Microbe Interactions. Edited by F. Sanchez, C. Quinto, I.M. Lopez-Lara, and O. Geiger. Published by the International Society of Molecular Plant-Microbe Interactions. St. Paul, Minnesota, USA. Volume 5, pages 12-20. 2006.

Hackworth CA. “The Mechanisms of Plant Transformation by *Agrobacterium*.” Doctorate Thesis. May 2006.

Zupan JR, Draper O, Hackworth C, Middleton R, Zambryski P. “The *Agrobacterium* Type IV Secretion System.” IS-MPMI International Meeting Notes. December 2005.

Hackworth CA. “Profile on Ignacio Chapela.” Berkeley Science Review. December 2005. Issue 9. 5(2): 51-53.

Hackworth CA. “Strange Fruit – California counties have a love-hate relationship with GMOs.” Berkeley Science Review. June 2005. Issue 8. 5(1): 19-25.

Brill LM, Fujishigi NA, Hackworth CA, Hirsch AM. “Expression of MsLEC1-Transgenes in Alfalfa Plants Causes Symbiotic Abnormalities.” Molecular Plant-Microbe Interactions. January 2004. 17(1): 16-26.

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TEACHING EXPERIENCE

Green Tech Academy, Speaker

Vocational Opportunities in Biofuels and Alternative Energy 2009 – Present

West Valley College, Lecturer

Animal Behavior 2010

Cell Biology 2009 – Present

Introduction to Infectious Disease 2008 – Present

Plant Biology 2008

Honors Genetics 2008

Contemporary Biology 2007 – Present

Microbiology 2006 – Present

Introduction to Biology 2006 – Present

West Valley College, Lab Instructor

Cell Biology 2009 – Present

Plant Biology 2008

Honors Genetics 2008

Microbiology 2006 – Present

Introduction to Biology 2006 – Present

West Valley College, Developer of Curricula

Biology Dept Journal Club, Founder / Developed Curriculum 2007 – Present

Introduction to Infectious Disease, Developed Curriculum 2007 – Present

Microbiology, Revised Curriculum 2007 – Present

Restoration Biology Program, Assisted Development of Curriculum 2007

Contemporary Biology, Revised Curriculum 2007 – Present

West Valley College, Online Instructor

Contemporary Biology 2007 – Present

Sonoma State University, Lecture and Lab Instructor

Molecular Genetics 2006

University of California, Berkeley

GSI Orientation Conference, Pedagogy Workshop Leader 2005, 2006

Introduction to Plant Biology, Lecturer 2005

Introduction to Plant Biotechnology, Website Developer 2005

Physiology and Plant Biochemistry, Graduate Student Reader 2004

Bioethics, Course Coordinator 2003

Introduction to Plant Biology, Graduate Student Instructor 2003

Landmark Papers in Microbiology, Course Coordinator 2002

Plants, Agriculture, and Society, Graduate Student Reader 2002, 2005

Graduate and Undergraduate Student Mentor 2001 – 2006

Evolution, Plant Biology, & Ecology, Graduate Student Instructor 2001

Biotechnology Outreach 2000 – 2006

Supreme Tutors

Biology Tutor 2004 – 2005

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TEACHING EXPERIENCE (CONTINUED)

Patten University at San Quentin, Lecturer

Biology 2004
Introduction to English 2004

Community Resources in Science

Biology Teacher Volunteer 2003 – 2004

ACADEMIC SERVICE

College SLO Taskforce, West Valley College 2009 – 2010
Ecological Restoration Co-Coordinator, Vasona Creek, West Valley College 2009 – Present
Academic Senator, West Valley College 2007 – Present
Biology Department Journal Club, West Valley College, Co-Coordinator 2007 – Present
Hiring Committee, Biology and Chemistry, West Valley College 2007, 2009
Secretary, Graduate Group in Microbiology, UC Berkeley 2004 – 2005
Faculty Meeting Representative, Plant and Microbial Biology, UC Berkeley 2003 – 2006
Graduate Student Meeting Chairman, Plant and Microbial Biology, UC Berkeley 2002 – 2003
Graduate Student Admissions, Plant and Microbial Biology, UC Berkeley 2002 – 2003
Departmental Delegate, Graduate Student Association, UC Berkeley 2001 – 2002
Outreach Volunteer, Plant and Microbial Biology, UC Berkeley 2000 – 2006

PROFESSIONAL MEETINGS

POSTER PRESENTATION. *The Role of Agrobacterium Type IV Secretion System in Protein Export.* International Society, Molecular Plant-Microbe Interactions. December 2005.

SPEAKER. *Cell-cell communication.* PMB Department Retreat. University of California, Berkeley. Nov 2004.

POSTER PRESENTATION. *Identification of Host Factors Involved in Agrobacterium-Mediated Transformation Using a Novel Yeast Screen.* American Society for Microbiology General Meeting. July 2004.

POSTER PRESENTATION. *A Novel Yeast Screen to Identify Host Factors Involved in Agrobacterium-Mediated Transformation.* UC Berkeley Microbiology Annual Symposium. Apr 2004.

SYMPOSIUM SPEAKER AND POSTER PRESENTATION. *Host Factors Involved in Agrobacterium-Mediated Transformation.* IS-MPMI International Conference. July 2003.

POSTER PRESENTATION. *Novel Yeast Screen Looking for Host Factors Involved in Agrobacterium-Mediated Transformation.* UC Berkeley Microbiology Annual Symposium. Apr 2003.

SYMPOSIUM SPEAKER. *Determining the Point of Degradation of a Mutant PSI Protein in Chlamydomonas reinhardtii.* NSF REU Summer Finishing Talks, ASU. Aug 1999.

POSTER PRESENTATION. *Localization of MsLEC2 in Antisense Lectin Plants.* West Coast Biosciences Undergraduate Research Conference. Long Beach, CA. May 1999.

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PROFESSIONAL MEETINGS (CONTINUED)

POSTER PRESENTATION. *Stable Transformation of Antisense Lectin Plants and Localization of MsLEC2 in Alfalfa.* UCLA Science Poster Day, UCLA. May 1998, May 1999.

SYMPOSIA AND INVITED LECTURES

Attendee, Bay Area Microbial Pathogenesis Meetings, UCSF	2004 – Present
Attendee, Microbial Student Group Symposium, UC Berkeley	2003 – Present
Plant and Microbial Biology Seminar, UC Berkeley, Seminar Speaker	2006
Biology Colloquium, Sonoma State University, Seminar Speaker	2006
GMO Conference, Riverside California, Student Representative	2003
Environmental and Economic Issues of Agriculture, UC Berkeley, Guest Lecturer	2003
Plants, Agriculture, and Society, UC Berkeley, Guest Lecturer	2002
Dominican University of California, Seminar Speaker	2002
Plant and Microbial Biology Graduate Student Meeting, Seminar Speaker	2002, 2004
Graduate Group in Microbiology, UC Berkeley, Seminar Speaker	2002, 2004
Introduction to Plant Biotechnology, UC Berkeley, Guest Lecturer	2002, 2003, 2005
Teaching Workshop, UC Berkeley, Guest Lecturer	2002, 2004

GRANTS AND FELLOWSHIPS

IISME Teacher Research Fellowship in partnership with Life Technologies	2010
UC Berkeley Graduate Division Travel Grant	2005
NSF Graduate Research Fellowship Travel Stipend	2003, 2004, 2005
University of California Discovery Grant	2003
Plant and Microbial Biology Department Travel Grant	2003, 2005
NSF Graduate Research Fellowship Award	2003 – 2005
NSF Research Education for Undergraduates	1999

HONORS AND AWARDS

Awarded Distance Learning Pedagogy Certificate	2009
Finalist (with Mighty Algae Biofuels), California Clean Tech Open	2007
Outstanding Graduate Student Instructor Award, UC Berkeley	2003
NSF Honorable Mention, Graduate Research Fellowship Program	2001
Young Botanists Award	2000
Deans List Nominee and Vice Provosts Recognition, UCLA Science Poster Day	1999, 2000

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VOLUNTEER EXPERIENCE

Habitat for Humanity	2010 – present
Home Owners Association Board Member	2009 – present
San Jose Family Shelter	2009 – present
Esperanza International (Building homes in Mexico)	2007, 2009
US Distribution Coordinator, BioForge Open-Source Biology Initiative, CAMBIA	2005 – 2006
Expert Reviewer, Book, “Community Guide to Environmental Health” (Hesperian Pub.)	2005
Sustainable Sciences Institute	2001

PROFESSIONAL AFFILIATIONS

American Women in Science	2007 – Present
American Society for Microbiology	2002 – 2006
International Society on Molecular Plant-Microbe Interactions	2001 – 2006
American Society of Plant Biologists	2001 – 2006

HOBBIES AND INTERESTS

Trail Running (5 – 13.1 miles)
Rock Climbing, Indoor and Outdoor
Hiking, Backpacking, Camping, Mountaineering
Skiing
Road Bicycling
Book clubs
My dog, Teddy