

# Diana Ginnebaugh

## PhD Candidate

Atmosphere/Energy Program

Department of Civil and Environmental Engineering

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### Education:

**University of California at Berkeley, GPA: 3.45 out of 4.0**

5/00 Bachelor of Science: Chemical Engineering

**Stanford University, GPA: 4.0 out of 4.0**

12/05 Master of Science: Civil and Environmental Engineering, Atmosphere/Energy Program

Current PhD Student: Civil and Environmental Engineering, Atmosphere/Energy Program

### Research Accomplishments:

12/08 Poster: Examining the Temperature Dependence of E85 Versus Gasoline Emissions on Air Pollution with a Near-Explicit Chemical Mechanism at the American Geophysical Union Annual Meeting in San Francisco, CA

12/07 Poster: Comparison of a 13,500 Reaction Near-Explicit Chemical Mechanism with Smog Chamber Data and its Implementation Into a Fast Solver to Study the Ambient Sensitivity of E85 versus Gasoline Emissions at the American Geophysical Union Annual Meeting in San Francisco, CA

10/07 Presentation: Environmental Impacts of Controlling Greenhouse Gas Emissions – Examination of Proposed Strategies for Addressing Global Warming and Air Pollution at the Annual Meeting of the West Coast Section of the Air and Waste Management Association on Integration of Future Energy Demand with the California Global Warming Solutions Act in Glendale, CA

12/06 Presentation: Testing the Speed of a 13,500-Reaction Chemical Mechanism with SMVGEAR II and the Accuracy of the Mechanism Against Smog-Chamber Data at the International Conference on Atmospheric Chemical Mechanisms at UC Davis, CA

7/06 Poster: Air Pollution Impacts of Ethanol (E85) at the 2<sup>nd</sup> International Conference on Global Warming and the Next Ice Age and Aerosol Uncertainties in Climate Predictions Conference in Santa Fe, NM

### Work Experience:

**Stanford University, Stanford, California**

9/08 Teaching Assistant for the Stanford Graduate Student Institute class “Energy for Sustainability: Technologies and Policies for Climate Stabilization and Energy Security”

- A week-long class for graduate students from all different majors
- Helped prepare class work
- Assisted with the lab session
- Organized catering for the week

3/07 Teaching Assistant for CEE 173L/273L: Advanced Energy End-Use Efficiency

- A week-long class during spring break
- Taught by Amory Lovins, head of the Rocky Mountain Institute (RMI)
- Assisted in developing and coordinating student activities during the week

- Conducted daily sessions with students to discuss material and brainstorm about energy “teasers”
- Graded daily thought notebooks by students

9/05-12/05 Teaching Assistant for CEE 063/263A: “Weather and Storms”

- Organized and led office hours and special sessions for tutoring
- Prepared and presented review sessions (5 per quarter)
- Taught lectures when professor was out-of-town
- Coordinated grading with graders and graded papers

3/05-6/05 Teaching Assistant for CEE 064/263D: “Air Pollution: From Urban Smog to Global Change”

- Organized and led office hours and special sessions for tutoring
- Prepared and presented review sessions (5 per quarter)
- Taught lectures when professor was out-of-town
- Coordinated grading with graders and graded papers

**Natural Resources Defense Council (NRDC), Washington, D.C.**

6/05-9/05 Mineral Acquisition Partners (MAP) Fellow for the Vehicles Campaign (Break-the-Chain)

- Organized a road tour for NRDC and Set America Free to speak with veterans groups, world council groups, environmental groups, and universities in key congressional districts to present to constituents information about the perils of our dependence on oil and a bill to address these concerns that is under consideration in the House and the Senate
- Contacted hundreds of NRDC’s e-advocates for their help – the first time they had been contacted personally for this kind of involvement
- Completed an assessment and wrote a report about plug-in hybrids as the beginning of a long-term report between NRDC, the Electric Power Research Institute (EPRI), and Joe Romm, the executive director for the Center for Energy and Climate Solutions
- Attended briefings and hearings to gather information about biofuels, oil security, and global warming
- Helped lobby on the 2005 energy bill by contacting congressional staff
- Participated in Oil Shockwave, a program sponsored by Securing America’s Future Energy that demonstrates the susceptibility of our oil distribution system to disruptions and the related consequences

**Stanford University, Stanford, California**

9/04-12/04 Teaching Assistant for CEE 063/263A: “Weather and Storms”/SSP

- Organized and led office hours and special sessions for tutoring
- Prepared and presented review sessions (5 per quarter)
- Lecture was broadcast to Singapore University through the Singapore Stanford Partnership in Environmental Engineering and Science
- Organized and led supplemental office hours and interactive review sessions that were broadcast live to Singapore
- Coordinated homework, papers, quizzes, and final submissions from Singapore students

**Dow Chemical Company, Freeport, Texas**

8/03-8/04 Energy Efficiency Focal Point:

- Conducted survey of all motors in the plant; developed a plan to improve their energy efficiency by replacement with more efficient or smaller motors, changing to variable speed motors, and by optimizing the usage of pumps
- Developed project ideas to improve energy efficiency through reduced waste in several proprietary areas

8/03-8/04 Certified Back Belt Six Sigma™ Methodology Project Leader:

- Completed and implemented a filter run-time improvement project (>\$1 million/year in savings, which saves natural resources by allowing salt to be recycled)

- Successful completion of a heat-exchanger improvement project (>\$750,000/year in savings, most by reduction in energy-intensive steam usage and improvement in process heat utilization)

8/00-8/03 Production Engineer for Membrane Chlorine Plant (new technology):

- Responsibilities:
  - Provide advice as the subject matter expert on process technology
  - Apply skills in process engineering and process control to maximize asset utilization while reducing raw material usage and meeting business production goals
  - Optimize safeguards to eliminate environmental spills
  - Compile data for environmental reporting
  - Troubleshoot and implement solutions to short-term and long-term issues
  - Work with project managers to successfully integrate new projects in the plant
  - Contribute to startup and shutdown activities – planning and execution
  - Collect and analyze data for ongoing production-scale research
  - Assist in training of operations personnel
- Accomplishments:
  - Participated on several Six Sigma™ projects for cost savings >\$500,000/year and defect reductions which reduced excess usage of raw materials
  - Reduced unscheduled shutdowns by 26 % over three years through process improvements (which also reduced chlorine releases to the atmosphere)
  - Sponsored the plant Hiring Team, successfully leading the hiring for 4 staff positions
  - Sponsored the plant Recognition Team to increase recognition of extraordinary work
  - Worked with operators towards Dow initiative called “Empowerment” – increasing the responsibilities and contributions of the operators

6/99-8/99 **Exxon Company, U.S.A., Baton Rouge Refinery, Louisiana**  
Summer Intern in Coordination and Product Quality Department

- Determined increased crude viscosity limits for crude system to help increase revenue by allowing additional usage of tanks and built a computer modeling system of crude pipelines
- Designed and estimated wax tank circulation system to reduce wax waste
- Compiled sample data for FTIR Diesel Cetane Analyzer to help improve diesel blending capabilities

6/98-8/98 **Exxon Company, U.S.A., Port Allen Lubricants Plant, Louisiana**  
Summer Intern:

- Developed system for SARA environmental reporting to reduce errors and improve the ease of reporting
- Studied plant tank usage for plant optimization and proposed several improvements to optimize loading and unloading

**Volunteer Work:**

8/08,2/09 Save the Bay

- Planted native plants and removed non-native plants to restore the natural wetlands to the San Francisco Bay

4/08 GRID Alternatives

- Installed energy efficiency measures in low income housing in San Jose to reduce energy costs for residents

12/06 Workshop on the Environmental, Resource, and Trade Implications of Biofuels presented by the Woods Institute for the Environment at Stanford University, CA

- Documented and summarized the results of two sessions of industry leaders, stakeholders, researchers, and environmental leaders in a report for the organizers and attendees

8/06-11/06 Defenders of Wildlife Action Fund – Defeat Representative Richard Pombo Campaign (CA District 11)

- Canvassed key areas in the district
- Provided voters with information about the upcoming election
- Completed a survey of voter preferences

2/05 Whole Earth Systems: Integrating Environmental Science, Technology and Policy symposium at Stanford University, CA

- Facilitated registration and the question and answer session

1/01-8/04 Gulf Coast Wildlife Rescue, Lake Jackson, Texas

- Ran educational booths at fairs/public parks with non-releasable animals such as owls and opossums
- Attended and organized training courses for volunteers and the public
- Transported injured and orphaned wildlife from the public to licensed rehabilitators
- Assisted with releasing rehabilitated wildlife back into the wild