

Gregory Bruce Austic

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EXPERIENCE

Michigan State University Dept. of Plant Sciences – East Lansing, Michigan.

Technician Nov 2012 – current, full time

- Developing low cost, open source equipment for crowd-source accumulation of plant photosynthesis data and improving photosynthesis education. Equipment and methods are based on equipment developed in Professor David Kramer's lab.

Piedmont Biofuels LLC – Pittsboro, North Carolina. www.biofuels.coop

Research Coordinator June 2008 – August 2011, Full time; August 2011 – current, Part time

- Co-founded the Research and Analytics department at Piedmont Biofuels. Have been instrumental in developing Piedmont Biofuels' internal governance structure, which is non-hierarchical. Was responsible for financial analysis and budgeting for our department.
- Developed a patent-pending process for enzymatic esterification of biodiesel.
- Currently acting PI on an SBIR Phase II grant from the DOE to commercialize the use of enzymes for biodiesel production (Phase II started in Sept. 2010).
- Co-PI on a grant to develop a near-supercritical amphoteric catalyst for biodiesel production, and PI on a project to create a pilot plant using enzymatic catalysts for biodiesel production.
- Co-developed cavitation technology which is included in most new design/build plants built at Piedmont.
- Successfully co-wrote the following successful applications relating to biodiesel catalyst development: \$196k Phase I, \$1m Phase II DOE SBIR and \$180k NC Biofuels Center. Have also written many more proposals which were not accepted.

Production Assistant May 2007 – September 2007, Full time

- Produced biodiesel weekly on a 2000 gallon reactor, collected and tested oil feedstocks and finished biodiesel.

Piedmont Biofuels Cooperative – Biodiesel production, Moncure, North Carolina

Oil Collections Manager September 2007 – June 2008 – full time

- Started and built the oil collections business. Designed marketing material, did door to door sales, applied for received a loan for \$50k dollars to purchase equipment.
- Built the business from 800 gallons collected per month up to 4200 gallons collected, upgraded equipment and laid the foundation for the existing business which currently collects 8000 gallons per month.

Intern January 2007 – April 2007 – full-time

- Produced biodiesel weekly on a 165 gallon reactor, collected and tested oil feedstocks and finished biodiesel.
- Engaged in outreach and teaching activities with farmers, home producers, and other parties interested in producing biodiesel.
- Designing and building methanol recovery system for the cooperative's reactor, as well as an artificial wetlands for waste water treatment.

Peace Corps Moldova – Agriculture and Agribusiness Program, Balauresti, Moldova

Volunteer September 2004 – October 2006, full-time

- Worked independently as a local agricultural consultant in Balauresti, Nisporeni (population 2500).
- Promoted the use of drip irrigation for row vegetables, resulting in six farmers implementing the system on 14 acres of land, with a likely increase in use in the 2007 season.
- Collaborated with the local irrigation users' association by revamping their payment system and administration, resulting in drastic increases in coverage and a good foundation for future expansion.
- Promoted and organized the development of a marketing cooperative for vegetables, resulting in its creation in the summer of 2006.
- Was chosen to a grant selection committee for Peace Corps SPA grants and served for a year and a half.

Coconino Rural Environment Corps (CREC) – an Americorps Program, Flagstaff, AZ

Corps Member February 2004 – July 2004, full-time

- Engaged in many projects including: thinning to reduce wild fire danger, improving antelope habitat, building trail and doing rock work, and ameliorating the effects of bark beetle infestation.
- Was selected as 2 of 30 corps members to participate in Leader Corps.

Cornell University Dept. of Sociology, Ithaca, NY

Research Assistant Fall 2000 – Fall 2002, 30 – 40 hrs per week summers, 6 – 8 during school

- Used STATA to perform statistical analysis on educational data sets, which resulted in two working papers, to be published in *Sociology of Education* and *Sociological Methodology*.
- Worked with SAS and SPSS to compare labor market data from two different education/labor market datasets.
- Created and maintained a professor's web page to make his publications available to students and the academic community.

DEGREE

Cornell University, College of Arts and Sciences, Ithaca, NY

Bachelor of Arts, double major in Economics and Sociology, May 2003

Overall GPA: 3.6; Economics GPA: 3.54; Sociology GPA: 3.82; Dean's List

PRESENTATIONS

- **Austic, G** (2009). Biodiesel Testing and Quality; Advanced Biodiesel Processing. Solar Energy International Biodiesel Workshop, Pittsboro NC.
- **Austic, G** (2009). High tech future of biodiesel production. Collective Biodiesel Conference, Washington DC.
- **Austic, G** and M Rudolf (2008). One day training and small scale biodiesel plant build. CEFS - Center for Environmental Farming Systems of North Carolina, Goldsboro, NC.
- **Austic, G** (2008). A discussion of recent technological advances implemented at Piedmont Biofuels: Small scale cavitation, continuous glycerol separation, Purolite/Amberlite column design, and quality control. Collective Biodiesel Conference, Golden, CO.
- **Austic, G** and M Rudolf (2008). One day training and cleantech workshop. Carolina Farm Stewardship Association, Columbia, SC.

PUBLICATIONS

- **Austic, G** and Fox, F (2009) Small scale degumming techniques for oil entering the biodiesel market. White paper.*
- **Austic, G** (2008). Using high voltage current for continuous glycerin separation from biodiesel. Poster, Sustainable Biodiesel Summit, Orlando FL. (published on-line)
- **Austic, G** and Lobdell, S (2009). Treatment, disposal, and reuse of biodiesel derived waste products. White paper.*
- **Austic, G**, X Fan, R Burton, and F Fox (2009). Small scale degumming techniques for oil entering the biodiesel market. White paper.*
- Fan X, R Burton, **G Austic** (2009). Preparation and characterization of biodiesel produced from recycled canola oil. *The Open Fuels and Energy Sciences Journal*, 2009, 2, 110-115.
- Rachel Burton, Xiaohu Fan, and **Greg Austic** (2010). Evaluation of Two-Step Reaction and Enzyme Catalysis Approaches for Biodiesel Production from Spent Coffee Grounds.. *International Journal of Green Energy*, 2010, 7, 530 – 536.
- Xiaohu Fan, Rachel Burton, and **Greg Austic** (2010). Preparation and Characterization of biodiesel produced from fish oil. *Chemistry and Technology of Fuels and Oils*, 2010, 46, 287 – 293.
- Xiaohu Fan, Rachel Burton and **Greg Austic** (2010). Conversion of Degummed Soybean Oil to Biodiesel: Optimization of Degumming Methods and Evaluation of Fuel Properties. *International Journal of Green Energy*, 2010, 7, 593 – 599.
- Kevin Gombotz, Robert Parette, **Greg Austic**, Dheeban Kannan, Jack V. Matson (2012). MnO and TiO solid catalysts with low-grade feedstocks for biodiesel production. *Fuel*, Feb 2012, 92, 9 – 15.

*white papers are published online at <http://www.biofuels.coop/research/published-research> .

PATENTS

- **Austic G**, X Fan, and R Burton (2011) Esterification process of carboxylic acids using continuous moisture removal (*international patent pending*)

TRAINING AND SKILLS

- Experienced with Arduino builds and programming, Python, Eagle and KiCad (circuit board design), some SolidWorks
- Expert in 2D vector design and use of 2D and 3D CNC tools (laser cutter, 3D printer, PCB engraver, etc.) and have access to those tools through Maker Works in Ann Arbor.
- Language, cultural, and agricultural training totaling over 250 hours.
- Member of Leader Corps, through which I received approximately 20 hours of leadership training.
- Self-trained in Excel, installing/building computers. Have extensive experience in STATA, also in SPSS, SAS and SAS JMP. Have over 250 hours on the chainsaw.

OTHER INTERESTS

- Treasurer, A2Geeks (Ann Arbor non-profit); active member of the Appropriate Technology Collaborative (Ann Arbor non-profit)
- Active in the open science and open technology “Maker” movement, member of All Hands Active and Maker Works.
- Designed, tested, and prototyped 4 board games in collaboration with Random Games and Toys and Sparkfun, currently seeking publishers
- Currently writing a book about game design for kids at 8 – 12 to be published by Cherry Lake Publishing

FOREIGN LANGUAGES

- Romanian – fluent. Received highest score (besides native speaker) on the Romanian language exam in Peace Corps Moldova.
- Russian – intermediate. 2 years of intense college Russian (6 credit hours a semester).

REFERENCES

- Dr. Michael Haas – Colleague. Currently Research Scientist at USDA Eastern Regional Research Center. Tel: 215 233 6459 ext. 6459, email: michael.haas@ars.usda.gov
- Rachel Burton – Colleague and co-founder of Piedmont Biofuels. Currently Research Manager at Piedmont Biofuels. Tel: 919 444 3495, email: rachel@biofuels.coop
- Matt Rudolf – Colleague at Piedmont Biofuels, roommate. Currently Americas Coordinator for the Roundtable on Sustainable Biofuels. Tel: 919 810 2295, email: matthew.rudolf@epfl.ch
- Alan McWaters – Officemate at Maker Works (shared shop space). Proprietor of SkyShips Designs, woodworker and furniture maker. Tel: 734 678 4340, email: alanmcw@gmail.com
- More references available on request.