ELLINOR D. CARLSON

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EDUCATION

University of Delaware — **Newark, DE**
Ph.D. candidate in Chemical and Biomolecular Engineering
Thesis Advisor: Terry E. Papoutsakis — Spring 2017 (expected)
Thesis: "*Enhancing Microbial Product Yields Through Mixotrophic Fermentation"*

Rheinisch-Westfälische Technische Hochschule Aachen — **Aachen, Germany**
M. Sc. in Molecular and Applied Biotechnology with a Concentration in Chemical Engineering — 2010-2012

University of Massachusetts, Amherst — **Amherst, MA**
B. Sc. in Chemical Engineering with a Biochemistry Concentration — 2006-2010

WORK EXPERIENCE

Dec 2012-current — **Graduate Researcher, University of Delaware**
Advisor: Dr. E. T. Papoutsakis
- Improving microbial fuel production from waste gases using a synthetic CO_2 fixation pathway
- Molecular Cloning and Engineering for synthetic pathway design (employing genomic integrations and plasmid based expression systems)
- Designing new anaerobic enzyme activity assays
- Developing new mixotrophic fermentation utilizing both carbohydrate and gaseous feedstocks simultaneously
- Studying biofuel fermentation of anaerobic clostridia species on sugars and gases

Jan 2012-June 2012 — **Graduate Researcher, University of Delaware**
Advisor: Dr. W. Chen, University of Delaware, Co Advisor: Dr. L. Blank, RWTH Aachen
Master Thesis: "*Designing nano-enzyme scaffolds for the assembly of mini cellulosomes on the yeast cell surface*"
- Molecular Cloning and Engineering for protein assemblies in *E. coli* and Yeast
- Synthetic Cellulosome assembly for consolidated bioprocessing

Nov 2010-Nov 2011 — **Researcher at CAT Catalytic Center, ITMC, *RWTH Aachen*, Germany**
- Investigated phosgene free synthesis of isocyanates
- Studied the kinetics and equilibrium of isocyanate reaction pathways
- Used results to understand the Bayer Material Science fire-resistant isocyanate foams process

May 2010- Sept 2010 — **Summer Intern at *ExxonMobil Corporation*, Clinton, NJ**
ExxonMobil Process Research – Lubricants and Specialties
- Studied catalytic de-waxing and directed high-throughput catalyst screening
- Improved aromatic saturation of hydrocrackate by optimizing catalyst properties such as zeolite to binder ratio, platinum loading and Si/Al ratio

Jan 2008- May 2010 — **Research Assistant at *University of Massachusetts, Amherst*, MA**
Advisor: Prof. George Huber
- Conducted independent research using algae as an alternative biomass feedstock for the production of fuels and chemicals
- Studied the thermo-chemical decomposition of algae and characterized the decomposition products (thermodynamics of algae pyrolysis)