NIKODIMOS A. GEBRESELASSIE

Ph.D. Candidate

150 Academy Street, Newark, DE 19716
Tel: (302) 831-6344 Email: gniko@udel.edu

EDUCATION

University of Delaware Aug 2012 – Present
Chemical Engineering, Ph.D. Candidate (expected graduation summer/fall 2017)

University of Maryland Baltimore County (UMBC) Aug 2008 – May 2012
Chemical Engineering, B.S. *(Magna Cum Laude)*
Biological Sciences, Minor certificate

RESEARCH EXPERIENCE

Doctoral Research May 2013 – Present
Thesis Topic: **Elucidating metabolism in microbial co-cultures through ^{13}C-metabolic flux analysis**
Thesis Advisor: Maciek R. Antoniewicz, Ph.D

- Developed and applied a novel methodology for co-culture ^{13}C-metabolic flux analysis
- Constructed and validated a compartmentalized network model for *S. cerevisiae*
- Quantitatively analyzed dynamic metabolism of *E. coli* during diauxic growth shift

CBI Rotation program at the University of Delaware Jan 2013 – May 2013

- Dr. Fidelma Boyd's lab, Biological Sciences: Learned and applied molecular biology tools to knockout thermoresistant gluconokinase in *V. cholerae*
- Dr. Eleftherios Papoutsakis's lab, Chemical Engineering: Learned and applied molecular biology techniques to insert *groESL* gene into *E. coli* chromosome
- Dr. Maciek Antoniewicz's lab, Chemical Engineering: Analyzed the growth profile and metabolism of engineered *Thermus thermophilus* in various medium

Undergraduate Research Experience

- Dr. Ross' lab at **UMBC**, Chemical Engineering Oct 2010 – Jan 2012
  - Analyzed the effects of shear stress on bacterial adhesion to surfaces
- Dr. Lauffenburger's lab at **MIT**, Biological Engineering Jun 2011 – Aug 2011
  - Synthesized reagent for quantitative multiplexed immunoassay studies
- Dr. Yang's lab at **University of Pittsburgh**, Chemical Engineering Jun 2010 – Aug 2010
  - Analyzed the effect of oxygen on the synthesis of carbon nanotubes

PUBLICATIONS

Gebreselassie NA, Antoniewicz MR. (2017) Complete growth characterization of *E. coli Δpgi – Δzwf* co-culture system through co-culture ^{13}C-metabolic flux analysis. *(In preparation)*

Gebreselassie NA, Lazor V, Antoniewicz MR. (2017) COMPLETE ^{13}C-MFA of *Saccharomyces cerevisiae*. *(In preparation)*

Long CP, Au J, Sandoval NR, **Gebreselassie NA**, Antoniewicz MR. (2016) Enzyme I facilitates reverse flux from pyruvate to phosphoenolpyruvate in *Escherichia coli. Nature Communication*. *(Accepted)*

Gebreselassie NA, Antoniewicz MR. (2015) ^{13}C-Metabolic flux analysis: A novel approach. *Metabolic Engineering.* 31: 132-139

He L*, Xiao Y*, **Gebreselassie N***, Zhang F, Antoniewicz MR, Tang YJ, Peng L. (2014) Central metabolic responses to the overproduction of fatty acids in *Escherichia coli* based on ^{13}C-metabolic flux analysis. *Biotechnology Bioengineering*. 111(3): 575-585 **[*Co-first authors]**