

DAVID R HAGEN

AREA OF INTEREST: Computational systems biology

CAMPUS ADDRESS:

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OBJECTIVE: To create the statistical tools necessary to infer the mechanistic structure and behavior of biomolecular systems, quantifying the uncertainty in the resulting models, and designing experiments to efficiently minimize the remaining uncertainty.

EDUCATION: Doctor of Philosophy in Biological Engineering (in progress)
Massachusetts Institute of Technology, Cambridge, Massachusetts

Bachelor of Science in Biochemistry (2008)
Bachelor of Arts in Economics (2008)
Minor in Chemistry (2008)
Case Western Reserve University, Cleveland, Ohio

PUBLICATIONS:

P Hakimi, J Yang, G Casadesus, D Massillon, F Tolentino-Silva, CK Nye, ME Cabrera, **DR Hagen**, CB Utter, Y Baghdy, DH Johnson, DL Wilson, JP Kirwan, SC Kalhan, and RW Hanson, “Overexpression of the Cytosolic Form of Phosphoenolpyruvate Carboxykinase (GTP) in Skeletal Muscle Repatterns Energy Metabolism in the Mouse” (2007) *J. Biol. Chem.* 282, 32844-32855.

POSTERS:

DR Hagen, JF Apgar, DK Witmer, and B Tidor, “Optimal Experimental Design to Maximize Knowledge of Biological Systems” (March 2010).

DR Hagen, and Bruce Tidor, “Efficiently Minimizing Parameter Uncertainty in Biological Systems” (September 2010).

DR Hagen, JK White, and B Tidor, “Maximizing Knowledge of Biological Systems through Optimal Experimental Design” (October 2010).

SELECTED SKILLS:

Biochemistry: With my knowledge of the underlying biochemistry in living systems, I can construct and compare models that reflect the underlying mechanism of the systems

Statistics: I have applied to biology statistics I learned from economics that are necessary to quantify the uncertainty in models of large, complex systems

Matlab: I am highly proficient with the use of this programming environment to model systems through ordinary differential equations and fit parameters to data