

Curriculum Vitae

Date: February 15, 2009

Name: Gary M. Baker

Department: Chemistry and Biochemistry

Rank: Associate Professor

Date of Birth: 10/08/1954

Education:

Ph.D. 1982, Purdue University, West Lafayette, IN

B.S. 1976, Niagara University, Niagara Falls, NY

Professional Experience:

Associate Professor, Biochemistry, Northern Illinois University, 1994-present.

Assistant Professor, Biochemistry, Northern Illinois University, 1988-1994.

Research Associate, Biophysics, Department of Public Health, Albany, NY, 1986-1988.

Research Associate, Biochemistry, Rice University, Houston, TX, 1982-1986.

Graduate Student. Biochemistry, Purdue University, West Lafayette, IN, 1978-1982.

Chemist, Eastman Kodak Company, Rochester, NY, 1976-1978.

Membership in Professional Societies:

Biophysical Society, National

Center for Biochemical and Biophysical Studies (CBBS), Northern Illinois University

Plant Molecular biochemistry Center, Northern Illinois University

Awards, Honors, and Fellowships:

External:

- American Heart Association, Illinois Affiliate, \$47,124, 7/1/96-6/30/98
- American Heart Association, Illinois Affiliate, \$38,000, 7/1/93-6/30/96
- American Heart Association, Illinois Affiliate, \$40,000, 7/1/91-6-30-93
- American Heart Association, Illinois Affiliate, \$40,000, 7/1/89-6-3-91.

Internal:

- Graduate School research and Artistry Award, 1 month summer salary, 1992
- Graduate School research and Artistry Award, 1 month summer salary, 1989
- CBBS Award, \$2,684, 10/1/88.
David W. Raymond Grant for use of Technology in Teaching, "The C-TIES Web Project: A New Initiative to Integrate Technology into the Chemistry Teacher Certification Program", 2001-2002.
- CENTER Project Mini-grants for integrating technology into the introductory Clinicals Program for Teacher Preparation in the College of Liberal Arts & Sciences, 2004-2005.
- Integration of SharePoint Technology into the campus network infrastructure, approximately \$30,000.

Publications:

1. Baker, G.M., Bhatnagar, D., and Dilley, R.A. "Proton release in photosynthetic water oxidation: Evidence for proton movement in a restricted domain", *Biochemistry* **1981**, 20, 2307-2315.
2. Dilley, R.A., Baker, G.M., Bhatnagar, D., Millner, P.A., and Laszlo, J.A. "Chloroplast protein-proton interactions in energy coupling in photosynthesis", in Annual Review of Plant Physiology; Selman and Selman-Reimer, Eds. Elsevier/North Holland, p. 41, **1981**.
3. Baker, G.M., Bhatnagar, D., and Dilley, R.A. "Site-specific interactions of ATPase-pumped protons with Photosystem II in chloroplast thylakoid membranes", *J. Bioenerg. Biomembr.* **1982**, 14, 249-264. |
4. Dilley, R.A., Prochaska, L.J., Baker, G.M., Tandy, N., and Millner, P.A. "Proton-membrane interactions in chloroplast bioenergetics", *Curr. Top. Membranes Transp.* **1982**, 16, 345-369.
5. Laszlo, J.A., Baker, G.M., and Dilley, R.A. "Nonequilibration of membrane-associated protons with the internal aqueous space in dark-maintained chloroplast thylakoids", *J. Bioenerg. Biomembr.* **1984**, 16, 37-51.
6. Laszlo, J.A., Baker, G.M., and Dilley, R.A. "Chloroplast thylakoid membrane proteins have buried amine buffering groups", *Biochim. Biophys. Acta* **1984**, 764, 160-169.
7. Baker, G.M., Noguchi, M., and Palmer, G. "The reaction of cytochrome oxidase with cyanide: Preparation of the rapidly reacting form and its conversion to the slowly reacting form", *J. Biol. Chem.* **1987**, 262, 595-604.
8. Baker, G.M. and Palmer, G. "Effect of high pH on the spectral and catalytic properties of beef heart cytochrome oxidase", *Biochemistry* **1987**, 26, 3038-3044.
9. Schoonover, J.R., Dyer, R.B., Woodruff, W., Baker, G.M., and Palmer, G. "Resonance Raman studies of cytochrome oxidase: Structure, dynamics, and isotope effects", *Biochemistry* **1988**, 27, 5433-5440.
10. Palmer, G., Baker, G.M., and Noguchi, M. "Slow and fast forms of cytochrome c oxidase", *Chemica Scripta* **1988**, 28A, 41-46.
11. Baker, G.M. and Chen, C-H. "The effects of ethanol on the structural stability of acetylcholine receptor and the activity of various forms of acetylcholinesterase", *Biochim. Biophys. Acta* **1989**, 992, 333-340.
12. Walter, S., Papadopoulos, P., and Baker, G.M. "Proton interactions in the resting form of cytochrome oxidase", *Biochemistry* **1991**, 30, 840-850.
13. Weng, L. and Baker, G.M. "Reaction of hydrogen peroxide with the resting form of cytochrome oxidase", *Biochemistry* **1991**, 30, 5727-5733.

14. Baker, G.M. and Weng, L. "Apparent first order behavior under second order kinetic conditions: A general concept illustrated by reversible binding of hydrogen peroxide to cytochrome c oxidase", *J. Theor. Biol.* **1992**, 158, 221-229.
15. Walter, S.A., Papadopoulos, P.G., and Baker, G.M. "Formation of high spin cytochrome a in isolated cytochrome c oxidase", *J. Biol. Chem.* **1993**, 268, 4716-4719.
16. Gullo, S.M., Tayh, J.A., Li, J., and Baker, G.M. "Evaluation of ligand exchange as a model of heterogeneity within the binuclear core of cytochrome c oxidase", *Arch. Biochem Biophys.* **1993**, 307, 78-84.
17. Baker, G.M. and Gullo, S.M. "Kinetic and structural model for the binding of formate to the rapid form of cytochrome c oxidase" *Biochemistry* **1994**, 33, 8058-8066.
18. Marcus, L., Plumeri, J., Baker, G.M., and Miller, J.S. "A teacher-developed inquiry model to teach the molecular basis of hyperbolic kinetics in biological membrane transport", *Advan. In Physiol. Edu.*, **2013**, 37, 165-175.