Jonathan E. Visick

Professor (2000 to present) and Chair
Dept. of Biology • North Central College • P. O. Box 3063 • Naperville, IL 60566
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Research experience and education:

Postdoctoral research, Dept. of Chemistry & Biochemistry, UCLA (1994-98)

Advisor: *Dr. Steven Clarke*
Research: *Effects of the L-isoaspartyl protein repair methyltransferase (PCM) on survival of stress and starvation by aging E. coli*

PhD (1991) and M.S. (1987) in Microbiology, University of Washington

Advisors: *Dr. Helen R. Whiteley (deceased), Dr. James J. Champoux*
Dissertation: *Role of a 20-kDa protein in the synthesis and stability of CytA, a mosquitocidal toxin of Bacillus thuringiensis subsp. israelensis*

B.S. in Microbiology (chemistry minor), Brigham Young University (1984)

Undergraduate research: *Changes in bacterial isolates over a 40-year period*

Previous faculty positions:

HHMI Distinguished Visiting Scholar in Bioinformatics, Dept. of Biology, Lewis & Clark College (2010)

Visiting Assistant Professor, Dept. of Biology, St. Xavier University (1999-2000)

Visiting Assistant Professor, Dept. of Biology, North Central College (1998-99)

Visiting Assistant Professor, Dept. of Biology, Whitman College (1992-93)

Visiting Assistant Professor, Dept. of Biology, University of Puget Sound (1991-92)

Research Publications:

VandenBerg, K. E.*, S. Ahn*, and J. E. Visick. 2016. (p)ppGpp-dependent persisters increase fitness of *Escherichia coli* deficient in isoaspartyl protein repair. Appl. Environ. Microbiol. **82**:5444-5454.

Hicks, W. M.*, M. J. Kotlajich*, and J. E. Visick. 2005. Recovery from long-term stationary phase and stress survival in *Escherichia coli* require the L-isoaspartyl protein carboxyl methyltransferase at alkaline pH. Microbiol. **151**:2151-2158.

Visick, J. E., J. K. Ichikawa, and S. Clarke. 1998. Mutations in the *Escherichia coli surE* gene increase isoaspartyl accumulation in a strain lacking the *pcm* repair methyltransferase but suppress stress-survival phenotypes. FEMS Microbiol. Letters **167**:19-25.

Visick, J. E., H. Cai, and S. Clarke. 1998. The L-isoaspartyl protein repair methyltransferase enhances survival of aging *Escherichia coli* subjected to secondary environmental stresses. J. Bacteriol. **180**:2623-2629.

Visick, J. E., and S. Clarke. 1997. RpoS- and OxyR-independent induction of HPI catalase at stationary phase in *Escherichia coli* and identification of *rpoS* mutations in common laboratory strains. J. Bacteriol. **179**:4158-4163.

Visick, J. E., and S. Clarke. 1995. Repair, refold, recycle: how bacteria can deal with spontaneous and environmental damage to proteins. Mol. Microbiol. **16**:835-845.

Visick, J. E., and H. R. Whiteley. 1991. Effect of a 20-kilodalton protein from *Bacillus thuringiensis* subsp. *israelensis* on production of CytA by *Escherichia coli*. J. Bacteriol. **173**:1748-1756.

Adams, L. F., J. E. Visick, and H. R. Whiteley. 1989. A 20-kilodalton protein is required for efficient production of the *Bacillus thuringiensis* subsp. *israelensis* 27-kilodalton crystal protein in *Escherichia coli*. J. Bacteriol. **171**:521-530.

* indicates undergraduate student collaborators

Student Research Publications:

Carstens, C. K.* 2015. Filamentation in protein repair-deficient *Escherichia coli*. Proc. Natl. Conf. Undergrad. Res. 2015, pp. 20-27.

Research Presentations:

VandenBerg, K. E., and J. E. Visick. 2014. High persister frequency increases competitive fitness in protein repair-deficient *Escherichia coli* during long-term stationary phase. Poster presentation at the 114th General Meeting of the American Society for Microbiology, Boston, MA.

Ahn, J., and J. E. Visick. 2012. *Escherichia coli* deficient in an isoaspartyl protein repair enzyme increase the persister fraction by a *phoU*-dependent pathway. Poster presentation at the 112th General Meeting of the American Society for Microbiology, San Francisco, CA.

Harrington, S.*, and J. E. Visick. 2010. Labile protein aggregates in protein repair-deficient *E. coli* during recovery from stationary phase. Poster presentation at the 110th General Meeting of the American Society for Microbiology, San Diego, CA.

Connolly, C.*, and J. E. Visick. 2008. *Escherichia coli* deficient in isoaspartyl protein repair has elevated levels of unfolded protein. Poster presentation at the 108th General Meeting of the American Society for Microbiology, Boston, MA.

Vujnic, S.*, and J. E. Visick. 2004. Inability to repair isoaspartyl damage increases susceptibility of *E. coli* proteins to unfolding under oxidative stress. Poster presentation at the 104th annual General Meeting of the American Society for Microbiology, New Orleans, LA.

Hicks, W.*, and J. E. Visick. 2002. High pH stress affects cell density and long-term survival of *E. coli* lacking the PCM protein-repair methyltransferase. Poster presentation at the 102nd General Meeting of the American Society for Microbiology, Salt Lake City, UT.

Visick, J. E., and S. Clarke. 1998. Protein repair in aging *Escherichia coli*. Poster presentation at the 98th General Meeting of the American Society for Microbiology, Atlanta, GA.

Visick, J. E., and S. Clarke. 1997. Effects of mutations in *pcm*, encoding the *Escherichia coli* protein-repair methyltransferase. Poster presentation at the 97th General Meeting of the American Society for Microbiology, Miami, FL.

Visick, J. E., and S. Clarke. 1997. Effects of a protein-repair methyltransferase on levels of RpoS and catalases in stationary-phase *E. coli*. Invited address and poster presentation at the 1997 Gordon Conference on Microbial Stress Responses, Holderness, NH.

Pedagogical Publications and Presentations:

St. Clair, C., and J. E. Visick. 2015. *Exploring Bioinformatics: A Project-Based Approach* (second edition). Jones and Bartlett, Sudbury. (Textbook for undergraduate bioinformatics)

Visick, J. E., S. D. Johnston, A. Driks, and N. L. Peterson. 2010. Broader impacts: collaborative research in a capstone course. Poster presentation at the Council on Undergraduate Research national conference, Ogden, UT.

St. Clair, C., and J. E. Visick. 2010. *Exploring Bioinformatics: A Project-Based Approach*. Jones and Bartlett, Sudbury.

Visick, J. E. 2006. Compensation for summer research with undergraduates: issues and options. CUR Quarterly **26**:182-184.

THOMAS, T.*, AND J. E. VISICK. 2004. Rapid detection of mycobacteria: a research collaboration with industry. Poster presentation at the Council on Undergraduate Research national conference, LaCrosse, WI.

Funding:

American Society for Microbiology General Meeting Travel Award, 2014

Council on Undergraduate Research Biology Division Travel Award, 2014

American Society for Microbiology Undergraduate Research Fellowship, 2009

Academic Research Enhancement Award (AREA, R15), National Institute on Aging, 2008-2011

Merck/AAAS Undergraduate Science Research Program grant, 2005-07

Council on Undergraduate Research summer undergraduate research fellowship, summer 2002

North Central College internal summer faculty development grants, summer 2001-2007

National Institutes of Health Postdoctoral Fellowship, 1995-98

National Science Foundation Graduate Fellowship, 1986-89

Undergraduate Research:

Total research students mentored since 2000: 54

Students who have graduated: 54

- Continued to a PhD program in biological research: 14
- Continued to another graduate program in science (MS or PhD): 7
- Continued to an MD, DDS or DVM program: 11
- Continued to professional school in another allied-health area: 5
- Continued to a career in secondary education: 2

Professional Affiliations:

American Society for Microbiology

Council on Undergraduate Research

Awards:

North Central College Clarence F. Dissinger Award for teaching, 2004

North Central College Dissinger Prize for Faculty Scholarship, 2008