

MICHAEL PIKAART

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Education

Calvin College	Chemistry	BS	1986
University of Michigan	Biological Chemistry	PhD	1992

Appointments

Associate Professor of Chemistry, Hope College, 2006-present
Visiting Scientist, Van Andel Research Institute, 2011
Visiting Scholar, Molecular Genetics and Molecular Biology, Univ of New Mexico, 2006-07
Assistant Professor of Chemistry, Hope College, 1999-2006
Instructor (Chemistry), National Institutes of Health, 1998-99
Staff Fellow, National Institutes of Health, 1996-99
Intramural Research Training Associate (postdoc), NIH, 1992-96

Teaching expertise

Allied health/non-majors chemistry (lecture and lab)

- *In consultation with nursing and biology colleagues, I developed Hope's current one-semester pre-professional chemistry course, Introductory Biological Chemistry (equivalent to "GOB," General/Organic/Biochemistry). I have taught this course for nine spring semesters since originally developing it.*

General chemistry (lecture and lab)

- *Teach majors' two-semester first-year chemistry and, in recent years, an accelerated one-semester version.*

Biochemistry (lecture and lab)

- *Teach upper-level biochemistry students (mostly chemistry and biology majors and/or premedical students), including incorporation of active learning pedagogies.*

First-year seminar

- *Teach a section of interdisciplinary seminar for first-time college students. I have taught this during five fall semesters each focusing on a health related topic including drug use/development, health policy, childhood cancer, and water chemistry/microbiology.*

Outside-of-classroom related experience:

Externally funded research with undergraduates

Seven years of continuous research funding through NIH AREA grant program, 2003-2010.

- *Performed research with undergraduates at Hope College on the DNA-binding transcription factor GATA-1 and its role in hematopoietic differentiation.*

Technical support on detection of microbiological contamination of local and international recreational and drinking water, 2010-present.

- *Worked with students, non-profits and local/state government to validate microbial testing methods in the local watershed, and internationally testing microbial, chemical, and sediment retention in filters distributed in developing countries for point-of-use drinking water purification.*

Five years of current continuous NSF-IUSE funding, 2015-2020 "Role of Undergraduate Biochemistry Education in Protein Function Assignment"

- *Implement and assess changes to biochemistry teaching laboratory to give students a more research-based curriculum; collaborate with other faculty at six other colleges/universities nationwide working as a consortium on this project.*

On-campus and national academic leadership

Regional director of Student Chapters, American Society of Biochemistry and Molecular Biology, 2011-2017.

- *Supervise activities of local undergraduate student chapters in the Midwest region of the ASBMB; gather with other regional directors twice annually to plan national Student Chapter content and prepare budgets.*

Biomed scholars informal mentor, 2014-present

- *Meet on an occasional basis, one-to-one and as a group, with Hope's Biomed scholars, a full-ride tuition scholarship for both Hope undergraduate and, pending acceptance, U-Mich Medical School, for underrepresented minority students.*

Health Professions Advisor Committee member (2012-present)

- *Meet 4-6 times/year with faculty representatives from various departments and Hope's staff Health Professions Advisor*

Summer research coordinator, Hope College Chemistry Dept, 2015- present.

- *Advertise and promote summer research opportunities to students on campus, work with faculty in student researcher selection; assign funding slots for summer stipends; organize and introduce weekly student research presentations during the summer.*

Other related campus service

Campus Life Board (member and chair), 2015-2017

- *Chaired the faculty governance board charged to work with administrators (student development office, chaplain's office, center for diversity and inclusion) related to non-academic aspects of student life; review and approve on-campus student groups.*

Nursing department advisory board, 2013-present

- *Participate as non-nursing faculty representative in annual internal self-review of Hope college BSN program and regular accreditation/external reviews.*

Community service

Board of Directors, Pediatric Oncology Resource Team (PORT), Helen DeVos Children's Hospital (Grand Rapids, MI), 2014-present (currently president).

- *Provide emotional and financial support to patients and families in treatment at HDVCH hematology/oncology unit; organize and participate in fundraiser activities in the west Michigan community for PORT; work with hospital foundation on disbursement of approx. \$200,000 annual PORT budget and \$500,000 PORT endowment.*

Volunteer, Child Life, Helen DeVos Children's Hospital, 2014-present.

- *Provide play time and distraction for children in the outpatient oncology clinic, and provide occasional respite care for inpatient children to allow for a break for their parents.*

Publications and other products

“CUREs: Building communities to support and sustain protein biochemistry research in the teaching laboratory.” ASBMB Transforming Undergraduate Education in the Molecular Life Sciences symposium, July 20-23, 2017, Tampa FL (Oral presentation).

MJ Pikaart and J Provost: “Thoughts on MOOCs.” *ASBMB Today*, 13(2): 32-34 (2014).

MJ Pikaart, “The turn of the screw: an exercise in protein structure.” *Biochemistry and Molecular Biology Education* 39(3): 221-5 (2011).

AJ Huisman, LR Hartsell, BP Krueger, and MJ Pikaart (2010), “Thermodynamic exploration of eosin-lysozyme binding,” *Journal of Chemical Education* 87(3): 299-302.

AB Fleming, C-F Kao, C Hillyer, M Pikaart, and MA Osley (2008), “H2B ubiquitylation plays a role in nucleosome dynamics during transcription elongation.” *Molecular Cell* 31(1): 57-66.

TR Vonderfect*, DN Schroyer, BL Schenck, VM McDonough, and MJ Pikaart (2008), “Substitution of DNA-Contacting Amino Acids with Functional Variants in the Gata-1 Zinc Finger: A Structurally and Phylogenetically Guided Mutagenesis.” *Biochemical and Biophysical Research Communications* 369(4): 1052-1056

AB Ghering, LM Miller Jenkins, BL Schenck, S Deo, RA Mayer, MJ Pikaart, JG Omichinski, and HA Godwin (2005). “Spectroscopic determination of the thermodynamics of the interaction of Pb²⁺ with GATA proteins.” *Journal of the American Chemical Society* 127: 3751-3759.

BH Mott, J Bassman, and MJ Pikaart (2004). “A molecular dissection of the interaction between the transcription factor Gata-1 zinc finger and DNA.” *Biochemical and Biophysical Research Communications* 316: 910-917.

F Recillas-Targa, MJ Pikaart, B Burgess-Beusse, AC Bell, MD Litt, AG West, M Gaszner, and G Felsenfeld. “Position-effect protection and enhancer blocking by the chicken beta-globin insulator are separable activities.” *Proc Natl Acad Sci U S A*. 99(10):6883-8 (2002).

N Saitoh, AC Bell, F Recillas-Targa, AG West, M Simpson, MJ Pikaart, and G Felsenfeld. “Structural and functional conservation at the boundaries of the chicken beta-globin domain.” *EMBO Journal* 19(10):2315-22 (2000).

PV Pedone, MJ Pikaart, F Cerrato, M Vernucci, P Ungaro, CB Bruni, and A Riccio. “The role of histone acetylation and DNA methylation in the maintenance of the imprinted expression of the H19 and Igf-2 genes.” *FEBS Letters* 458, 45-50 (1999).

MJ Pikaart, F Recillas Targa, and G Felsenfeld. “Loss of transcriptional activity of a transgene is accompanied by DNA methylation and histone acetylation, and is prevented by insulators.” *Genes and Development* 12, 2852-2862 (1998).

Professional References:

Available upon request