BOWDOIN COLLEGE • CLEVELAND HALL RM 255 • BRUNSWICK, ME 04011
PHONE 207-798-4326 • E-MAIL DDUBE@BOWDOIN.EDU

DANIELLE H. DUBE

PROFESSIONAL APPOINTMENTS

2016-present	**Bowdoin College**, Biochemistry Program ***Director of the Biochemistry Program***	Brunswick, ME
2016-2017	**University of California, Irvine**, Department of Chemistry ***Visiting Associate Researcher***	Irvine, CA
2014-present	**Bowdoin College**, Department of Chemistry ***Associate Professor of Chemistry and Biochemistry***	Brunswick, ME
2007-2014	**Bowdoin College**, Department of Chemistry ***Assistant Professor of Chemistry and Biochemistry***	Brunswick, ME
2005-2007	**Stanford University**, Department of Chemistry ***Postdoctoral Fellow,*** advisor Jennifer J. Kohler	Stanford, CA

EDUCATION

2000-2005	**University of California, Berkeley** ***Ph.D.,*** *Chemistry,* dissertation advisor Carolyn R. Bertozzi *Dissertation title*: Probing glycosylation in living animals using azidosugars and the Staudinger ligation.	Berkeley, CA
1996-2000	**Cornell University** ***B.A.,*** *Biology, Magna Cum Laude;* advisors Jon C. Clardy and C. Drew Harvell *Honors thesis title:* Chemical resistance of sea fans to fungal pathogens.	Ithaca, NY

HONORS AND AWARDS

2015	**Andrew W. Mellon Award**, Bowdoin College
2013	**Henry Dreyfus Teacher-Scholar Award**, Camille and Henry Dreyfus Foundation
2011	**Young Investigator Award**, FASEB summer research conference on Microbial Polysaccharides
2010	**Bowdoin Faculty Research (formerly Kenan) Fellowship**, Bowdoin College
2006	**Postdoctoral fellow**, Walter V. and Idun Berry Foundation
2006	**Poster award winner**, Pfizer Award for Outstanding Science, in recognition of an outstanding poster at the 2006 Bioorganic Gordon Research Conference
2004	**Travel award winner**, Society for Glycobiology
2002	**Travel award winner**, U.S. Advisory Committee for International Carbohydrate Symposia, Inc. (USACICS)
2000	**Graduate fellow**, National Science Foundation
1999	**Undergraduate fellow**, Howard Hughes Medical Institute

PUBLICATIONS

Undergraduate coauthors underlined, *corresponding author, ŦequaI contribution

Bowdoin College, 2014-present

Metabolic inhibitors of bacterial glycan biosynthesis.
D. A. Williams[Ŧ], K. Pradham[Ŧ], A. Paul, I. R. Olin, O. T. Tuck, K. D. Moulton, S. K. Kulkarni*, **D. H. Dube***, *under review*

Metabolic glycan engineering in live animals: using bioorthogonal chemistry to alter cell surface glycans. **D. H. Dube***, D. A. Williams, In *Handbook of in vivo chemistry in mice: from flask to animal*, K. Tanaka, K. Vong eds., Wiley-VCH (Germany), *In press*

Sugar-modified auranofin analogs are potent inhibitors of the gastric pathogen *Helicobacter pylori*.
T. D. Epstein[Ŧ], B. Wu[Ŧ], M. Yan*, **D. H. Dube***, *ACS Infectious Diseases*, **2019**, DOI: 10.1021/acsinfecdis.9b00251

Design of a Drug Discovery course for non-science majors.
D. H. Dube*. *Biochem. Mol. Biol. Educ.*, **2018**, *46*, 327-335.

Development of rare bacterial monosaccharide analogs for metabolic glycan labeling in pathogenic bacteria.
E. L. Clark, M. Emmadi, K. L. Krupp† A. R. Podilapu, J. D. Helble, S. S. Kulkarni*, **D. H. Dube***. *ACS Chem. Biol.*, **2016**, *11*, 3365-3373.

> *Note:* This paper was featured as a "spotlight" in ACS journal *Chemical Research in Toxicology*, and our artwork was featured on the front cover of *ACS Chemical Biology*.

A semester-long project-oriented biochemistry laboratory based on *Helicobacter pylori* urease.
K. R. Farnham, **D. H. Dube***. *Biochem. Mol. Biol. Educ.,* **2015**, *43*, 333-340.

Chemical tools to detect and target *Helicobacter pylori*'s glycoproteins.
V. N. Tra, **D. H. Dube***. In *Glycoscience: Biology & Medicine*. Taniguchi, N., Endo, T., Hart, G., Seeberger, P., Wong, C.-H. eds. SpringerReference (Japan), **2015**, 479-484.

Glycans in pathogenic bacteria – potential for targeted covalent therapeutics and imaging agents.
V. N. Tra, **D. H. Dube***. *Chemical Communications*, **2014**, *50*, 4659-4673.

Bowdoin College, 2007-2013

Targeted identification of glycosylated proteins in the gastric pathogen *Helicobacter pylori*.
K. Champasa[Ŧ], S. A. Longwell[Ŧ], A. M. Eldridge, E. A. Stemmler, **D. H. Dube***. *Molecular and Cellular Proteomics*. **2013**, *12.9*, 2568-2586.

Recruiting the host's immune system to target *Helicobacter pylori* based on its surface glycans.
Pornchai Kaewsapsak, Onyinyechi Esonu, **D. H. Dube***. *ChemBioChem*. **2013**, *14*, 721-726.

Deciphering the bacterial glycocode: recent advances in bacterial glycoproteomics.
S. A. Longwell, **D. H. Dube***. *Current Opinion in Chemical Biology*. **2013**, *17*, 41-48.

Metabolic labeling of bacterial glycans with chemical reporters.
D. H. Dube. In *Bacterial glycomics: Current research, technology, and applications*. Reid, C. W., Twine, S. M., Reid A.N. eds., Caister Academic Press, Norfolk (UK), **2012**.

Chemical tools to discover and target bacterial glycoproteins.
D. H. Dube*, K. Champasa, B. Wang. *Chem. Commun.,* **2011**, *47*, 87-101.

Metabolic profiling of *Helicobacter pylori* glycosylation.
M. B. Koenigs, E. A. Richardson and **D. H. Dube***. *Mol. Biosyst.,* **2009**, *5*, 909-912.

Note: This paper was chosen as a "hot paper" featured on the *Mol. BioSyst.* website, and our artwork was featured on the journal cover.

Development of a two-hybrid assay to study protein interactions within the secretory pathway.
D. H. Dube[Ŧ], B. Li[Ŧ], E. J. Greenblatt, A. K. Raymond, S. Nimer and J. J. Kohler. *PLOS One.* **2010**, *5*, e15648. [[Ŧ]These authors contributed equally to this work]

A strategy for the selective imaging of glycans using caged metabolic precursors.
P. V. Chang, **D. H. Dube**, C. R. Bertozzi. *J. Am. Chem. Soc.*, **2010**, *132*, 9516-9518.

Postdoctoral, Graduate, and Undergraduate Work

Regulating cell surface glycosylation with a small-molecule switch.
D. H. Dube, C. L. De Graffenried and J. J. Kohler. *Meth. Enzymol.*, **2006**, *415*, 213-229.

Probing mucin-type O-linked glycosylation in living animals.
D. H. Dube[Ŧ], J. A. Prescher[Ŧ], C. N. Quang and C. R. Bertozzi., *Proc. Natl Acad. Sci. USA*, **2006**, *103*, 4819-4824. [[Ŧ]These authors contributed equally to this work]

Glycans in cancer and inflammation: potential for therapeutics and diagnostics.
D. H. Dube and C. R. Bertozzi. *Nat. Rev. Drug Disc.*, **2005**, *4*, 477-488.

Chemical remodeling of cell surfaces in living animals.
J. A. Prescher[Ŧ], **D. H. Dube**[Ŧ], and C. R. Bertozzi. *Nature*, **2004**, *430*, 873-877. [[Ŧ]These authors contributed equally to this work]

Metabolic oligosaccharide engineering as a tool for glycobiology.
D. H. Dube and C. R. Bertozzi. *Curr. Opin. Chem. Biol.*, **2003**, *7*, 1-10.

Constructing azide-labeled cell surfaces using polysaccharide biosynthetic pathways.
S. J. Luchansky, H. C. Hang, E. Saxon, J. R. Grunwell, C. Yu, **D. H. Dube** and C. R. Bertozzi.
Meth. Enzymol., **2003**, *362*, 249-272.

Host range and resistance to aspergillosis in three sea fan species from the Yucatan.
K. M. Mullen, C. D. Harvell, A. P. Alker, **D. H. Dube**, E. Jordan-Dahlgren, J. R. Ward, L. E. Petes.
Mar. Biol., **2006**, *149*, 1355-1364.

Localized induction of a generalized response against multiple biotic agents in Caribbean sea fans.
A. P. Alker, K. Kim, **D. H. Dube**, and C. D. Harvell.
Coral Reefs, **2004**, *23*, 397-405.

Size structure and geographic variation in chemical resistance of sea fan corals *Gorgonia ventalina* to a fungal pathogen.
D. H. Dube, K. Kim, A. P. Alker and C. D. Harvell.
Mar. Ecol. Prog. Ser., **2002**, *231*, 139-150.

GRANTS

External Research Support, 2014-present

Sep. 2018-Aug. 2021	*Deciphering Helicobacter pylori's glycocode: uncovering & harnessing new drug targets*, Academic Research Enhancement Award, **National Institutes of Health** ($410,344)
Jul. 2015-Jun. 2018	*Deciphering Helicobacter pylori's glycocode: uncovering & harnessing new drug targets*,

Academic Research Enhancement Award, **National Institutes of Health** ($288,975)

Jul. 2014-Aug. 2018 *Deciphering Helicobacter pylori's glycocode: uncovering & harnessing new drug targets*, Maine INBRE Investigator Award, **National Institutes of Health** ($603,223 awarded; grant reduced to $306,490 after the above independent award from NIH secured)

External Research Support, 2007-2013

Aug. 2013-Jul. 2018 *Chemical tools to discover and target Helicobacter pylori's glycoproteins*, Henry Dreyfus Teacher-Scholar Awards Program, **Camille and Henry Dreyfus Foundation** ($60,000)

Aug. 2011-Jul. 2014 *Acquisition of LC-MS/MS for undergraduate research and education*, MRI Consortium, **National Science Foundation** ($379,944) role: co-PI

May 2010-Sept. 2013 *Chemical tools to understand and target Helicobacter pylori glycosylation*, Academic Research Enhancement Award, **National Institutes of Health** ($313,502)

Jan. 2009-Dec. 2010 *Hijacking the pseudaminic acid biosynthetic pathway to eliminate Helicobacter pylori infection*, Cottrell College Science Award, **Research Corporation** ($45,000)

Sept. 2007-Aug. 2012 *Chemical tools to target, alter and understand glycosylation*, Faculty Start-up Award for Undergraduate Institutions, **Camille and Henry Dreyfus Foundation** ($30,000)

Internal Research Support

Jul. 2016-Jun. 2017 *Chemical tools for imaging sugar-mediated cellular cross-talk*, Andrew W. Mellon Award**, Bowdoin College** (sabbatical support)

Jul. 2010-Jun. 2011 *Chemical tools to understand and target Helicobacter pylori's sugar coating*, Bowdoin Faculty Research Fellowship (sabbatical support), **Bowdoin College** ($10,000)

COURSES TAUGHT

Drug Discovery (Chemistry 1058)

General Chemistry (Chemistry 1109)

Principles of Biochemistry (Chemistry 2310)

Biochemistry (Chemistry 2320)

Chemical Biology (Chemistry 3310)

Advanced Independent Study in Chemistry (Chemistry 4050/Chemistry 4051)

Advanced Independent Study in Biochemistry (Biochemistry 4050/Biochemistry 4051)

PRESENTATIONS

Invited Research Seminars

Colby College, Department of Chemistry, Waterville, ME (Mar. 1, 2019)
Haverford College, Department of Chemistry, Haverford, PA (Feb. 1, 2019)
Middlebury College, Department of Chemistry, Middlebury, VT (Nov. 30, 2018)
Wesleyan College, Department of Chemistry, Middletown, CT (Oct. 26, 2018)
Bowdoin College, Faculty Seminar Series, Brunswick, ME (Mar. 2018)
Brown University, Department of Chemistry, Providence, RI (Oct. 6, 2017)
University of Massachusetts Lowell, Department of Chemistry, Lowell, MA (Sept. 22,

2017)
Claremont McKenna, Pitzer and Scripps Colleges, Keck Science Department, Claremont, CA (Jan. 31, 2017)
University of Maine, Orono, Department of Molecular and Biomedical Sciences, Orono, ME (Jan. 22, 2016)
Wellesley College, Department of Chemistry, Wellesley, MA (Nov. 11, 2014)
Amherst College, Department of Chemistry, Amherst, MA (Sept. 20, 2013)
Northeastern University, Department of Chemistry, Boston, MA (July 25, 2013)
Bowdoin College, Faculty Seminar Series, Brunswick, ME (Sept. 26, 2012)
University of Missouri, Department of Biochemistry, Columbia, MO (Mar. 16, 2012)
Pomona College, Department of Chemistry, Claremont, CA (Sept. 13, 2011)
Union College, Department of Chemistry, Schenectady, NY (Apr. 29, 2011)
Colby College, Department of Chemistry, Waterville, ME (Mar. 4, 2011)
Williams College, Department of Chemistry, Williamstown, MA (Feb. 25, 2011)
University of California Irvine, Department of Chemistry, Irvine, CA (Oct. 20, 2010)
University of New England, Department of Chemistry, Biddeford, ME (Oct. 2, 2009)
University of New Hampshire, Department of Molecular and Cellular, and Biomedical Sciences, Durham, NH (Sept. 21, 2009)
National Institutes of Health, Bethesda, MD, Host: Larry Tabak (Jul. 31, 2009)
University of Maine, Department of Chemistry, Orono, ME (Sept. 19, 2008)
National Institutes of Health mentoring workshop, Dallas, TX (May 5, 2008)
Bowdoin College, Department of Chemistry, Brunswick, ME (Dec. 8, 2006)
Wellesley College, Department of Chemistry, Wellesley, MA (Dec. 6, 2006)
Lafayette College, Department of Chemistry, Easton, PA (Dec. 4, 2006)
Western Washington University, Dept. of Chemistry, Bellingham, WA (Nov. 28, 2006)
Dickinson College, Department of Chemistry, Carlisle, PA (Nov. 20, 2006)
Union College, Department of Chemistry, Schenectady, NY (Nov. 2, 2006)

Invited Research Talks at Conferences

National IDeA Symposium of Biomedical Research Excellence. Washington, DC. June 2018.
New England Glycochemistry Meeting. Boston, MA. June 2018.
Northeastern Regional IDeA Conference. Burlington, VT. August 2017.
FASEB Summer Research Conference on Microbial Glycobiology. West Palm Beach, FL. June 2016.
American Chemical Society National Meeting. San Diego, CA. March 2016.
American Chemical Society National Meeting. Dallas, TX. March 2014.
Carbohydrate Gordon Research Conference. West Dover, VT. June 2013.
FASEB Summer Research Conference on Microbial Polysaccharides. Young Investigator Award Talk. Carefree, AZ. June 2011.
Bioorganic Chemistry Gordon Research Conference. Andover, NH. June 2011.
Glycobiology Gordon Research Conference. Barga, Italy. May 2011.
New England Research Center for Excellence Annual Retreat. Newport, RI. Nov. 2010.
Maine Biological and Medical Sciences Symposium. Bar Harbor, ME. April 2010.
American Chemical Society National Meeting. San Francisco, CA. March 2010.

Contributed Poster Presentations [*indicates presenter; undergraduate co-authors underlined]

Interfering with *Helicobacter pylori*'s glycans.
D. A. Williams*, K. Pradham, A. Paul, S. S. Kulkarni, and D. H. Dube.
American Chemical Society National Meeting. April 2019.

Examining the glycosylation pathway in *Helicobacter pylori* using mass spectrometry.

C. Liu*, E. A. Stemmler and D. H. Dube.
American Chemical Society National Meeting. March 2019.

Comparison of covalent delivery methods and their effects for immune-mediated killing of *Helicobacter pylori*.
H. Lee* and D. H. Dube.
American Chemical Society National Meeting. March 2019.

Novel sugar-based gold inhibitors of *Helicobacter pylori*.
T. Epstein*, B. Wu, M. Yan, and D. H. Dube.
American Chemical Society National Meeting. March 2019.
New England Glycochemistry Meeting. June 2019.

Interfering with glycoprotein production in the gastric pathogen *Helicobacter pylori*.
K. D. Moulton, D. A. Williams, H. A. Carrol, S. A. Mikami, N. Salama, S. S. Kulkarni, and D. H. Dube*.
Glycobiology Gordon Research Conference. March 2019.

Discovery of genes required for glycoprotein biosynthesis in the gastric pathogen *Helicobacter pylori*.
K. D. Moulton, H. A. Carrol, S. A. Mikami, N. Salama and D. H. Dube*.
Natural Products Gordon Research Conference. July 2018.

Analysis of glycoprotein production in antibiotic resistant strains of *Helicobacter pylori*.
H. Blain*, K. Moulton and D. H. Dube.
American Chemical Society National Meeting. March 2018.

Targeting of *Helicobacter pylori* using photodynamic therapy agents.
D. A. Williams*, I. A. Kline and D. H. Dube.
American Chemical Society National Meeting. March 2018.

Development of an alkyne-based therapeutic to covalently target bacterial pathogens based on their distinctive glycans.
R. Herman* and D. H. Dube.
American Chemical Society National Meeting. April 2017.

Discovery of genes required for glycoprotein biosynthesis in the gastric pathogen *Helicobacter pylori*.
K. D. Moulton, H. A. Carrol, S. A. Mikami, and D. H. Dube*.
Glycobiology Gordon Research Conference. March 2017.
North East Regional IDeA Meeting. August 2017.

Glycans in pathogenic bacteria – potential for selective targeting.
E. Clark, K. Krupp, M. Emmadi, S. Kulkarni and D. H. Dube*.
IDeA Symposium of Biomedical Research Excellence. June 2016.

Analysis of glycoproteins in *Helicobacter pylori* overexpressed in the presence of host cells.
J. Muscato* and D. H. Dube.
American Chemical Society National Meeting. March 2016.

Addition of basic sites to glycans of *Helicobacter pylori* to increase MS/MS peak abundance.
H. Miller*, E. A. Stemmler, and D. H. Dube.
American Chemical Society National Meeting. March 2016.

Comparison of covalent delivery methods for immune-mediated targeting of *Helicobacter pylori*.
J. E. Feldman* and D. H. Dube.
American Chemical Society National Meeting. March 2016.

A glycan-based strategy for selectively targeting pathogenic bacteria.
K. Krupp* and D. H. Dube.
American Chemical Society National Meeting. March 2016.

Glycans in pathogenic bacteria – potential for selective targeting.
E. Clark, K. Krupp, M. Emmadi, S. Kulkarni and D. H. Dube*.

Carbohydrates Gordon Research Conference. June 2015.
Northeast Regional IdEA meeting. September 2015.

An analysis of *Helicobacter pylori* strains deficient in protein glycosylation.
S. Mikami* and D. H. Dube.
American Chemical Society National Meeting. March 2015.

A targeted study of bacterial glycoproteins using metabolic oligosaccharide engineering.
E. Clark* and D. H. Dube.
American Chemical Society National Meeting. March 2015.

Development of a cyclooctyne-based photodynamic antibiotic for targeting *Helicobacter pylori*'s surface sugars.
I. A. Kline*, V. N. Tra and D. H. Dube.
American Chemical Society National Meeting. March 2015.
Beckman Conference. August 2015.

Glycans in pathogenic bacteria – potential for targeted covalent therapeutics.
V. N. Tra, I. A. Kline, *P. Kaewsapsak*, O. Esonu, and D. H. Dube*.
Bioorganic Chemistry Gordon Research Conference. June 2014.
American Chemical Society National Meeting. August 2014.
Dreyfus Teacher-Scholar Symposium. October 2014.

An investigation of the efficacy of metabolic oligosaccharide engineering in different bacterial species.
J. D. Helble* and D. H. Dube.
American Chemical Society National Meeting. March 2014.

Synthesis of a cyclooctyne-based photodynamic antibiotic for targeting *Helicobacter pylori*'s surface sugars.
I. A. Kline* and D. H. Dube.
American Chemical Society National Meeting. March 2014.

Structural identification of *Helicobacter pylori's* glycoproteins.
S. Kuna*, E. A. Stemmler and D. H. Dube.
American Chemical Society National Meeting. March 2014.

Photodynamic therapy of the gastric pathogen *Helicobacter pylori* via phosphine probes delivered to surface glycans.
V. Tra* and D. H. Dube.
American Chemical Society National Meeting. March 2014.

Chemical tools to discover and target *Helicobacter pylori*'s glycoproteins.
K. Champasa, S. Longwell, V. Tra, P. Kaewsapsak, O. Esonu and D. H. Dube*.
Carbohydrate Gordon Research Conference. June 2013.

Selective damage of the gastric pathogen *Helicobacter pylori* based on its surface glycans.
V. Tra*, P. Kaewsapsak, O. Esonu, and D. H. Dube.
American Chemical Society National Meeting. April 2013.

Recruiting the host's immune system to target *Helicobacter pylori* based on its unique glycans. P. Kaewsapsak, O. Esonu and D. H. Dube*.
New England Research Center for Excellence Annual Retreat. November 2012.

Targeted identification of glycosylated proteins in the gastric pathogen *Helicobacter pylori.*
S. Longwell* K. Champasa, and D. H. Dube.
American Chemical Society National Meeting. April 2013.
American Society for Mass Spectrometry. May 2012. (**Undergraduate poster award**)
New England Research Center for Excellence Annual Retreat. November 2012.
American Chemical Society Northeastern Regional Meeting. October 2012.

A chemical approach to target *Helicobacter pylori* based on its unique glycans.
P. Kaewsapsak*, O. Esonu and D. H. Dube.
American Chemical Society National Meeting. March 2012.
New England Research Center for Excellence Annual Retreat. November 2011.

A chemical strategy to identify glycosylated proteins in bacterial pathogens.
K. Champasa, S. Longwell* and D. H. Dube.
American Chemical Society National Meeting. March 2012.
New England Research Center for Excellence Annual Retreat. November 2011.

A chemical approach to discover *Helicobacter pylori's* glycoproteins.
K. Champasa and D. H. Dube*.
Glycobiology Gordon Research Conference. May 2011.
Bioorganic Chemistry Gordon Research Conference. June 2011.

Metabolic profiling of *Helicobacter pylori* glycosylation.
K. Champasa* and D. H. Dube.
Maine Biological and Medical Sciences Symposium. April 2010.
American Chemical Society National Meeting. March 2011.

A chemical approach to target *Helicobacter pylori* based on its unique glycans.
B. Wang* and D. H. Dube.
New England Research Center for Excellence Annual Retreat. November 2010.
American Chemical Society National Meeting. March 2011.

Synthesis of therapeutic phosphines to target *Helicobacter pylori's* pseudaminic acid.
M. Nowicki* and D. H. Dube.
New England Research Center for Excellence Annual Retreat. November 2010.
Maine Biological and Medical Sciences Symposium. April 2010.

Synthesis of an azidosugar substrate to selectively label *Helicobacter pylori* pseudaminic acid.
B. Wang* and D. H. Dube.
Maine Biological and Medical Sciences Symposium. April 2010.

Metabolic profiling of *Helicobacter pylori* glycosylation.
M. B. Koenigs* and D. H. Dube. (**Honorable mention at the undergraduate poster competition**)
Annual Conference of the American Society for Biochemistry and Molecular Biology. April 2009.

Metabolic profiling of *Helicobacter pylori* glycosylation.
M. B. Koenigs and D. H. Dube*.
New England Research Center for Excellence Meeting. October 2009.
2009 Bioorganic Gordon Research Conference. June 2009.

Testing the substrate flexibility of *H. pylori*'s pseudaminic acid biosynthetic pathway.
N. A. Selden*, H. Guo* and D. H. Dube.
Annual Conference of the American Society for Biochemistry and Molecular Biology. April 2009.

Validating the Golgi two-hybrid assay's utility in studying glycosylated proteins.
M. A. Shew* and D. H. Dube. (**First prize at the undergraduate poster competition**)
Annual Conference of the American Society for Biochemistry and Molecular Biology. April 2009.

Incorporation of azides onto *Helicobacter pylori* cell surfaces.
D. H. Dube*, Elizabeth A. Richardson, and Sarah S. Burns.
2008 Bioorganic Gordon Research Conference. June 2008.

Incorporation of azides onto *Helicobacter pylori* cell surfaces.
Elizabeth A. Richardson*, Sarah S. Burns*, and D. H. Dube,
Annual Conference of the American Society for Biochemistry and Molecular Biology. April 2008.

Development of the Golgi two-hybrid assay.
D. H. Dube*, E. J. Greenblatt, and J. J. Kohler.
2006 Bioorganic Gordon Research Conference. July 2006.
232nd National American Chemical Society Meeting. Sept. 2006.
2007 Glycobiology Gordon Research Conference. March 2007.

Profiling glycosylation using azidosugars *in vivo*.

D. H. Dube*, J. A. Prescher, C. N. Quang, and C. R. Bertozzi.
Annual Conference of the Society for Glycobiology. Nov. 2004.

Probing azidosugar metabolism *in vivo* using the Staudinger ligation.
D. H. Dube*, J. A. Prescher*, and C. R. Bertozzi.
Annual Conference of the Society for Glycobiology. Dec. 2003.

SERVICE TO BOWDOIN COLLEGE

2019-present	Biochemistry Program Director Faculty Appeals and Grievances Committee College time-block working group Health Professions Advising Committee Chemistry department seminar series organizer
2018-2019	Biochemistry Program Director Faculty Appeals and Grievances Committee Bowdoin Advising in Support of Academic Excellence (BASE) advisor Chemistry working group, assessment Health Professions Advising Committee Beckman Scholars Program Steering Committee Chemistry department seminar series organizer Chemistry department faculty search committee Faculty Presenter at Bowdoin's Reunion Weekend
2017-2018	Biochemistry Program Director Faculty Appeals and Grievances Committee Chemistry working group, course-based undergraduate research experiences Health Professions Advising Committee Public Health Initiative working group
2016-2017	on sabbatical leave
2015-2016	Chair, Recording Committee Biochemistry Program Chemistry working group, introductory chemistry Chemistry Honors workshop leader, spring semester Panelist for an admissions panel for high school guidance counselors
2014-2015	Chair, Recording Committee Biochemistry Program Chemistry Honors workshop leader, spring semester Ad hoc member for History/Asian Studies position Chemistry department faculty search committee Faculty presentation for Parent's Weekend Bowdoin Science Experience lab mentor
2013-2014	Chair, Recording Committee, spring semester Biochemistry Program Chemistry Honors workshop leader, spring semester Bowdoin Science Experience lab mentor Ad hoc member for Visual Art position search
2012-2013	Recording Committee Biochemistry Program Radiation Safety Committee

	Chemistry Honors workshop leader, spring semester Ad hoc member for Neuroscience/Psychology position search
2011-2012	on sabbatical leave fall semester Biochemistry Program Chemistry Honors workshop leader, spring semester
2010-2011	on parental leave fall semester, sabbatical leave spring semester
2009-2010	Faculty Development Committee Biochemistry Program Chemistry Honors workshop co-leader Ad hoc member for Neuroscience/Psychology position search
2008-2009	Faculty Development Committee Biochemistry Program Chemistry Honors workshop co-leader Ad hoc member for English position search
2007-2008	Chemistry department faculty search committee Biochemistry Program Chemistry department seminar series co-organizer

PROFESSIONAL SERVICE

External Program Reviews

February 2019 Lewis & Clark College's Biochemistry and Molecular Biology Program

External Tenure Reviews

2018	Haverford College
2017	Pomona College
	Keck Science Department, Claremont Colleges
	Western Washington University
2015	Davidson College
	University of South Carolina
	Bryant University

Reviewer of Proposals

2018	Beckman Scholars Program proposal panel, Beckman Foundation
	Ad Hoc Reviewer, National Science Foundation grant proposal
	Ad Hoc Panelist, National Institutes of Health, SBCB grant review panel
2017	Ad Hoc Panelist, National Institutes of Health, SBCB grant review panel
	Ad Hoc Panelist, National Institutes of Health, SBCA/B R15 special emphasis grant review panel
2016	Ad Hoc Panelist, National Institutes of Health, SBCA grant review panel
	Panelist, National Science Foundation grant proposal review panel
	Reviewer, Medical Research Council (UK) grant proposal
2015	Ad Hoc Reviewer, National Science Foundation grant proposal
	Beckman Scholars Program proposal panel, Beckman Foundation
2014	Beckman Scholars Program proposal panel, Beckman Foundation
	Panelist, National Science Foundation grant proposal review panel
2013	Ad Hoc Reviewer, Research Corporation
	Reviewer, Biotechnology & Biological Sciences Research Council grant proposal
2011	Research Corporation grant proposal
2010	Research Corporation grant proposal
2008	Research Corporation grant proposal
	Reviewer, Medical Research Council (UK) grant proposal

Reviewer of Manuscripts
ACS Chemical Biology, ACS Infectious Diseases, Angewandte Chemie, Biochemistry, Bioconjugate Chemistry, Bioorganic and Medicinal Chemistry Letters, Cell Chemical Biology, ChemBioChem, Chemical Communications, Chemical Reviews, Chemical Science, Journal of Chemical Education, Molecular BioSystems, Organic Letters, Proceedings of the National Academy of Sciences

Reviewer of Books
2008 Garland Science, Taylor and Francis Group

Mentoring & Leadership
Summer, 2019 **Participant,** Project Kaleidoscope STEM Leadership Institute
2018-present **Mentoring Scholar,** Rhode Island INBRE Faculty Development Mentoring Committee
Summer, 2018 **Faculty Mentor,** Career Development Panel, Natural Products Gordon Research Seminar
Summer, 2018 **Faculty Mentor,** Career Development Panel, Bioorganic Gordon Research Seminar
Summer, 2018 **Discussion leader,** Natural Products Gordon Research Seminar
Summer, 2015 **Discussion leader,** Carbohydrates Gordon Research Conference

RESEARCH MENTORING EXPERIENCE

Honors Projects Mentored

Jan. 2017- Jul. 2019 **Hyungyu Lee '19** "Comparison of covalent delivery methods and their effect for immune-mediated killing of *Helicobacter pylori*"
Honors: Beckman Scholars Award
Post-Bowdoin: MD-PhD program at Emory University

Jan. 2017- May 2019 **Tessa Epstein '19** "Novel sugar-based gold inhibitors of *Helicobacter pylori*"
Post-Bowdoin: PhD program in chemical biology at University of Michigan

Jan. 2017- May 2019 **Daniel Williams '19** "Small molecule inhibition of *Helicobacter pylori* glycosylation"
Post-Bowdoin: Post-baccalaureate research at the National Institutes of Health

Jun. 2017- May 2018 **Hailey Blain '18** "Analysis of glycoprotein production in antibiotic resistant strains of *Helicobacter pylori*"
Post-Bowdoin: Post-baccalaureatte research at the National Institutes of Health

Jun. 2016- May 2017 **Ryan Herman '17** "Development of alkyne-based therapeutics for the eradication of pathogenic bacteria based on their distinctive glycans"
Post-Bowdoin: Teacher in Africa

Jun. 2014- Jul. 2016 **Hal Miller '16** "Addition of basic sites to the glycans of *Helicobacter pylori* to increase MS/MS peak abundance," co-advised with Elizabeth Stemmler
Post-Bowdoin: Master's program in science and religion at St. Andrews

Sept. 2015- May 2016 **Jacob Muscato '16** "Analysis of *Helicobacter pylori* glycoproteins overexpressed in the presence of host cells"
Post-Bowdoin: PhD program in chemical biology at Harvard University

Jun. 2015- May 2016 **Jared Feldman '16** "Comparison of covalent delivery methods for immune-mediated targeting of *Helicobacter pylori*"
Post-Bowdoin: PhD program in virology at Harvard University

Jan. 2015- May 2016 **Katie Krupp '16** "A glycan-based strategy for selectively targeting pathogenic bacteria"
Post-Bowdoin: PhD program in microbiology at MIT

Jun. 2014- May 2015 **Emily Clark '15** "A targeted study of bacterial glycoproteins using metabolic oligosaccharide engineering"

Post-Bowdoin: PhD program in microbiology at MIT

Jun. 2013- Jul. 2015 **Ian Kline '15** "Development of a cyclooctyne-based photodynamic antibiotic for targeting *Helicobacter pylori's* sugars"
Honors: Beckman Scholars Award, Fulbright Scholar Award
Post-Bowdoin: MD program at New York University

Jun. 2013- May 2014 **Jennifer Helble '14** "An investigation of the efficacy of metabolic oligosaccharide engineering in different bacterial species"
Post-Bowdoin: PhD program in immunology at Harvard University

Jun. 2013- May 2014 **Sunnie Kuna '14** "Structural analysis of *Helicobacter pylori*'s glycans," co-advised with Elizabeth Stemmler
Post-Bowdoin: Dental school, Tufts University

Sept. 2013- May 2014 **Hallie Carol '14** "Identification of enzymes involved in *Helicobacter pylori*'s protein glycosylation"
Post-Bowdoin: MD program at Columbia University

Sept. 2012- May 2013 **Van Tra** "Synthesis of phosphine-photosensitizers to target *Helicobacter pylori* by photodynamic therapy"
Post-Bowdoin: Graduate program at University of Colorado, Boulder
Honors: NSF graduate research fellowship

Sept. 2012- May 2013 **Andrea Koenigsberg** "Monitoring glycan dynamics in *Helicobacter pylori*"
Post-Bowdoin: PhD program in molecular microbiology at Tufts

Jan. 2011- Aug. 2012 **Onyinyechi Esonu** "Validation of *Helicobacter pylori*'s putative glycoproteins"
Post-Bowdoin: Dental school program at University of Conneticut

Jan. 2011- Aug. 2012 **Scott Longwell** "Discovering *Helicobacter pylori*'s glycoproteins using metabolic oligosaccharide engineering"
Post-Bowdoin: MD program at Columbia University
Honors: Beckman Foundation Fellowship, INBRE Junior Biomedical Research, Award at the ASMS Undergraduate Poster Competition, at the ASMS national meeting in Vancouver (2012)

Jan. 2011- Aug. 2012 **Pornchai Kaewsapsak** "Synthesis of therapeutic phosphines to selectively inactivate *Helicobacter pylori* glycosylation"
Post-Bowdoin: PhD program in Chemistry at MIT; postdoc in Singapore

Jun. 2009- May 2011 **Bo Wang** "Chemoenzymatic synthesis of AltNAz"
Post-Bowdoin: MD program at Albert Einstein Medical College

Jun. 2009-May 2011 **Kanokwan Champasa** "Discovering *Helicobacter pylori*'s glycoproteins using metabolic oligosaccharide engineering"
Post-Bowdoin: PhD program in biochemistry at MIT

Jun. 2008-May 2009 **Han Guo** "Synthesis of unnatural azidosugars designed to hijack *Helicobacter pylori's* pseudaminic acid biosynthetic pathway"
Post-Bowdoin: PhD program in chemical biology at Cornell University

Jun. 2008-May 2009 **Maria Koenigs** "Metabolic profiling of *Helicobacter pylori's* glycosylation"
Honors: Honorable mention at an undergraduate poster competition at the annual ASBMB meeting in New Orleans (2009)
Post-Bowdoin: MD program at Yale University Medical School; currently ear-nose-throat fellowship

Jun. 2008-May 2009 **Matt Shew** "Validating the Golgi two-hybrid assay's utility in studying glycosylated proteins"
Honors: First prize at the undergraduate poster competition at the annual ASBMB meeting in New Orleans (2009)
Post-Bowdoin: MD program at Indiana University School of Medicine

Jun. 2008-May 2009 **Nick Selden** "Towards enzymatic synthesis of a novel *Helicobacter pylori* antibiotic"
Honors: Sumner Increase Kimball Prize winner (2009)
Post-Bowdoin: MD program at University of CA, San Francisco

Sept. 2007-May 2008 **Elizabeth Richardson** "Metabolic incorporation of unnatural azidosugars into *Helicobacter pylori*"
Post-Bowdoin: Lab technician at Yale University

Jan. 2006-May 2007 **Amanda Raymond** "Calibrating the sensitivity of the Golgi two-hybrid assay"
Honors: First prize poster competition and third prize oral presentation award winner (National American Indian Science and Engineering Society meeting, Detroit, Michigan, 2006)
Terminal Degree: MD from Duke University Medical School

Independent Study, Summer Projects, and Bowdoin Science Experience Work-Study Mentored

Sept. 2019-present **Brendan Pulsifer '20** "Immune-mediated targeting of cellular glycans"

May 2019-present **Owen Tuck '20** "Small molecule inhibition of *Helicobacter pylori* glycosylation"

Jan. 2019-present **Ilana Olin '20** "Exploring the effect of glycosylation inhibitors on *Campylobacter jejuni* and *Bacteroides fragilis*"

May 2019-present **Chiamaka Okoye '21** "Investigating the glycosylation pathway of *Helicobacter pylori's* proteins for drug targeting"

Sept. 2018-present **Adedunmola Adewale '22** "Discovery of genes required for glycolipid biosynthesis in the gastric pathogen *Helicobacter pylori*"

Jan. 2018-Dec. 2018 **Catherine Liu '19** "Examining the glycosylation pathway in *Helicobacter pylori* using mass spectrometry"
Post-Bowdoin: Teacher, intends to pursue medicine

Sept. 2014-July 2015 **Brigitte McFarland '19** "The development of a light-sensitive therapeutic for the elimination of *Helicobacter pylori*"

May 2011-Dec. 2011 **Daniel Chin '12** "Synthesis of an azidosugar to selectively target *Helicobacter pylori* based on its unique glycans"
Current position: Teacher at North Yarmouth Academy

May 2009-May 2010 **Max Nowicki** "Synthesis of therapeutic phosphines to selectively inactivate *Helicobacter pylori* glycosylation"
Post-Bowdoin: MD program at Weill Cornell Medical College

Fall 2007 **Sarah Burns** "Cloning of *Helicobacter pylori*'s pseudaminic acid biosynthesis enzymes"
Post-Bowdoin: Laboratory technician at The Research Institute at Nationwide Children's Hospital, Cleaveland

Jan. 2004-May 2005 **Chi Quang** "Probing mucin-type O-linked glycosylation in living animals"
Terminal Degree: O.D. from UC Berkeley School of Optometry