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## EDUCATION

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1995–1999	Geneseo College (SUNY)	Geneseo, NY
Earned a B.S. in biochemistry and completed a minor in Latin Graduated <i>summa cum laude</i>		
1999–2004	University of California, Berkeley	Berkeley, CA
Earned a Ph.D. in organic chemistry		

## RESEARCH EXPERIENCE

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1997–1999	Geneseo College (SUNY)	Geneseo, NY
<i>Research assistant</i> (Profs. Robert E. Rosenberg and David K. Johnson)		
1999–2004	UC Berkeley	Berkeley, CA
<i>Graduate student</i> (Profs. Dirk Trauner and David W. C. MacMillan)		
2005–2012	Scripps Institution of Oceanography, UC San Diego	La Jolla, CA
<i>Postdoctoral scholar/Research associate IV</i> (Prof. William Fenical)		
2012–	Scripps Institution of Oceanography, UC San Diego	La Jolla, CA
<i>Assistant Professor of Chemical Biology</i>		

## PRESENTATIONS (RECENT)

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11/2009	Ecole Polytechnique Fédérale de Lausanne	Lausanne, Switzerland
2/2010	Gordon Research Conference	Ventura, CA, USA
1/2011	Georgia Institute of Technology	Atlanta, GA, USA
1/2011	Max Planck Group Leader Symposium	Berlin, Germany
4/2011	Helmholtz Center for Infection Research	Braunschweig, Germany
7/2011	American Society of Pharmacognosy	San Diego, CA, USA
9/2011	University of Illinois at Chicago	Chicago, IL, USA
9/2011	VAAM Conference	Bonn, Germany
11/2011	Max Planck Group Leader Symposium	Dortmund, Germany
1/2012	National Cancer Institute	Frederick, VA, USA
2/2012	Scripps Institution of Oceanography	La Jolla, CA, USA
5/2012	Hans Knöll Institute	Jena, Germany
10/2013	Western Regional ACS Meeting	Santa Clara, CA, USA
5/2014	SIO Institutional Seminar Series	La Jolla, CA, USA
7/2014	University of Tübingen	Tübingen, Germany
8/2014	US-China Summit on Marine Natural Product Science	Yantai, China
8/2015	IUPAC Conference	Busan, Korea
8/2015	Seoul National University	Seoul, Korea
9/2015	2 <sup>nd</sup> European Conference on Natural Products	Frankfurt, Germany

## AWARDS AND HONORS

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- 1999 Honorary Award in Biochemistry
- 2002 Eli Lilly Predoctoral Fellowship
- 2003 Roche Biosciences Predoctoral Fellowship
- 2014 Hellman Foundation Fellowship

## RESEARCH PUBLICATIONS

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- 26. Hahn, D.; Castro, G.; Reimer, D.; Hughes, C. C. Reactivity-guided drug discovery: Thiol probes to detect natural products based on their mechanism of action (in preparation)
- 25. Gallagher, K. A.; Wanger, G.; Henderson, J.; Llorente, M.; Hughes, C. C.; Jensen, P. R. Microaerophilic conditions cue changes in secondary metabolite production in a marine-derived *Streptomyces* (submitted)
- 24. Richter, T. K. S.; Hughes, C. C.; Moore, B. S. Sioxanthin, a novel glycosylated carotenoid, reveals an unusual subclustered biosynthetic pathway. *Environ. Microbiol.* **2014**, *17*, 2158-2171
- 23. Alvarez-Mico, X.; Jensen, P. R.; Fenical, W.; Hughes, C. C. Chlorizidine, a cytotoxic 5H-pyrroloisindolone-containing alkaloid from a marine *Streptomyces* sp. *Org. Lett.* **2013**, *15*, 988-991
- 22. Yamanaka, K.; Ryan, K. S., Gulder, T. A. M., Hughes, C. C., Moore, B. S. Flavoenzyme-catalyzed atropo-selective N,C-bipyrrole homocoupling in marinopyrrole biosynthesis. *J. Am. Chem. Soc.* **2012**, *134*, 12434-12437

## SELECTED RESEARCH PUBLICATIONS (DOCTORATE AND POSTDOCTORATE)

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- 20. Yang, M.; Liu, Z.; Hughes, C. C.; Stern, A. M.; Wang, H.; Zhong, Z.; Kan, B.; Fenical, W.; Zhu, J. Bile salt-induced intermolecular disulfide bond formation activates *Vibrio cholerae* Virulence. *Proc. Natl. Acad. Sci.* **2013**, *110*, 2348-2353
- 19. Haste, N. M.; Hughes, C. C.; Tran, D. N.; Fenical, W.; Jensen, P. R.; Nizet, V.; Hensler, M. E. Pharmacological properties of the marinatural product marinopyrrole A against methicillin-resistant *Staphylococcus aureus*. *Antimicrob. Agents Chemother.* **2011**, *55*, 3305-3312
- 18. Pangerl, M.; Hughes, C. C.; Trauner, D. Total synthesis of newbouldine via reductive N-N bond formation. *Tetrahedron* **2010**, *66*, 6626-6631
- 17. Hughes, C. C.; Kauffman, C. A.; Jensen, P. R.; Fenical, W. Structures, reactivities, and antibiotic properties of the marinopyrroles A-F. *J. Org. Chem.* **2010**, *75*, 3240-3250
- 16. Hughes, C. C.; Fenical, W. Total synthesis of the ammosamides. *J. Am. Chem. Soc.* **2010**, *132*, 2528-2529  
*Featured in "Treasures from the Sea: Discovery and Total Synthesis of Ammosamides." Zurwerra, D.; Wullschlegel, C. W.; Altmann, K.-H. Angew. Chem. Int. Ed. 2010, 49, 2-5*
- 15. Nett, M.; Gulder, T. A. M.; Kale, A. J.; Hughes, C. C.; Moore, B. S. Function-oriented biosynthesis of  $\beta$ -lactone proteasome inhibitors in *Salinispora tropica*. *J. Med. Chem.* **2009**, *52*, 6163-6167
- 14. Hughes, C. C.; Yang, Y.-L.; Liu, W.-T.; Dorrestein, P. C.; La Clair, J. J., Fenical, W. Marinopyrrole A target elucidation by acyl dye transfer. *J. Am. Chem. Soc.* **2009**, *131*, 12094-12096
- 13. Hughes, C. C.; MacMillan, J. B.; Gaudêncio, S. P.; Fenical, W.; La Clair, J. J. Ammosamides A and B target myosin. *Angew. Chem. Int. Ed.* **2009**, *48*, 728-732  
*Featured in "Probing Ammosamide Activity." Gordon, E. J. ACS Chem. Biol. 2009, 4, 80-84*

12. Hughes, C. C.; MacMillan, J. B.; Gaudêncio, S. P.; Jensen, P. R.; Fenical, W. The ammosamides, structures of cell cycle modulators from a marine-derived *Streptomyces* sp. *Angew. Chem. Int. Ed.* **2009**, *48*, 725-727  
*Featured in "Unearthing Ammosamides." Kotz, J. Nature Chem. Bio. 2009, 5, 80-81*
11. Hughes, C. C.; Prieto-Davo, A.; Jensen, P. R.; Fenical, W. The marinopyrroles, antibiotics of an unprecedented structure class from a marine *Streptomyces* sp. *Org. Lett.* **2008**, *10*, 629-631  
*Featured in "Bispyrrole Antibiotics from the Deep." Halford, B. C&E News 2008, 86, 57 and "Naturstoffe." Lindel, T. Nachr. Chem. 2009, 57, 252-277*
10. Miller, A. K.; Hughes, C. C.; Kennedy-Smith, J. J.; Gradl, S. N.; Trauner, D. The total synthesis of (-)-heptemerone B and (-)-guanacastepene E. *J. Am. Chem. Soc.* **2006**, *128*, 17057-17062
9. Endicott, C. A.; Strauss, H. L.; Hughes, C. C.; Trauner, D. Infrared hole burning and conformational change in a borane-ammonia complex. *J. Phys. Chem. A* **2005**, *109*, 7714-7717
8. Bowie, A. L., Jr.; Hughes, C. C.; Trauner, D. Concise synthesis of (±)-rhazinilam through direct coupling. *Org. Lett.* **2005**, *7*, 5207-5209
7. Hughes, C. C.; Miller, A. K.; Trauner, D. An electrochemical approach to the guanacastepene skeleton. *Org. Lett.* **2005**, *7*, 3425-3428
6. Hughes, C. C.; Trauner, D. Palladium-catalyzed couplings to nucleophilic heteroarenes: the total synthesis of (-)-frondosin B. *Tetrahedron* **2004**, *60*, 9675-9686
5. Hughes, C. C.; Kennedy-Smith, J. J.; Trauner, D. Synthetic studies toward the guanacastepenes. *Org. Lett.* **2003**, *5*, 4113-4115
4. Hughes, C. C.; Scharn, D.; Mulzer, J.; Trauner, D. Borane-ammonia complexes stabilized by hydrogen bonding. *Org. Lett.* **2002**, *4*, 4109-4111
3. Hughes, C. C.; Trauner, D. The total synthesis of (-)-amathaspiramide F. *Angew. Chem. Int. Ed.* **2002**, *41*, 4556-4559
2. Hughes, C. C.; Trauner, D. Concise total synthesis of (-)-frondosin B using a novel palladium catalyzed cyclization. *Angew. Chem. Int. Ed.* **2002**, *41*, 1569-1572
1. Johnson, D. K.; Schillinger, K. J.; Kwait, D. M.; Hughes, C. C.; McNamara, E. J.; Ishmael, F.; O'Donnell, R. W.; Chang, M.-M.; Hogg, M. G.; Dordick, J. S.; Santhanam, L.; Ziegler, L. M.; Holland, J. A. Inhibition of NADPH oxidase activation in endothelial cells by ortho-methoxy-substituted catechols. *Endothelium* **2002**, *9*, 191-203

## REVIEWS

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1. Hughes, C. C.; Fenical, W. Antibacterials from the sea. *Chem. Eur. J.* **2010**, *16*, 12512-12525

## PATENTS

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1. Fenical, W.; Jensen, P. R.; MacMillan, J. B.; Hughes, C. C.; La Clair, J. J. Ammosamides as anticancer agents. PCT/US2008/068615