

## CURRICULUM VITAE

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### EDUCATION

1990 B.S., Chemistry, University of North Carolina, Chapel Hill, NC  
1994 Ph.D., Biochemistry, University of Washington, Seattle, WA

### EMPLOYMENT

1991-1992 Teaching Assistant, University of Washington, Seattle, WA  
1994-1996 PostDoc, Institute for Enzyme Research, U. of Wisconsin-Madison, Madison, Wis.  
1996-1997 IRTA Fellow, NIEHS (NIH), RTP, NC  
1997-2001 Research Fellow, NIEHS (NIH), RTP, NC  
2001-present Staff Scientist, Co-Director of Structural Biology Core, Head of Structure Function Group, NIEHS (NIH), RTP, NC

### INVITED PRESENTATIONS:

1998 Department of Biochemistry and Biophysics, University of North Carolina  
1998 Department of Biochemistry Research Seminar, Oklahoma Medical Research Foundation  
2001 Kobe Pharmaceutical University, Japan.  
2001 Osaka University, Japan.  
2001 X<sup>th</sup> International Workshop on Glucuronidation and the UDP-Glucuronosyltransferases, Japan  
2001 Department of Pharmacy, University of North Carolina  
2002 Department of Biochemistry, St. Louis University  
2005 Biochemistry Seminar Series, North Carolina State University  
2005 Biophysics Form, University of North Carolina  
2006 Department of Biochemistry, University of Washington  
2007 Japanese Society of Carbohydrate Research, Fukuoka, Japan  
2008 Nebraska Research and Innovation Conference, Lincoln, Nebraska  
2011 EAL:Proteoglycans:Health, Disease and Therapeutics, Nancy, France  
2011 Current Opinion Conference: Structural Biology and DNA Repair, Amsterdam, Netherlands  
2013 American Chemical Society Meeting: CARB section, New Orleans  
2013 University of North Carolina Career Blitz, University of North Carolina

2013 Division of Medicinal and Natural Products Chemistry, University of Iowa  
2014 Proteoglycans Gordon Conference, Andover New Hampshire  
2014 12<sup>th</sup> International Symposium on Cytochrome P450, Kyoto Japan  
2014 Pharmacogenetics Seminar Series, NIEHS  
2016 University of Cincinnati, Dept. of Molecular Genetics Seminar Series, Cincinnati, Ohio  
2017 University of South Carolina, Dept. of Chemistry and Biochemistry, Columbia, South Carolina  
2019 Inserm Workshop Glycosaminoglycan (GAG) biology, Bordeaux, France

Articles in peer-reviewed journals:

1. **PEDERSEN LC**, Yee VC, Bishop PD, Le Trong I, Teller DC, Stenkamp RE. Transglutaminase factor XIII uses proteinase-like catalytic triad to crosslink macromolecules. *Protein science : a publication of the Protein Society*. 1994;3(7):1131-5. Epub 1994/07/01. doi: 10.1002/pro.5560030720. PubMed PMID: 7920263; PMCID: PMC2142901.
2. **PEDERSEN LC**, Yee VC, von Dassow G, Hazeghazam M, Reeck GR, Stenkamp RE, Teller DC. The corn inhibitor of blood coagulation factor XIIa. Crystallization and preliminary crystallographic analysis. *Journal of molecular biology*. 1994;236(1):385-7. Epub 1994/02/11. doi: 10.1006/jmbi.1994.1147. PubMed PMID: 8107123.
3. Yee VC, **PEDERSEN LC**, Le Trong I, Bishop PD, Stenkamp RE, Teller DC. Three-dimensional structure of a transglutaminase: human blood coagulation factor XIII. *Proceedings of the National Academy of Sciences of the United States of America*. 1994;91(15):7296-300. Epub 1994/07/19. PubMed PMID: 7913750; PMCID: PMC44386.
4. **PEDERSEN LC**, Benning MM, Holden HM. Structural investigation of the antibiotic and ATP-binding sites in kanamycin nucleotidyltransferase. *Biochemistry*. 1995;34(41):13305-11. Epub 1995/10/17. PubMed PMID: 7577914.
5. Yee VC, **PEDERSEN LC**, Bishop PD, Stenkamp RE, Teller DC. Structural evidence that the activation peptide is not released upon thrombin cleavage of factor XIII. *Thrombosis research*. 1995;78(5):389-97. Epub 1995/06/01. PubMed PMID: 7660355.
6. Kakuta Y, Pedersen LG, Carter CW, Negishi M, **PEDERSEN LC**. Crystal structure of estrogen sulphotransferase. *Nature structural biology*. 1997;4(11):904-8. Epub 1997/11/14. PubMed PMID: 9360604.
7. Behnke CA, Yee VC, Trong IL, **PEDERSEN LC**, Stenkamp RE, Kim SS, Reeck GR, Teller DC. Structural determinants of the bifunctional corn Hageman factor inhibitor: x-ray crystal structure at 1.95 Å resolution. *Biochemistry*. 1998;37(44):15277-88. Epub 1998/11/04. doi: 10.1021/bi9812266. PubMed PMID: 9799488.
8. Kakuta Y, **PEDERSEN LC**, Chae K, Song WC, Leblanc D, London R, Carter CW, Negishi M. Mouse steroid sulfotransferases: substrate specificity and preliminary X-ray crystallographic analysis. *Biochemical pharmacology*. 1998;55(3):313-7. Epub 1998/03/04. PubMed PMID: 9484797.
9. Kakuta Y, Pedersen LG, **PEDERSEN LC**, Negishi M. Conserved structural motifs in the sulfotransferase family. *Trends in biochemical sciences*. 1998;23(4):129-30. Epub 1998/05/19. PubMed PMID: 9584614.
10. Kakuta Y, Petrotchenko EV, **PEDERSEN LC**, Negishi M. The sulfuryl transfer mechanism. Crystal structure of a vanadate complex of estrogen sulfotransferase and mutational analysis. *The Journal of biological chemistry*. 1998;273(42):27325-30. Epub 1998/10/09. PubMed PMID: 9765259.
11. Sueyoshi T, Kakuta Y, **PEDERSEN LC**, Wall FE, Pedersen LG, Negishi M. A role of Lys614 in the sulfotransferase activity of human heparan sulfate N-deacetylase/N-sulfotransferase. *FEBS letters*. 1998;433(3):211-4. Epub 1998/09/23. PubMed PMID: 9744796.
12. Bartolotti L, Kakuta Y, Pedersen L, Negishi M, Pedersen L. A quantum mechanical study of the transfer of biological sulfate. *J Mol Struct-Theochem*. 1999;461:105-11. doi: Doi 10.1016/S0166-

1280(98)00424-2. PubMed PMID: WOS:000079265300011.

13. Fox BA, Yee VC, **PEDERSEN LC**, Le Trong I, Bishop PD, Stenkamp RE, Teller DC. Identification of the calcium binding site and a novel ytterbium site in blood coagulation factor XIII by x-ray crystallography. *The Journal of biological chemistry*. 1999;274(8):4917-23. Epub 1999/02/13. PubMed PMID: 9988734.

14. Kakuta Y, Sueyoshi T, Negishi M, **PEDERSEN LC**. Crystal structure of the sulfotransferase domain of human heparan sulfate N-deacetylase/ N-sulfotransferase 1. *The Journal of biological chemistry*. 1999;274(16):10673-6. Epub 1999/04/10. PubMed PMID: 10196134.

15. Marsolais F, Laviolette M, Kakuta Y, Negishi M, **PEDERSEN LC**, Auger M, Varin L. 3'-Phosphoadenosine 5'-phosphosulfate binding site of flavonol 3-sulfotransferase studied by affinity chromatography and <sup>31</sup>P NMR. *Biochemistry*. 1999;38(13):4066-71. Epub 1999/04/09. doi: 10.1021/bi982239m. PubMed PMID: 10194320.

16. Ong E, Yeh JC, Ding Y, Hindsgaul O, **PEDERSEN LC**, Negishi M, Fukuda M. Structure and function of HNK-1 sulfotransferase. Identification of donor and acceptor binding sites by site-directed mutagenesis. *The Journal of biological chemistry*. 1999;274(36):25608-12. Epub 1999/08/28. PubMed PMID: 10464296.

17. Petrotchenko EV, Doerflein ME, Kakuta Y, **PEDERSEN LC**, Negishi M. Substrate gating confers steroid specificity to estrogen sulfotransferase. *The Journal of biological chemistry*. 1999;274(42):30019-22. Epub 1999/10/09. PubMed PMID: 10514486.

18. Gorokhov A, Perera L, Darden TA, Negishi M, **PEDERSEN LC**, Pedersen LG. Heparan sulfate biosynthesis: a theoretical study of the initial sulfation step by N-deacetylase/N-sulfotransferase. *Biophysical journal*. 2000;79(6):2909-17. Epub 2000/12/07. doi: 10.1016/s0006-3495(00)76528-3. PubMed PMID: 11106599; PMCID: PMC1301170.

19. King RS, Sharma V, **PEDERSEN LC**, Kakuta Y, Negishi M, Duffel MW. Structure-function modeling of the interactions of N-alkyl-N-hydroxyanilines with rat hepatic aryl sulfotransferase IV. *Chemical research in toxicology*. 2000;13(12):1251-8. Epub 2000/12/22. PubMed PMID: 11123966.

20. **PEDERSEN LC**, Petrotchenko EV, Negishi M. Crystal structure of SULT2A3, human hydroxysteroid sulfotransferase. *FEBS letters*. 2000;475(1):61-4. Epub 2000/06/16. PubMed PMID: 10854859.

21. **PEDERSEN LC**, Tsuchida K, Kitagawa H, Sugahara K, Darden TA, Negishi M. Heparan/chondroitin sulfate biosynthesis. Structure and mechanism of human glucuronyltransferase I. *The Journal of biological chemistry*. 2000;275(44):34580-5. Epub 2000/08/18. doi: 10.1074/jbc.M007399200. PubMed PMID: 10946001.

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25. Gorokhov A, Negishi M, Johnson EF, **PEDERSEN LC**, Perera L, Darden TA, Pedersen LG. Explicit water near the catalytic I helix Thr in the predicted solution structure of CYP2A4. *Biophysical journal*. 2003;84(1):57-68. Epub 2003/01/14. doi: 10.1016/s0006-3495(03)74832-2. PubMed PMID: 12524265; PMCID: PMC1302593.

26. Inoue K, Sobhany M, Transue TR, Oguma K, **PEDERSEN LC**, Negishi M. Structural analysis by X-ray crystallography and calorimetry of a haemagglutinin component (HA1) of the progenitor toxin from *Clostridium botulinum*. *Microbiology (Reading, England)*. 2003;149(Pt 12):3361-70. Epub

2003/12/10. doi: 10.1099/mic.0.26586-0. PubMed PMID: 14663070.

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34. Moon AF, Edavettal SC, Krahn JM, Munoz EM, Negishi M, Linhardt RJ, Liu J, **PEDERSEN LC**. Structural analysis of the sulfotransferase (3-o-sulfotransferase isoform 3) involved in the biosynthesis of an entry receptor for herpes simplex virus 1. *The Journal of biological chemistry*. 2004;279(43):45185-93. Epub 2004/08/12. doi: 10.1074/jbc.M405013200. PubMed PMID: 15304505; PMCID: PMC4114238.

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biological chemistry. 2005;280(30):27990-7. Epub 2005/05/18. doi: 10.1074/jbc.M501798200. PubMed PMID: 15897201.

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43. Batra VK, Shock DD, Prasad R, Beard WA, Hou EW, **PEDERSEN LC**, Sayer JM, Yagi H, Kumar S, Jerina DM, Wilson SH. Structure of DNA polymerase beta with a benzo[c]phenanthrene diol epoxide-adducted template exhibits mutagenic features. Proceedings of the National Academy of Sciences of the United States of America. 2006;103(46):17231-6. Epub 2006/11/03. doi: 10.1073/pnas.0605069103. PubMed PMID: 17079493; PMCID: PMC1630674.

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46. Lin P, **PEDERSEN LC**, Batra VK, Beard WA, Wilson SH, Pedersen LG. Energy analysis of chemistry for correct insertion by DNA polymerase beta. Proceedings of the National Academy of Sciences of the United States of America. 2006;103(36):13294-9. Epub 2006/08/30. doi: 10.1073/pnas.0606006103. PubMed PMID: 16938895; PMCID: PMC1569157.

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51. Moon AF, Garcia-Diaz M, Bebenek K, Davis BJ, Zhong X, Ramsden DA, Kunkel TA, **PEDERSEN LC**. Structural insight into the substrate specificity of DNA Polymerase mu. Nature structural & molecular biology. 2007;14(1):45-53. Epub 2006/12/13. doi: 10.1038/nsmb1180. PubMed PMID: 17159995.

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the catalytic mechanism of DNA polymerase beta. *Biochemistry*. 2007;46(2):461-71. Epub 2007/01/11. doi: 10.1021/bi061517b. PubMed PMID: 17209556.

53. Xu D, Song D, **PEDERSEN LC**, Liu J. Mutational study of heparan sulfate 2-O-sulfotransferase and chondroitin sulfate 2-O-sulfotransferase. *The Journal of biological chemistry*. 2007;282(11):8356-67. Epub 2007/01/18. doi: 10.1074/jbc.M608062200. PubMed PMID: 17227754.

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