

Andreas H. Franz (Professor)

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1) Goals and Objectives

My primary scientific goal is to gain detailed insight into the role that carbohydrates and carbohydrate mimetics play in biological systems. I am interested in the synthesis and spectroscopic characterization of carbohydrate derivatives, post-translational modifications of proteins, and non-covalent host-guest complexes.

2) Qualifications

- 14 years of continuous university-level teaching (Organic chemistry I+II 2002-2015, Adv. Organic Chemistry 2003 + 2011, Instrumental Analysis 2004-2008, Adv. NMR-Spectroscopy 07 09 11, 13 , Organic chemistry workshops since 2003 20-25 leaders, ~200 students/semester)
- Supervisor for graduate/undergraduate research, development of suitable projects (synthetic/analytical carbohydrate chemistry).
- Strong instrumental background in analytical chemistry (incl. FT-NMR, FT-ICR-MS).
- Strong background in chemistry with major in synthetic organic chemistry (special topic: Carbohydrate mimetics).

3) Education/Positions

- Co-Chair of the department of chemistry (personnel + budget), UOP (fall 2011-present)
- Director of Graduate Research (Chemistry) (spring 2011-present)
- Professor UOP (spring 2013-present)
- Associate professor UOP (spring 2008-spring 2013)
- Assistant professor UOP (fall 2002-fall 2007)
- Postdoctoral fellow UC Davis (Fall 2000-2002):C. g0 reW 612 792 reW* nBT/F1 11.04 Tf1 0 0 1 183.5 374.

5) **Professional Activities**

1. Served on Pacific Safety Committee (**spring 2012**-present)
2. Sabbatical, Moscow State University, Russia (**spring 2010**)
3. Manager of 600 MHz NMR-facility at Pacific (**fall 2008**-present)
4. Panel member National Science Foundation, Washington DC (**October 2007 + 2009**)
5. Editorial board of reviewers (ARKIVOC, online, **fall 2006-present**)
6. Ad hoc reviewer for *Carbohydr. Res.*,

Patrick; Samoshina, Nataliya M.; Samoshin, Vyacheslav V., *ARKIVOC* (2014), (5), 16-41, doi: <http://dx.doi.org/10.3998/ark.5550190.p008.671>

18. Brunnée, Curt Andreas H. Franz*,

- National Meeting & Exposition, Anaheim, CA, United States, March 27-31, **2011** (2011), ORGN-425.
12. pH-Sensitive liposomes with new trans-2-aminocyclohexanol-based amphiphiles as conformational switches for the liposome membrane, Samoshina, Nataliya M.; Liu, Xin; Zheng, Yu; Franz, Andreas H.; Guo, Xin; Samoshin, Vyacheslav V., From Abstracts of Papers, 241st ACS National Meeting & Exposition, Anaheim, CA, United States, March 27-31, **2011** (2011), COLL-245
 13. Design of biocompatible pH-sensitive liposomes for drug and gene delivery, Guo, Xin; Samoshina, Nataliya M.; Chen, Haigang; Brazdova, Barbora; Franz, Andreas H.; Zhang, Huizhen; Szoka, Francis C.; Samoshin, Vyacheslav V., From Abstracts of Papers, 239th ACS National Meeting, San Francisco, CA, United States, March 21-25, **2010** (2010), COLL-315 (ORAL).
 14. N-linked Oligosaccharides Characterization of Glycoprotein of Aggregate Gland from Black Widow Spider, *Latrodectus Hesperus* Liang Zhao, Felicia Jeffery, Fan Xiang, Craig Vierra, Andreas H. Franz* Annual Conference of the Society for Glycobiology November 7 - 10, **2010** TradeWinds Island Grand Resort, St. Pete Beach, FL
 15. Progress in the Characterization of Glycosylation Microheterogeneity in *Xenopus laevis* Vitelline Envelope Glycoprotein ZPA Liang Zhao, Fan Xiang, Jerry L. Hedrick, Andreas H. Franz American Society for Mass Spectrometry 58th ASMS Conference, May 23 - 27, **2010** Salt Palace Convention Center, Salt Lake City, Utah
 16. Analysis of N-linked Oligosaccharides from *Xenopus laevis* Vitelline Envelope Glycoprotein ZPA by Mass Spectrometry, Liang Zhao, Fan Xiang, Jerry L. Hedrick, Andreas H. Franz, Department of Chemistry, University of the Pacific, 3601 Pacific Avenue, Stockton, CA 95211, Shimadzu Biotech. Corporation, 7060 Koll Center Parkway, Suite 328, Pleasanton, CA, 94566, Department of Animal Science, University of California Davis, One Shields Avenue, Davis, CA 95616, Poster at the National Meeting of the American Chemical Society, San Francisco, **March 2010**
 17. Arylsulfanyl-alkyl alcohols as chiral auxiliaries, Andrey V. Samoshin, Andreas H. Franz, Vyacheslav V. Samoshin, Poster at the National Meeting of the American Chemical Society, San Francisco, **March 2010**
 18. Solution Geometry and Long-Range Coupling in Carbohydrate Mimetics from Glycal Dimerization, Andreas H. Franz*, Poster at the National Meeting of the American Chemical Society (also accepted as part of opening Sci-Mix), San Francisco, **March 2010**
 19. *Trans*-2-Aminocyclohexanol-based lipids as pH-sensitive conformational switches for the PEG-grafted liposomes, Samoshina, Nataliya M.; Guo, Xin; Brazdova, Barbora; Zheng, Yu; Liu, Xin; Franz, Andreas H.; Samoshin, Vyacheslav V., From Abstracts of Papers, 239th ACS National Meeting, San Francisco, CA, United States, March 21-25, **2010** (2010), MEDI-455.
 20. Michael, Katja; Hogenauer, Tyrone; Cai, Zhefeng; Kaneshiro, Clyde M.; Dirk, Carl; Franz, Andreas H. New Methods for the Synthesis of Peptides and Glycopeptides. Abstracts, 65th Southwest Regional Meeting of the American Chemical Society, El Paso, TX, United States, November 4-7 (**2009**)

22. Triggering Stealth Liposomes by pH-Sensitive Conformational Switch of Lipid Tails, Xin Guo, Nataliya Samoshina, Vyacheslav V. Samoshin, and Andreas Franz. Poster at the Meeting of the American Association for Pharmaceutics (AAPS) **2009**.
23. Mass Spectrometric Analysis of Proteolytic Products from MBP-Containing Heterologous Proteins Expressed in *Pichia pastoris*, Zhiguo Li; Wilson Leung; Joan Lin-Cereghino; Geoffrey Lin-Cereghino; Fan Xiang; Andreas Franz, Department of Chemistry, University of the Pacific, 3601 Pacific Avenue, Stockton, CA; Department of Biology, University of the Pacific, 3601 Pacific Avenue, Stockton, CA; Shimadzu Biotech. Corporation, 7060 Koll Center Parkway, Suite 328, Pleasanton, CA, 94566, 57th ASMS Conference **2009**, Philadelphia, PA
24. Structure Elucidation of Disulfide Bonds in a Rhamnose-Binding Lectin from Salmon Eggs, Liang Zhao, Ruben T. Almaraz, Fan Xiang, Jerry L. Hedrick, Andreas H. Franz, Department of Chemistry, University of the Pacific, 3601 Pacific Avenue, Stockton, CA 95211, Department of Animal Science, University of California Davis, One Shields Avenue, Davis, CA 95616, Shimadzu Biotech. Corporation, 7060 Koll Center Parkway,

34. The Unusual Chemical Structure of a Carbohydrate-Quinic Acid Compound, Quy Lam Nguyen, Andreas H. Franz*, Poster at the 232nd National ACS meeting, San Francisco, CA, September **2006**.
35. Structural determination of the *N*- and *C*-terminus in *gp41*, the predominant glycoprotein in the vitelline envelope of *Xenopus laevis* eggs, Haiqiang Yu, Ruben Almaraz, Jerry Hedrick, Andreas H. Franz*, Poster at the 54th ASMS Conference, Seattle, WA, June **2006**.
36. Synthesis and Analytical Evaluation of New Oligosaccharide Tags,

50. Non-Covalent Calixarene-Amino Acid Inclusion Complexes in the Gas-Phase, Andreas H. Franz, Carlito B. Lebrilla,* University of California Davis, Oral presentation at the Ion Spectrometry Meeting, Lake Arrowhead, CA, January **2002**.
51. Intrinsic Alkali Metal Ion Affinities of Calixarenes, Andreas H. Franz, Carlito B.

Hassan Shallal (Ph. D., March 2011)
Smita Matkar (Ph. D., spring 2008)
Barbora Brazdova (Ph. D., Oct. 2006)
Urja Narayan (M. S., Nov. 2005)
Jing Yuan (Ph. D., Sept. 2005)
Eric Chen (M. S., July 2005)
Xiaoyi (Tiger) Hu (Ph. D., Oct. 2004)
David Hawke (Ph. D., Oct. 2004)

14) Funded research

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Characterization, synthesis and structural study the glycosidic linkage of glycosidic polyphenols and related molecules