

PENG WU, PH.D.

The Scripps Research Institute
Department of Molecular Medicine
10550 N. Torrey Pines Road, MB-208
La Jolla, CA 92037

Phone: (858) 784-7626
E-mail: pengwu@scripps.edu

Web: <http://www.scripps.edu/pwu>

ACADEMIC APPOINTMENT:

2021–present Professor, Department of Molecular Medicine, The Scripps Research Institute
2015–2021 Associate Professor, Department of Molecular Medicine, The Scripps Research Institute
2013–2015 Associate Professor, Department of Biochemistry, Albert Einstein College of Medicine, Yeshiva University
2011–2015 Scientific Director, Chemical Biology Core Facility, Albert Einstein College of Medicine, Yeshiva University
2009–2013 Assistant Professor, Department of Biochemistry, Albert Einstein College of Medicine, Yeshiva University
2008–2009 Instructor, Department of Biochemistry, Albert Einstein College of Medicine, Yeshiva University

EDUCATION & TRAINING:

2005–2008 Postdoctoral Associate, Department of Chemistry, Univ. of California at Berkeley
Advisor: Professor Carolyn R. Bertozzi
2004 Visiting Student, Univ. of California at Santa Barbara
Advisor: Professor Craig Hawker
2001–2005 Ph.D. in Chemistry, The Scripps Research Institute, La Jolla, CA
Advisor: Professor K. Barry Sharpless (Degree conferred May 2006)
1999–2001 M.S. in Chemistry, Department of Chemistry, Indiana University, Bloomington, IN
Advisor: Professor Kenneth G. Caulton
1995–1999 B.S. in Chemistry, Department of Chemistry, Peking University, Beijing, P.R. China

AWARDS:

2021 Glycobiology Significant Achievement Award, the Society for Glycobiology
2021 Horizon Prize (Robert Robinson Award in Synthetic Organic Chemistry), the Royal Society of Chemistry (with the teams of K. Barry Sharpless, Jeff Kelly, John Moses, Jianmei Lu, Dennis Wolan, Bruce Hammock and Han Zuilhof)
2020 Horace S. Isbell Award, Division of Carbohydrate Chemistry, American Chemical Society
2015 Chinese-American Chemistry and Chemical Biology Professors Association Biomatik Distinguished Faculty Award
2014 Kavli Fellow
2013 David Y. Gin Young Investigator Award, Division of Carbohydrate Chemistry, American Chemical Society
2013 Visiting Fellowship, Pembroke College, University of Oxford, UK
2011 DuPont Young Professor Award
2007 NIH Pathway to Independence Award
2007 MBL Pioneers Scholarship and Herbert W. Rand Fellowship
2006 Howard Hughes Medical Institute Postdoctoral Fellow
2003 Scripps Graduate Student Retreat Award

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2002 Skaggs Predoctoral Fellowship

SERVICES AND PROFESSIONAL MEMBERSHIP:

2021–present Editorial board member, Glycobiology (Oxford Press)

2018–present Member, Faculty Opinions (F1000Prime)

2018 2018 Society for Glycobiology Annual Meeting Program Committee Member, and “Glygoengineering and glyco-synthetic tools” Session Chair

2016 Ad Hoc Member, Synthetic and Biological Chemistry A (SBCA) Study Section, NIH

2016 Member, Carbohydrate Synthesis RFA: ZRG1 BCMB U 50 Special Emphasis Panel, NIH

2016 Organizer, Click Chemistry in Carbohydrate, Materials Science & Biomedicine Symposium, 251st ACS National Meeting, San Diego, CA

2015 Editorial Board Member, The Pharmaceutical Index

2015 Co-Editor (with Prof. Boons) for the Chemical Glycobiology special issue of Glycobiology

2014 Co-Organizer for the Click Chemistry in Biology and Medicine Symposium, New York Academy of Sciences

2012 Co-Editor (with Prof. Bertozzi) for the In Vivo Chemistry section of Current Opinion in Chemical Biology volume 17, issue 5

2011 Co-Chair for the Glycobiology general paper section, 241st ACS National Meeting, Anaheim, CA, 03/2011

2010 Ad Hoc Member, Synthetic and Biological Chemistry A (SBCA) Study Section, NIH

2003–present Member, American Chemical Society

PUBLICATIONS:

77. Modulation of Siglec-7 Signaling via in situ Created High-affinity cis-Ligands. Hong, S.; Yu, C.; Shi, Y.; Wang, P.; Chapla, D.G.; Rodrigues, E.; Moremen, K.W.; Paulson, J.C.; Macauley, M.S.; Wu, P. *ACS Cent. Sci.* **2021**, *7*, 1338.
76. SuFExable Polymers with Helical Structures Derived from Thionyl Tetrafluoride (SO_F₄). Li, S.; Li, G.; Gao, B.; Pujari, S. P.; Chen, X.; Kim, H.; Zhou, F.; Klivansky, L. M.; Liu, Y.; Driss, H.; Impey, R. E.; Soares da Costa, T. P.; Lu, J.; Wu, P.; Zuilhof, H.; Moses, J. E.; Sharpless, K. B. *Nat. Chem.* doi: 10.1038/s41557-021-00726-x.
75. Click Chemistry Expedited Radiosynthesis: Sulfur [18F]fluoride Exchange of Aryl Fluorosulfates. Zheng, Q.; Xu, H.; Wang, H.; Du, W.; Wang, N.; Xiong, H.; Gu, Y.; Noodleman, L.; Yang, G.; Sharpless, K. B.; Wu, P. *J. Am. Chem. Soc.* **2021**, DOI: 10.1021/jacs.0c09306.
 - Highlighted in *C&En News*: “Fluoride-swapping reaction offers speedy way to make radiochemicals”, **2021**, 99, <https://cen.acs.org/synthesis/radiochemistry/Fluoride-swapping-reaction-offers-speedy/99/web/2021/03>
 - Highlighted in *Nat. Chem. News & Views*: “Fast fixation of fluorine”, **2021** <https://www.nature.com/articles/s41557-021-00682-6>
74. Glycoengineering of NK cells with Glycan Ligands of CD22 and Selectins for B-cell Lymphoma Therapy. Hong, S.; Yu, C.; Wang, P.; Shi, Y.; Cheng, B.; Chen, M.; Chapla, D.G.; Reigh, N.; Narimatsu, Y.; Chen, X.; Clausen, H.; Moremen, K.W.; Macauley, M.S.; Paulson, J.C.; Wu, P. *Angew. Chem. Int. Ed.* **2021**, *60*, 3603.
- 73.* Detecting Tumor Antigen-specific T cells via Interaction Dependent Fucosyl-biotinylation. Liu, Z.; Li, J.P.; Chen, M.; Wu, M.; Shi, Y.; Li, W.; Teijaro, J.R.; Wu, P. *Cell*, **2020**, *183*, 1117. <https://doi.org/10.1016/j.cell.2020.09.048>
 - *Cell Preview*: Some Like It Sweet: Dendritic Cells Add Sugar to Their T(ea), **2020**, *183*, 847.
 - Highlighted in *C&En News* “Targeting tumor-specific T cells”, **2020**, 98 (41), <https://cen.acs.org/biological-chemistry/cancer/Targeting-tumor-specific-T-cells/98/i41>

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- Accelerating Cancer Immunotherapy Research (ACIR) Spotlight, <https://acir.org/journal-articles/innovative-methods/metabolism?entryId=26859>
 - *Methods in Brief*, a selection of recently published methods papers curated by *Nature Methods* editors (11/2020). <https://protocolsmethods.springernature.com/posts/methods-in-brief>
 - *Faculty Opinion* recommended (<https://facultyopinions.com/prime/738877425>)
72. hFUT1-based Live Cell Assay to Profile α 1-2-fucosides enhanced Influenza A Virus Infection. Hong, S.; Grandy, G.; Yu, C.; Chapla, D. G.; Reigh, N.; Yang, Y.; Izumori, K.; Moremen, K. W.; Xie, J.; Wu, P. *ACS Chem. Biol.* **2020**, *15*, 819.
71. In Situ Fucosylation of the Wnt Co-receptor LRP6 Increases Its Endocytosis and Reduces Wnt/ β -Catenin Signaling Hong, S.; Feng, L.; Jiang, H.; Hou, X.; Guo, P.; Marlow, F. L.; Stanley, P.; Wu, P. *Cell. Chem. Biol.* **2020**, *27*, 1140.
- *Cell Chem. Biol. Preview: For Wnt Signaling, Fucosylation of LRP6 Is a Bitter Pill*, **2020**, *27*, 1114.
- 70.* Direct Visualization of Live Zebrafish Glycan via Single-step Metabolic Labeling with Fluorophore-tagged Nucleotide Sugars. Hong, S.; Sahai-Hernandez, P.; Chapla, D.G.; Moremen, K.W.; Traver, D.; Wu, P. *Angew. Chem. Int. Ed.* **2019**, *58*, 14327.
- Covered in *Nature*: <https://www.nature.com/articles/d41586-020-00769-z>
69. Biocompatible SuFEx Click Chemistry: Thionyl Tetrafluoride (SO_F₄)-Derived Connective Hubs for Bioconjugation to DNA and Proteins. Liu, F.; Wang, H.; Li, S.; Bare, GAL.; Chen, X.; Wang, C.; Moses, J.E.; Wu, P.; Sharpless, K.B. *Angew. Chem. Int. Ed.* **2019**, *58*, 8029.
68. Stage-Specific and Selective Delivery of Caged Azidosugars into the Intracellular Parasite *Toxoplasma gondii* by Using an Esterase-Ester Pair Technique. Tomita, T.; Wang, H.; Wu, P.; Weiss, L.M. *mSphere*. **2019**, *4*, pii: e00142-19.
67. Bacterial Glycosyltransferase-mediated Cell-surface Chemoenzymatic Glycan Modification. Hong, S.; Shi, Y.; Wu, N. C.; Grande, G.; Douthit, L.; Wang, H.; Zhou, W.; Sharpless, K. B.; Wilson, I. A.; Xie, J.; Wu, P. *Nat. Commun.* **2019**, *10*, 1799.
66. Novel Approaches to Access Arylfluorosulfates and Sulfamoyl Fluorides Based on Sulfur (VI) Fluoride Exchange. Liu, Z.; Meng, G.; Guo, T.; Dong, J.; Wu, P. *Curr. Protoc. Chem. Bio.* **2019**, e64, doi: 10.1002/cpch.64.
65. Cryo-EM structure of L-fucokinase/GDP-fucose pyrophosphorylase (FKP) in *Bacteroides fragilis*. Liu, Y.; Hu, H.; Wang, J.; Zhou, Q.; Wu, P.; Yan, N.; Wang, H.-W.; Wu, J.-W.; Sun, L. *Protein Cell.* **2019**, *10*, 365.
- 64.* Single-step Enzymatic Glycoengineering for the Construction of Antibody-cell Conjugates. Li, J.; Chen, M.; Liu, Z.; Zhang, L.; Felding, B.H.; Moremen K.W.; Lauvau, G.; Abadier, M.; Ley, K.; Wu, P. *ACS Cent Sci.* **2018**, *4*, 1633-1641.
- Highlighted in *C&En News*: "Sugar-transferring enzyme adds antibody to cell surface", **2018**, 96 (49), 8.
63. Antibody Selection Using Clonal Co-cultivation of *E. coli* and Eukaryotic Cells in Mini-ecosystems. Zheng, T.; Xie, J. Yang, Z. Tao, P.; Shi, B.; Douthit, L.; Wu, P.; Lerner, R. A. *Proc. Natl. Acad. Sci. USA.* **2018**, *115*, E6145.
62. Sialyltransferase-based Chemoenzymatic Histology for the Detection of N- and O-glycans.

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Aguilar Lopez, A.; Meng, L.; Hou, X.; Li, W.; Moremen, K.W.; Wu, P. *Bioconj. Chem.* **2018**, *29*, 1231-1239.

61. * Cell-Based Glycan Arrays for Probing Glycan–Glycan Binding Protein Interactions. Briard, J.G., Jiang, H., Moremen, K.W., Macauley, M.S., Wu, P. *Nat. Commun.* **2018**, *9*, 880. DOI: 10.1038/s41467-018-03245-5.
- Highlighted in *C&En News*: "Glycan arrays created with live cells", **2018**, *96 (11)*, 14.
60. SuFEx Click Chemistry Enabled Late-Stage Drug Functionalization. Liu, Z.; Li, J.; Li, S.; Sharpless, K. B.; Wu, P. *J. Am. Chem. Soc.* **2018**, *140*, 2919.
59. Engineered glycocalyx regulates stem cell proliferation in murine crypt organoids. Rouhanifard, S.H.; Aguilar Lopez, A.; Meng, L.; Moremen, K.W.; Wu, P. *Cell. Chem. Bio.* **2018**, *25*, 439.
58. Modulating cell-surface receptor signaling and ion channel functions by *in situ* glycan editing. Jiang, H.; Meng, L.; Lopez-Aguilar, A.; Gao, Z.; Liu, Y.; Tian, X.; Yu, G.; Ovrzyn, B.; Moremen, K.W.; Wu, P. *Angew. Chem. Int. Ed.* **2018**, *57*, 967.
57. Inhibition of Delta-induced Notch Signaling Using Fucose Analogs. Schneider, M.; Kumar, V.; Nordstrøm, L.; Feng, L.; Takeuchi, H.; Stanley, P.; Wu, P.*; Haltiwanger, R. S.* *Nat. Chem. Biol.* **2018**, *14*, 65, (*co-corresponding authors).
56. Profiling of Protein O-GlcNAcylation in Murine CD8+ Effector- and Memory-like T Cells. Lopez Aguilar, A.; Gao, Y.; Hou, X.; Lauvau, G.; Yates, J.R.; Wu, P. *ACS Chem. Biol.* **2017**, *12*, 3031.
55. A Chemoenzymatic Histology Method for O-GlcNAc Detection. Lopez Aguilar, A.; Hou, X.; Wen, L.; Wang, P.G.; Wu, P. *Chembiochem.* **2017**, *18*, 2416.
54. Visualizing Glycans on Single Cells and Tissues. Ovrzyn, B.; Hong, S.; Li, J.; Wu, P. *Curr. Opin. Chem. Biol.* **2017**, *39*, 39.
53. Bifluoride-catalyzed Sulfur(VI) Fluoride Exchange (SuFEx) Reaction for the Synthesis of Polysulfates and Polysulfonates. Gao, B.; Zhang, L.; Zheng, Q.; Zhou, F.; Klivansky, L. M.; Lu, J.; Liu, Y.; Dong J.*; Wu, P.*; Sharpless, K. B.* *Nat. Chem.* **2017**, *9*, 1083. (*co-corresponding authors).
- Highlighted in *C&En News*: "New catalytic route to polysulfates and polysulfonates". **2017**, *96(26)*, 6.
52. SuFEx-Based Polysulfonate Formation from Ethenesulfonyl Fluoride-Amine Adducts. Wang, H.; Zhou, F.; Ren, G.; Zheng, Q.; Chen, H.; Gao, B.; Klivansky, L.; Liu, Y.; Wu, B.; Xu, Q.; Lu, J.; Sharpless, K.B.; Wu, P. *Angew. Chem. Int. Ed.* **2017**, *56*, 11203.
- Highlighted by *Lawrence Berkeley National Laboratory* **2017** (<http://newscenter.lbl.gov/2017/07/25/making-plastic-chemistry-click/>).
51. Palladium-Catalyzed Fluorosulfonylvinylation of Organic Iodides. Zha, G.F.; Zheng, Q.; Leng, J.; Wu, P.; Qin, H.L.; Sharpless, K.B. *Angew. Chem. Int. Ed.* **2017**, *56*, 4849.
50. Tools for Studying Glycans: Recent Advances in Chemoenzymatic Glycan Labeling. Lopez Aguilar, A.; Briard, J.G.; Yang, L.; Ovrzyn, B.; Macauley, M.S.; Wu, P. *ACS Chem. Biol.* **2017**,

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12, 611.

49. Multidimensional SuFEx Click Chemistry: Sequential Sulfur(VI) Fluoride Exchange Connections of Diverse Modules Launched From An SOF₄ Hub. Li, S.; Wu, P.; Moses, J.E.; Sharpless, K.B. *Angew. Chem. Int. Ed.* **2017**, *56*, 2903.
48. A Heck-Matsuda Process for the Synthesis of β -Arylethenesulfonyl Fluorides: Selectively Addressable Bis-electrophiles for SuFEx Click Chemistry. Qin, H. L.; Zheng, Q.; Bare, G. A.; Wu, P.*; Sharpless, K.B.* *Angew. Chem. Int. Ed.* **2016**, *55*, 14155. (*co-corresponding authors).
47. Chemical Glycobiology. Boons, G. J.; Wu, P. *Glycobiology* **2016**, *26*, 788.
46. Controlling Sulfuryl-Transfer Biology. Cook, I.; Wang, T.; Wang, W.; Kopp, F.; Wu, P.; Leyh, T. *Cell Chem. Biol.* **2016**, *23*, 579.
45. Synthesis of Sulfotyrosine-Containing Peptides by Incorporating Fluorosulfated Tyrosine Using an Fmoc Solid-phase Strategy. Chen, W.; Dong, J.; Li, S.; Liu, Y.; Wang, Y.; Poon, L.; Wu, P.; Sharpless, K.B.; Kelly, J. W. *Angew. Chem. Int. Ed.* **2016**, *55*, 1835.
44. Chemoselective Synthesis of Polysubstituted Pyridines from Heteroaryl Fluorosulfates. Zhang, E.; Tang, J.; Li, S.; Wu, P.; Moses, J. E.; Sharpless, K. B. *Chem. Eur. J.* **2016**, *22*, 5692.
43. Discovery of Autophagy Inhibitors with Anti-proliferative Activity in Lung and Pancreatic Cancer Cells. Nordstrøm, L.; Sironi, J.; Aranda, E.; Maisonet, J.; Perez-Soler, R.; Wu, P.; Schwartz, E. *ACS Med. Chem. Lett.* **2015**, *6*, 134.
42. Tracking Surface Glycans on Live Cancer Cells with Single Molecule Sensitivity. Jiang, H.; English, B.; Hazan, R.; Wu, P.*; Ovrn, B.* *Angew. Chem. Int. Ed.* **2015**, *54*, 1765-1769. (*co-corresponding authors).
 - Highlighted in *C&En News*: "Single Glycoproteins Caught In Motion", **2015**, *93* (1), 21.
41. CHoMP: A Chemoenzymatic Histology Method for Glycan Detection Using 'Clickable' Probes. Rouhanifard, S. H.; López-Aguilar, A.; Wu, P. *ChemBioChem*, **2014**, *15*, 2667.
40. Negative Feedback Regulator of Wnt Signaling in via N-linked Fucosylation in Zebrafish. Feng, L.; Jiang, H.; Wu, P.*; Marlow, F.L.* *Dev. Biol.* **2014**, *395*, 268. (*co-corresponding authors).
39. Biocompatible Click Chemistry Enabled Compartment-Specific pH Measurement Inside *E. coli*. Yang, M.; Jalloh, A.; Wei, W.; Zhao, J.*; Wu, P.*; Chen, P. R.* *Nat. Commun.* **2014**, *5*, 4981. (*co-corresponding authors).
 - Highlighted in *C&En News* **2014**, *92* (39), 30.
38. Monitoring Dynamic Glycosylation In vivo Using Super-sensitive Click Chemistry. Jiang, H.; Zheng, T.; Lopez Aguilar, A.; Kopp, F.; Marlow, F. L.; Wu, P. *Bioconjug. Chem.* **2014**, *25*, 698.
37. In vivo Chemistry. Bertozzi, C. R.; Wu, P. *Curr. Opin. Chem, Biol.* **2013**, *17*, 717.
36. Single-stranded DNA as a Cleavable Linker for Bioorthogonal Click Chemistry-based Proteomics. Zheng, T.; Jiang, H.; Wu, P. *Bioconjugate Chem.* **2013**, *24*, 859.
35. Chemical Probing of Glycans in Cells and Organisms. Rouhanifard, S. H.; Nordstrom, L.; Zheng, T.; Wu, P. *Chem. Soc. Rev.* **2013**, *42*, 4284.

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34. Detection and Isolation of Dendritic Cells Using Lewis X-functionalized Magnetic Nanoparticles. Rouhanifard, S. H.; Xie, R.; Zhang, G.; Sun, X.; Chen, X.; Wu, P. *Biomacromolecules*. **2012**, *13*, 3039.
33. Click Triazoles for Bioconjugation. Zheng, T.; Rouhanifard S. H.; Jalloh A. S.; Wu P. *Top. Heterocycl. Chem.* **2012**, *28*, 163.
32. Metabolomic Analysis of Patient Plasma Yields Evidence of Plant-Like α -Linolenic Acid Metabolism in *Plasmodium falciparum*. Lakshmanan, V.; Rhee, K. Y.; Wang, W.; Yu, Y.; Khafizov, K.; Fiser, A.; Wu, P.; Ndir, O.; Mboup, S.; Ndiaye, D.; Daily, J. P. *J. Infect. Dis.* **2012**, *206*, 238.
31. Imaging the Glycome in Living Systems. Li, B.; Mock, F.; Wu, P. *Methods Enzymol.* **2012**, *505*, 401.
30. Sulfated Ligands for the Copper(I)-catalyzed Azide-Alkyne Cycloaddition. Wang, W.; Hong, S.; Tran, A.; Jiang, H.; Triano, R.; Liu, Y. Chen, X.; Wu, P. *Chem. Asian J.* The "Click Chemistry 10 Years" Special Issue. **2011**, *10*, 2796.
29. Imaging Glycans in Zebrafish Embryos by Metabolic Labeling and Bioorthogonal Click Chemistry. Jiang, H.; Feng, L.; Soriano del Amo, D.; Seidel, R. D. III; Marlow, F.; Wu, P. *J. Vis Exp.* **2011**, *52*, 2686.
28. Increasing the Efficacy of Bioorthogonal Click Reactions for Bioconjugation: A Comparative Study. Webler-Besanceney, C.; Jiang, H.; Zheng, T.; Feng, L.; Soriano Del Amo, D.; Wang, W.; Klivansky, L.; Liu, Y.; Marlow, F.; Wu, P. *Angew. Chem. Int. Ed.* **2011**, *50*, 8051.
27. Metabolic Labeling of Fucosylated Glycoproteins in *Bacteroides*. Webler-Besanceney, C.; Jiang, H.; Wang, W.; Baughn, A.; Wu, P. *Bioorg. Med. Chem. Lett.* **2011**, *21*, 4989.
 - The special issue in honor of Prof. Carolyn Bertozzi on the occasion of her receiving Tetrahedron Young Investigator Award.
26. Metabolic Labeling of Fucosylated Glycans in Developing Zebrafish. Dehnert, K. W.; Beahm, B. J.; Huynh, T. T.; Baskin, J. M.; Laughlin, S. T.; Wang, W.; Wu, P.; Amacher, S. L.; Bertozzi, C. R. *ACS Chem. Bio.* **2011**, *6*, 547.
25. Tracking N-acetyllactosamine on Cell Surface Glycans in Vivo. Zheng, T.; Jiang, H.; Gros, M., Soriano del Amo, D.; Sundaram, S.; Lauvau, G.; Marlow, F.; Liu, Y., Stanley, P.; Wu, P. *Angew. Chem. Int. Ed.* **2011**, *50*, 4113.
24. Biocompatible Copper(I) Catalysts for in Vivo Imaging of Glycans. Soriano del Amo, D.; Wang, W.; Jiang, H.; Besanceney, C.; Yan, A, C.; Levy, M.; Liu, Y.; Marlow, F. Wu, P. *J. Am. Chem. Soc.* **2010**, *132*, 16893.
 - Highlighted in *C&En News*: "Imaging Molecules on Living Cells", **2010**, *88* (48), 37.
23. Chemoenzymatic Synthesis of the Sialyl Lewis X Glycan and its Derivatives. Soriano Del Amo, D.; Wang, W.; Besanceney, C.; Zheng, T.; He, Y.; Gerwe, B.; Seidel, R. D. III, Wu, P. *Carbohydr. Res.* **2010**, *345*, 1107.
22. Chemoenzymatic Synthesis of GDP-L-fucose and the Lewis X Glycan Derivatives. Wang, W.; Hu, T.; Frantom, P. A.; Zheng, T.; Gerwe, B.; Soriano del Amo, D.; Seidel, R. D. III; Wu, P. *Proc. Natl. Acad. Sci. USA.* **2009**, *106*, 16096.
21. Probe the Sialic Acid Biosynthetic Pathway Using Alkyne-Bearing Sugars. Chang, P.; Chen, X.; Smyrniotis, C.; Hu, T.; Bertozzi, C. R.; Wu, P. *Angew. Chem. Int. Ed.* **2009**, *48*, 4030.

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From Work Conducted Prior to Joining Albert Einstein College of Medicine

20. Site-Specific Chemical Protein Conjugation Using Genetically Encoded Aldehyde Tags. Rabuka, D.; Rush, J. S.; deHart, G. W.; Wu, P.; Bertozzi, C. R. *Nat. Protoc.* **2012**, 7, 1052.
19. Targeted Metabolic Labeling of Yeast N-glycans with Unnatural Sugars. Breidenbach, M. A.; Gallagher, J. E. G.; King, D. S.; Smart, B. P.; Wu, P.; Bertozzi, C. R. *Proc. Natl. Acad. Sci. USA.* **2010**, 107, 3988.
18. Rapid and Selective Detection of Fatty Acylated Proteins Using Omega-Alkynyl-Fatty Acids and Click Chemistry. Yap, M. C.; Kostiuk, M. A.; Martin, D. D.; Perinpanayagam, M. A.; Hak, P. C.; Siddam, A.; Majjigapu, J. R.; Rajaiah, G.; Keller, B. O.; Prescher, J. A.; Wu, P.; Bertozzi, C. R.; Falck, J. R.; Berthiaume, L. G. *J. Lipid Res.* **2010**, 51, 1566.
17. Glycopeptide Preferring Polypeptide- GalNAc Transferase-10 (ppGalNAc T10), Involved in Mucin type-O-glycosylation, Has a Unique GalNAc-O-Ser/Thr Binding Site in Its Catalytic Domain Not Found in ppGalNAc T1 or T2. Perrine, C. L.; Ganguli, A.; Wu, P.; Bertozzi, C. R.; Fritz, T.A.; Raman, J.; Tabak, L. A.; Gerken, T. A. *J. Biol. Chem.* **2009**, 284, 20387.
16. Site-specific Chemical Modification of Recombinant Proteins Produced in Mammalian Cells Using the Genetically Encoded Aldehyde Tag. Wu, P.; Shui, W.; Carlson, B.; Hu, N.; Rabuka, D.; Lee, J.; Bertozzi, C. R. *Proc. Natl. Acad. Sci. USA.* **2009**, 106, 3000.
15. Boron Nitride Nanotubes Are Noncytotoxic and Can Be Functionalized for Interaction with Proteins and Cells. Chen, X.; Wu, P.; Rousseas, M.; Okawa, D.; Gartner, Z.; Zettl, A.; Bertozzi, C. R. *J. Am. Chem. Soc.* **2009**, 131, 890.
14. Biocompatible Carbon Nanotubes Generated by Functionalization with Glycodendrimers. Wu, P.; Chen, X.; Hu, N.; Tam, U. C.; Blixt, O.; Zettl, A.; Bertozzi, C. R. *Angew. Chem. Int. Ed.* **2008**, 47, 5022.
13. Role of Architecture and Molecular Weight in the Formation of Tailor-made Ultrathin Multilayers Using Dendritic Macromolecules and Click Chemistry. Vestberg, R.; Malkoch, M.; Kade, M.; Wu, P.; Fokin, V. V.; Sharpless, K. B.; Drockenmuller, E.; Hawker, C. J. *J. Polym. Sci., Part A: Polym. Chem.* **2007**, 45, 2835.
12. Catalytic Dipolar Cycloaddition of Azides and Alkynes: Reactivity and Applications. Wu, P.; Fokin, V. V. *Aldrich. Acta.* **2007**, 40, 7.
11. Osmium Catalyzed Olefin Dihydroxylation and Amino Hydroxylation with Second-Cycle Ligand. Wu, P.; Hilgraf, R.; Fokin, V. V. *Adv. Synth. Catal.* **2006**, 348, 1079.
10. Aziridines and Epoxides in Click Chemistry. Fokin, V. V.; Wu, P. in *Aziridines and Epoxides in Organic Synthesis*, Yudin, A. K. Ed., Wiley-VCH, New York, **2006**, 443.
9. Multivalent, Bifunctional Dendrimers Prepared by Click Chemistry. Wu, P.; Malkoch, M.; Hunt, J. N.; Vestberg, R.; Kaltgrad, E.; Finn, M. G.; Fokin, V. V.; Sharpless, K. B.; Hawker, C. J. *Chem. Comm.* **2005**, 46, 5775.
8. Just Click It: Undergraduate Procedures for the Copper(I)-Catalyzed Formation of 1,2,3-Triazoles from Azides and Terminal Acetylenes. Sharpless, W. D.; Wu, P.; Hansen, T.; Lindberg, J. G. *J. Chem. Educ.* **2005**, 82, 1833.

PENG WU, PH.D.

7. One Pot Copper(I)-Catalyzed Syntheses of 3,5-Disubstituted Isoxazoles. Hansen, T.; Wu, P.; Fokin, V. V. *J. Org. Chem.* **2005**, *70*, 7761.
6. Structurally Diverse Dendritic Libraries: A Highly Efficient Functionalization Approach Using Click Chemistry. Malkoch, M.; Schleicher, K.; Drockenmuller, E.; Hawker, C. J.; Russell, T. P.; Wu, P.; Fokin, V. V. *Macromolecules.* **2005**, *38*, 3663.
5. Efficiency and Fidelity in a Click Chemistry Route to Triazole Dendrimers via the Cu(I)-Catalyzed Ligation of Azides and Alkynes. Wu, P.; Feldman, A. K.; Nugent, A. K.; Hawker, C. J.; Scheel, A.; Voit, B.; Pyun, J.; Fréchet, J. M. J.; Sharpless, K. B.; Fokin, V. V. *Angew. Chem. Int. Ed.* **2004**, *43*, 3928
 - Highlighted in *C&En News* **2004**, *28*, 5 and **2004**, *51*, 53.
4. New d_4 Dihydrides of Ru(IV) and Os(IV) with π -donor Ligands: $M(H)_2(\text{chelate})(P^iPr_3)_2$ with Chelate = *ortho*-XYC₆H₄ with X, Y = O, NR; R = H or CH₃ Ferrando-Miguel, G.; Wu, P.; Huffman, J. C.; Caulton, K. G. *New J. Chem.* **2005**, *29*, 193.
3. Cu(I) and Cu(II) Complexes of a Pyridine-based Pincer Ligand. Vedernikov, A. N.; Wu, P.; Huffman, J. C.; Caulton, K. G. *Inorg. Chim. Acta.* **2002**, *300*, 103.
2. Intramolecular N-H Insertion of α -Diazocarbonyls Catalyzed by Cu(acac)₂: An Efficient Route to Derivatives of 3-Oxoazetidines, 3-Oxopyrrolidines and 3-Oxopiperidines. Wang, J.; Hou, Y.; Wu, P. *J. Chem. Soc. Perkin Trans.1*, **1999**, *16*, 2277.
1. Stereoselective Synthesis of Enantiomerically Pure 4,5-Disubstituted Pyrrolidinones from β -Amino Acids. Wang, J.; Hou, Y.; Wu, P.; Qu, Z.; Chan, A. S. C. *Tetrahedron Asymm.* **1999**, *10*, 4553.

PATENTS:

6. A Chemoenzymatic Method for The Detection of Cell-cell Proximity Interaction and Isolation of Tumor-specific Antigen Reactive T cells for Immune Therapy, Wu, P.; Liu, Z.; Li J.; Teijaro, J. *International PCT Patent Application No. PCT/US2020/035940*, filed June **2020**.
5. Construction of Antibody-cell Conjugates and Uses thereof. Wu, P.; Li, J.; Chen. M. *Provisional patent application 62/578,721*, filed November **2017**.
4. Thionyl Tetrafluoroide Modified Compounds and Uses. *U.S. Provisional Application No. 62/427,489*, Sharless, K. B.; Wu, P.; Li, S, filed December **2016**.
3. Polymerization of Silyl- and fluoro-containing monomers. Sharpless, K. B.; Dong, J.; Gao, B.; Wu, P.; Wang, H. *U.S. Patent WO/2016/209920*, filed December **2016**.
2. Ligands and Methods for Labeling Biomolecules In Vivo. Wu, P.; Soriono del Amo, D.; Wang, W.; Marlow F. L. *U. S. Patent 9809560B2*, issued November **2017**.
1. Aldehyde Tags, Uses Thereof in Site-Specific Protein Modification ", Carrico, I. S.; Carlson, B. L.; Bertozzi, C.; Wu, *U.S. Patent 9,447,390*, UC Case BK-2006-094-8, issued September **2016**.

INVITED TALKS:

2022

- University of California, San Francisco, CA

2021

PENG WU, PH.D.

- "Advances in Glycan Engineering and Glycans from the Microbial World Symposium", Pacificchem 2021, HA
 - 2021 Society for Glycobiology Annual Meeting, San Diego, CA
 - "Biological Tools for 4D Cellular Physiology", HHMI Janelia Farm Virtual Workshop
 - CSHA Virtual meeting on Immunoreceptor Signaling: from Bench to Bed
- 2020
- Amgen Inc., Thousand Oaks, CA
 - Janssen Pharmaceuticals, Inc. La Jolla, CA
 - The third World Laureates Association Young Scientist Forum, Shanghai, China
 - "Enzymes in Carbohydrate Synthesis – Structures, Functions, and Applications Symposium", Virtual Fall 2020 ACS National Meeting
 - University of Wisconsin, Madison, WI (to be re-scheduled)
- 2019
- IUPAC International Symposium on Bioorganic Chemistry (ISBOC-12), Shenzhen, China
 - University of Texas, Austin, TX
 - Xuetao Lectureship, Tsinghua University, Beijing, China
 - Boston College, Chestnut Hill, MA
 - Massachusetts Institute of Technology, Cambridge, MA
 - 25th International Symposium on Glycoconjugates, Milan, Italy
 - Keynote talk, Eurocarb 2019, Leiden, Netherlands
 - Shanghai Jiao Tong University, Shanghai, China
 - "Exploration of Carbohydrate/Protein Interactions/Recognition: The Latest Techniques & Achievements Symposium", 2019 Spring ACS National Meeting, Orlando, FL
 - Glycobiology Gordon Conference, Lucca (Barga), Italy
- 2018
- The World Laureates Association Inauguration Young Scientist Forum, Shanghai, China
 - Caltech, Pasadena, CA
 - University of Illinois, Urbana-Champaign, IL
 - UT Southwestern Medical Center, Dallas, TX
 - The 11th China Bio-industry Convention & 3rd Bio-Expo, Wuhan, China
 - The 11th International Symposium on Glycosyltransferases
 - 2018 Society for Glycobiology Annual Meeting, New Orleans, LA
- 2017
- International Chemical Biology Society, 2017, Shanghai, China
 - Gordon Research Conference on Carbohydrates, West Dover, VT
 - University of California, San Francisco, CA
- 2016
- San Diego Glycobiology Symposium, San Diego, CA
 - University of Houston, Houston, TX
- 2015
- The Scripps Research Institute, La Jolla, CA
 - DuPont Central Research, Wilmington, DE
 - Stony Brook University, Stony Brook, NY
 - Cornell University, Ithaca, NY
 - University of Massachusetts Medical School, Worcester, MA
 - "Frontiers at the Chemistry and Biology Interface" Symposium, Beijing, China
 - Pacificchem 2015, HA
- 2014
- University of Georgia, Athens, GA
 - "Young Investigator in Glycoscience Symposium", 247th ACS National Meeting, Dallas, TX

PENG WU, PH.D.

- “Young Investigators in Biological Chemistry Symposium”, 247th ACS National Meeting, Dallas, TX,
- Institute of Microbiology, Chinese Academy of Sciences, Beijing, China
- Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Shanghai, China
- Soochow University, Suzhou, China,
- Consortium of Functional Glycomics Workshop on Exploring the Frontiers of Chemical Glycoscience, Bethesda, MD
- Peking University, Beijing, China,
- 2014 Chinese-American Kavli Frontiers of Science Symposium, Beijing, China
- University of California, San Diego, CA
- National Cancer Institute, Bethesda, MD

2013

- NIH Workshop on Bioactive Glycans in Human Milk, Bethesda, MD
- “Isbell Award and Gin New Investigator Award Symposium”, 245th ACS National Meeting, New Orleans, LA
- Brooklyn College, Brooklyn, NY
- Memorial Sloan-Kettering Cancer Center, New York, NY
- Transatlantic Frontiers of Chemistry, Kloster Seon, Germany
- “Current Topics in Glycobiology Symposium”, 246th ACS National Meeting, Indianapolis
- University of Victoria, Victoria, Canada
- Simon Fraser University, Burnaby, Canada
- The University of British Columbia, Vancouver, Canada

2012

- University of Oxford, Oxford, UK
- University of Nottingham, Nottingham, UK
- University of Colorado, Boulder, CO
- Gordon Research Conference on Bioorganic Chemistry, Andover, NH
- University of North Carolina, Chapel Hill, NC
- DuPont Central Research, Wilmington, DE
- The Scripps Research Institute, Jupiter FL
- Hunter College, New York, NY, 11/2012
- Lawrence Berkeley National Laboratory, Berkeley CA
- University of California, San Francisco, CA

2011

- “Click Chemistry Approaches in Carbohydrate Chemistry” Symposium. 241st ACS National Meeting, Anaheim, CA,
- Tsinghua University, Beijing, China,
- Georgia State University, Atlanta, GA
- University of Chicago, Chicago, IL
- University of Pittsburg, Pittsburg, PA
- University of California, Irvine, CA

2010

- Young Investigators in Glycoscience Symposium. 239th ACS National Meeting, San Francisco, CA
- Chemical Glycobiology Symposium, New York Academy of Science, New York, NY
- Peking University, Beijing, China

2009

- University of New Mexico.