## CURRICULUM VITAE


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Spouse: Beverly Moore Paulson
Children: Lorien Mary, Erik Richard, Evan Carsten

## PROFESSIONAL POSITIONS:

2025 to Present: Cecil H. and Ida Green Professor, Department of Immunology and Microbiology, The Scripps Research Institute, La Jolla, CA

2017 to 2024:Cecil H. and Ida Green Professor and Chair, Department of Molecular Medicine, Professor, Department of Immunology and Microbiology, The Scripps Research Institute, La Jolla, CA

2015 to 2017: Cecil H. and Ida Green Professor and Chair, Department of Cell and Molecular Biology, Professor, Department of Chemical Physiology, and Department of Immunology and Microbial Science, The Scripps Research Institute, La Jolla, CA

2014 to 2015: President & CEO (Acting), The Scripps Research Institute, La Jolla, CA

2013 to 2014: Chairman and Professor, Department of Cell and Molecular Biology, Professor, Department of Chemical Physiology, The Scripps Research Institute, La Jolla, CA

1999 to 2013: Professor, Department of Chemical Physiology & Department of Molecular Biology, The Scripps Research Institute, La Jolla, CA

1996 to 1999: Vice President, Chief Scientific Officer, General Manager Glytec Division, and Member Board of Directors, Cytel Corporation, San Diego, CA

1990 to 1996: Vice President Research Development and Member of Board of Directors, Cytel Corporation, San Diego, CA

1985 to 1990: Professor and Vice-Chair, Department of Biological Chemistry, UCLA School of Medicine, Los Angeles, CA

1981-1985: Associate Professor, Department of Biological Chemistry, UCLA School of Medicine, Los Angeles, CA

1978-1981: Assistant Professor, Department of Biological Chemistry, UCLA School of Medicine, Los Angeles, CA

1974-1978: Postdoctoral Fellow/Research Associate, Department of Biochemistry, Duke University Medical Center, Durham, NC

## EDUCATION:

University of Illinois at Champaign-Urbana
Ph.D. (Biochemistry) 1974
M.S. (Biochemistry) 1971

MacMurray College, Jacksonville, Illinois
A.B.(Chemistry/Biology)1970

## HONORS:

2000 United States EPA Green Chemistry Challenge Award
2008 Bjivoet Medal, Bjivoet Center, Utrecht
2008 Barnett Lecture, Northeastern University
2009 Karl Meyer Award, Society for Glycobiology
2015 The Cecil H. and Ida Green Award, The Scripps Research Institute
2016 Melville L. Wolfrom Award, ACS – Division of Carbohydrate Chemistry
2016 Fellow, American Association for the Advancement of Science (AAAS)
2022 Alexander R Matzuk lecture, Drug Discovery – Baylor College
2022 President's Innovator Award, Society for Glycobiology
2023 Claude S. Hudson Award, ACS – Division of Carbohydrate Chemistry
2023 Tamio Yamakawa Award - Japan Consortium for Glycobiology and Glycotechnology (JCGG)
2023 Prof. Avadhesha Surolia Award for Excellence in Glycobiology - Indian Institute of Alumni Association (IIScAA)

## PROFESSIONAL ACTIVITIES:

2021 to present: Co-founder and Scientific Advisory Board, Nighthawk Therapeutics
2021 to present: Scientific Advisory Board, NovAb Inc
2021 to present: Scientific Advisory Board, GlycoEra RGB
2019 to 2020: Scientific Advisory Board, LimmaTech Biologics AG
2019 to present: Scientific Advisory Board, Ansun Biopharma Inc.
2017 to present: Chair, Scientific Advisory Board, Genomics Research Center, Academia Sinica, Taiwan
2016 to present: Scientific Advisory Board, Palleon Pharmaceuticals
2015 to 2021: Member, Scientific Advisory Board, Center of Excellence for Influenza Research and Surveillance-CEIRS
2014 to present: Chair, Scientific Advisory Board, Canadian Glycomics Network (GlycoNet)
2015: Member, Advisory Board, Florida Inventors Hall of Fame
2014 to 2015: Member, Board of Directors, Sanford Consortium for Regenerative Medicine
2013 to 2014: Chair, ACS Division of Carbohydrate Chemistry
2011 to 2012: National Academy of Sciences Glycoscience Committee
2008 to 2011: Scientific Advisory Board, Virdante, Inc.
2006 to present: Scientific Advisory Board, BU Mass Spectrometry Resource, http://www.bumc.bu.edu/msr/
2005 to present: Co-chair Human Glycomics/Proteomics Initiative (HGPI), http://www.hupo.org/research/hgpi/
2004 to present: Scientific Advisor, Nexbio
2004 to present: Scientific Advisory Board, Institute for Biological Sciences-IBS, National Research Council
2003 to present: Scientific Advisory Board, Alberta Ingenuity Center for Carbohydrate Science-AICCS
2002 to 2003: President, The Society for Glycobiology
2001 to 2011: Director, Consortium Functional Glycomics, http://www.functionalglycomics.org
1999 to 2010: Scientific Advisory Board, Neose Technologies Inc
1996 to present: Honorary Member, American Society of Clinical Investigation
1990 to present: Editorial Board, Glycobiology
1990 to present: Member, American Chemical Society
1980 to present: Member, American Society of Biological Chemists
1979 to present: Member, Society for Complex Carbohydrates
1989 to 1999: Scientific Advisory Board, Complex Carbohydrate Resource Center, Univ. Georgia
1989 to 1991: NIH Study Section, Pathobiochemistry
1986 to 1988: Scientific Advisory Board, Nucleic Acid Research Institute
1985 to 1991: Editorial Board, Journal of Biological Chemistry

## PATENTS AND PATENTS APPLICATIONS:

Antigenic Compositions and Methods for using the same
Reiko F. Irie, Tadashi Tai, Donald L. Morton, Leslie D. Cahan, James C. Paulson
Patent issued: December 10, 1985, #4,557,931

Method for Producing Secretable Glycosyltransferases and other Processing Enzymes
James C. Paulson, Eryn Ujita-Lee, Beverly Adler, Jeffrey K. Browne, Jasminder Weinstein
Patents issued: July 16, 1991, #5,032,519; July 30, 1996, #5,541,083; July 7, 1998, #5,776,772

Process for Controlling Intracellular Glycosylation of Proteins.
James Paulson, Eryn Ujita-Lee, Jasminder Weinstein
Patent issued: September 10, 1991, #5,047,335

Use of Trans-sialidase and Sialyltransferase for Synthesis of Sialyl-2-3-betagalactosides
Yukishige Ito and James Paulson
Patent issued: April 4, 1995, #5,409,817

Intercellular Adhesion Mediators
James Paulson, Mary Perez, Federico Gaeta, and Murray Ratcliffe
Patent issued: May 19, 1998, #5,753,631

Antibodies to P-selectin and their uses
Robert Chestnut, Margaret Polley and James Paulson
Patent issued: September 1, 1998, #5,800,815

Compositions and Methods for the Identification and Synthesis of Sialyltransferases
James Paulson, Dawn Wen, Brian Livingston, Bill Gilespie, Sorge Kelm, Kati Medzerhadsky, Alan Burlingham
Patent issued: January 12, 1999, #5,858,751; October 5, 1999 #5,962,294

Method for Detecting the Presence of P-Selectin
Robert Chestnut, Margaret Polley and James Paulson
Patent issued: March 7, 2000, #6,033,667

Practical in vitro Sialylation of Recombinant Glycoproteins
James Paulson, Robert Bayer, and Eric Sjoberg
Patent issued: June 4, 2002, #6,399,336B1

Control of Immune Responses by Modulating Sialyltransferases
Jamey Marth and James Paulson
Patent issued: June 4, 2002, #6,376,475

High Affinity Siglec Ligands
James C. Paulson, Brian Collins and Shoufa Han
Patent issued: January 22, 2013, #8,357,671

Liposome targeting Compounds and Related Uses
James C. Paulson, Weihsu Claire Chen, Norihito Kawasaki, and Corwin Nycholat
Patent issued: May 3, 2016, #9,326,939

Compositions and Methods for Inducing Immune Tolerance
James C. Paulson, Matthew Macauley, and David Nemazee
Patent issued: December 20, 2016, #9,522,183; May 29, 2018, #9,981,023

Desensitizing Mast Cells by Co-Presentation of Antigens with High Affinity Mast Cell Siglec Ligands
James C. Paulson, Shiteng Duan, Matthew Macauley, Corwin Nycholat
Patent issued: May 04,2021; #10,994,006

## PUBLICATIONS

420 Santos JJS, Wang S, McBride R, Adams L, Harvey R, Zhao Y, Wrobel AG, Gamblin S, Skehel J, Lewis NS, Paulson JC, Hensley SE. (2025) Bovine H5N1 binds poorly to human-type sialic acid receptors. Nature 640(8059):E18-E20.

419 Sage VL, Souza CK, Rockey NC, Shephard M, Zanella GC, Arruda B, Wang S, Drapeau EM, Doyle JD, Xu L, Barbeau DJ, Paulson JC, McElroy AK, Hensley SE, Anderson TK, Vincent Baker AL, Lakdawala SS. (2025) Eurasian 1C swine influenza A virus exhibits high pandemic risk traits. Emerg Microbes Infect. 2025 Apr 10:2492210. doi: 10.1080/22221751.2025.2492210. Online ahead of print. ..

418 Tateno H, Mahal LK, Feizi T, Kettner C, Paulson JC. (2025) The minimum information required for a glycomics experiment (MIRAGE) project: improving the standards for reporting lectin microarray data. Glycobiology. 35(4):cwaf006.

417 Bertuzzi S, Lete MG, Franconetti A, Diercks T, Delgado S, Oyenarte I, Moure MJ, Nunez-Sancho R, Valverde P, Lenza MP, Sobczak K, Jimenez-Oses G, Paulson JC, Ereno-Orbea J, Arda A, Jimenez-Barbero J. (2025) Exploring glycan-lectin interactions in natural-like environments: A view using NMR experiments inside cell and on cell surface. Chemistry. 31(10):e202403102.

416 Lin TH, Zhu X, Wang S, Zhang D, McBride R, Yu W, Babarinde S, Paulson JC, Wilson IA. (2024) A single mutation in bovine influenza H5N1 hemagglutinin switches specificity to human receptors. Science. 386(6726):1128-1134.

s415 Huang K, Bashian EE, Zong G, Nycholat CM, McBride R, Gomozkova M, Wang S, Huang C, Chapla DG, Schmidt EN, Macauley M, Moremen KW, Paulson JC, Wang LX. (2024) Chemoenzymatic Synthesis of Sulfated N-Glycans Recognized by Siglecs and Other Glycan-Binding Proteins. JACS Au 4(8):2966-2978.

414 Guenaga J, Alirezaei M, Feng Y, Alameh MG, Lee WH, Baboo S, Cluff J, Wilson R, Bale S, Ozorowski G, Lin P, Tam Y, Diedrich JK, Yates JR 3rd, Paulson JC, Ward AB, Weissman D, Wyatt RT. (2024) mRNA lipid nanoparticles expressing cell-surface cleavage independent HIV Env trimers elicit autologous tier-2 neutralizing antibodies. Front Immu.15:1426232.

413 Atxabal U, Fernández A, Moure MJ, Sobczak K, Nycholat C, Almeida-Marrero V, Oyenarte I, Paulson JC, de la Escosura A, Torres T, Reichardt NC, Jiménez-Barbero J, Ereño-Orbea J.. (2024) Quantifying Siglec-sialylated ligand interactions: a versatile $^{19}F$-$T_2$ CPMG filtered competitive NMR displacement assay. Chem Sci. 15(27):10612-10624.

412 Lei R, Liang W, Ouyang WO, Hernandez Garcia A, Kikuchi C, Wang S, McBride R, Tan TJC, Sun Y, Chen C, Graham CS, Rodriguez LA, Shen IR, Choi D, Bruzzone R, Paulson JC, Nair SK, Mok CKP, Wu NC. (2024) Epistasis mediates the evolution of the receptor binding mode in recent human H3N2 hemagglutinin. Nat Commun. 15(1):5175.

411 Schiffner T, Phung I, Ray R, Irimia A, Tian M, Swanson O, Lee JH, Lee CD, Marina-Zárate E, Cho SY, Huang J, Ozorowski G, Skog PD, Serra AM, Rantalainen K, Allen JD, Baboo S, Rodriguez OL, Himansu S, Zhou J, Hurtado J, Flynn CT, McKenney K, Havenar-Daughton C, Saha S, Shields K, Schultze S, Smith ML, Liang CH, Toy L, Pecetta S, Lin YC, Willis JR, Sesterhenn F, Kulp DW, Hu X, Cottrell CA, Zhou X, Ruiz J, Wang X, Nair U, Kirsch KH, Cheng HL, Davis J, Kalyuzhniy O, Liguori A, Diedrich JK, Ngo JT, Lewis V, Phelps N, Tingle RD, Spencer S, Georgeson E, Adachi Y, Kubitz M, Eskandarzadeh S, Elsliger MA, Amara RR, Landais E, Briney B, Burton DR, Carnathan DG, Silvestri G, Watson CT, Yates JR 3rd, Paulson JC, Crispin M, Grigoryan G, Ward AB, Sok D, Alt FW, Wilson IA, Batista FD, Crotty S, Schief WR. (2024) Vaccination induces broadly neutralizing antibody precursors to HIV gp41. Nat Immunol. 25(6):1073-1082.

410 Le Sage V, Rockey NC, French AJ, McBride R, McCarthy KR, Rigatti LH, Shephard MJ, Jones JE, Walter SG, Doyle JD, Xu L, Barbeau DJ, Wang S, Frizzell SA, Myerburg MM, Paulson JC, McElroy AK, Anderson TK, Vincent Baker AL, Lakdawala SS.(2024) Potential pandemic risk of circulating swine H1N2 influenza viruses. Nat Commun. 15(1):5025.

409 Cottrell CA, Hu X, Lee JH, Skog P, Luo S, Flynn CT, McKenney KR, Hurtado J, Kalyuzhniy O, Liguori A, Willis JR, Landais E, Raemisch S, Chen X, Baboo S, Himansu S, Diedrich JK, Duan H, Cheng C, Schiffner T, Bader DLV, Kulp DW, Tingle R, Georgeson E, Eskandarzadeh S, Alavi N, Lu D, Sincomb T, Kubitz M, Mullen TM, Yates JR 3rd, Paulson JC, Mascola JR, Alt FW, Briney B, Sok D, Schief WR. (2024) Heterologous prime-boost vaccination drives early maturation of HIV broadly neutralizing antibody precursors in humanized mice. Sci Transl Med. 16(748):eadn0223.

408 Steichen JM, Phung I, Salcedo E, Ozorowski G, Willis JR, Baboo S, Liguori A, Cottrell CA, Torres JL, Madden PJ, Ma KM, Sutton HJ, Lee JH, Kalyuzhniy O, Allen JD, Rodriguez OL, Adachi Y, Mullen TM, Georgeson E, Kubitz M, Burns A, Barman S, Mopuri R, Metz A, Altheide TK, Diedrich JK, Saha S, Shields K, Schultze SE, Smith ML, Schiffner T, Burton DR, Watson CT, Bosinger SE, Crispin M, Yates JR 3rd, Paulson JC, Ward AB, Sok D, Crotty S, Schief WR. (2024) Vaccine priming of rare HIV broadly neutralizing antibody precursors in nonhuman primates. Science. 384(6697):eadj8321.

407 Xie Z, Lin YC, Steichen JM, Ozorowski G, Kratochvil S, Ray R, Torres JL, Liguori A, Kalyuzhniy O, Wang X, Warner JE, Weldon SR, Dale GA, Kirsch KH, Nair U, Baboo S, Georgeson E, Adachi Y, Kubitz M, Jackson AM, Richey ST, Volk RM, Lee JH, Diedrich JK, Prum T, Falcone S, Himansu S, Carfi A, Yates JR 3rd, Paulson JC, Sok D, Ward AB, Schief WR, Batista FD. (2024) mRNA-LNP HIV-1 trimer boosters elicit precursors to broad neutralizing antibodies. Science. 384(6697):eadk0582.

406 El-Shesheny R, Franks J, Kandeil A, Badra R, Turner J, Seiler P, Marathe BM, Jeevan T, Kercher L, Hu M, Sim YE, Hui KPY, Chan MCW, Thompson AJ, McKenzie P, Govorkova EA, Russell CJ, Vogel P, Paulson JC, Peiris JSM, Webster RG, Ali MA, Kayali G, Webby RJ. (2024) Cross-species spill-over potential of the H9N2 bat influenza A virus. Nat Commun. 15(1):3449.

405 Barshow SM, Islam M, Commins S, Macauley MS, Paulson JC, Kulis MD. (2024) Targeting Inhibitory Siglec-3 to Suppress IgE-Mediated Human Basophil Degranulation. J Allergy Clin Immunol. 154(2):492-497.

404 Thompson AJ, Wu NC, Canales A, Kikuchi C, Zhu X, de Toro BF, Canada FJ, Worth C, Wang S, McBride R, Peng W, Nycholat CM, Jimenez-Barbero J, Wilson IA, Paulson JC. (2024) Evolution of human H3N2 influenza virus receptor specificity has substantially expanded the receptor-binding domain site. Cell Host Microbe. 32(2):261-275.e4.

403 Atxabal U, Nycholat C, Propster JM, Fernandez A, Oyenarte I, Lenza MP, Franconetti A, Soares CO, Coelho H, Marcelo F, Schubert M, Paulson JC, Jimenez-Barbero J, Ereno-Orbea J. (2024) Unraveling Molecular Recognition of Glycan Ligands by Siglec-9 via NMR Spectroscopy and Molecular Dynamics Modeling. ACS Chem Biol. 19(2):483-496.

402 Kikuchi C, Antonopoulos A, Wang S, Maemura T, Karamanska R, Lee C, Thompson AJ, Dell A, Kawaoka Y, Haslam SM, Paulson JC. (2023) Glyco-engineered MDCK cells display preferred receptors of H3N2 influenza absent in eggs used for vaccines. Nat Commun. 14(1):6178.

401 Baboo S, Diedrich JK, Martinez-Bartolome S, Wang X, Schiffner T, Groschel B, Schief WR, Paulson JC, Yates JR 3rd. (2023) DeGlyPHER: Highly sensitive site-specific analysis of N-linked glycans on proteins. Methods Enzymol. 682:137-185.

400 Canales A, Sastre J, Orduna JM, Spruit CM, Perez-Castells J, Dominguez G, Bouwman KM, van der Woude R, Canada FJ, Nycholat CM, Paulson JC, Boons GJ, Jimenez-Barbero J, de Vries RP. (2023) Revealing the Specificity of Human H1 Influenza A Viruses to Complex N-Glycans. JACS Au. 3(3):868-878.

399 Brzezicka KA, Paulson JC. (2023) Impact of Siglecs on autoimmune diseases. Mol Aspects Med. 9:101140.

398 Brzezicka KA, Arlian BM, Wang S, Olmer M, Lotz M, Paulson JC. (2022) Suppression of Autoimmune Rheumatoid Arthritis with Hybrid Nanoparticles That Induce B and T Cell Tolerance to Self-Antigen. ACS Nano. 16(12):20206-20221.

397 Lenza MP, Atxabal U, Nycholat C, Oyenarte I, Franconetti A, Quintana JI, Delgado S, Núñez-Franco R, Garnica Marroquín CT, Coelho H, Unione L, Jiménez-Oses G, Marcelo F, Schubert M, Paulson JC, Jiménez-Barbero J, Ereño-Orbea J. (2022) Structures of the Inhibitory Receptor Siglec-8 in Complex with a High-Affinity Sialoside Analogue and a Therapeutic Antibody. JACS Au. 3(1):204-215.

396 Hardy LC, Smeekens J, Raghuwanshi D, Sarkar S, Daskhan GC, Rogers S, Nycholat C, Maleki S, Burks AW, Paulson JC, Macauley MS, Kulis MD. (2022) Targeting CD22 on Memory B Cells to Induce Tolerance to Peanut Allergens. J Allergy Clin Immunol. 150(6):1476-1485.

395 Willis JR, Berndsen ZT, Ma KM, Steichen JM, Schiffner T, Landais E, Liguori A, Kalyuzhniy O, Allen JD, Baboo S, Omorodion O, Diedrich JK, Hu X, Georgeson E, Phelps N, Eskandarzadeh S, Groschel B, Kubitz M, Adachi Y, Mullin TM, Alavi NB, Falcone S, Himansu S, Carfi A, Wilson IA, Yates JR 3rd, Paulson JC, Crispin M, Ward AB, Schief WR. (2022) Human immunoglobulin repertoire analysis guides design of vaccine priming immunogens targeting HIV V2-apex broadly neutralizing antibody precursors. Immunity. 55(11):2149-2167.

394 Islam M, Arlian BM, Pfrengle F, Duan S, Smith SA, Paulson JC. (2022) Suppressing Immune Responses Using Siglec Ligand-Decorated Anti-receptor Antibodies. J Am Chem Soc. 144(21):9302-9311.

393 Bolton MJ, Ort JT, McBride R, Swanson NJ, Wilson J, Awofolaju M, Furey C, Greenplate AR, Drapeau EM, Pekosz A, Paulson JC, Hensley SE. (2022) Antigenic and virological properties of an H3N2 variant that continues to dominate the 2021-22 Northern Hemisphere influenza season . Cell Rep. 39(9):110897.

392 Arena A, Belcastro E, Ceccacci F, Petrini S, Conti LA, Pagliarosi O, Giorda E, Sennato S, Schiaffini R, Wang P, Paulson JC, Mancini G, Fierabracci A. (2022) Improvement of Lipoplexes With a Sialic Acid Mimetic to Target the C1858T PTPN22 Variant for Immunotherapy in Endocrine Autoimmunity. Front Immunol. 13:838331.

391 Enterina JR, Sarkar S, Streith L, Jung J, Arlian BM, Meyer SJ, Takematsu H, Xiao C, Baldwin TA, Nitschke L, Shlomchick MJ, Paulson JC, Macauley MS. (2022) Coordinated changes in glycosylation regulate the germinal center through CD22. Cell Rep. 38(11):110512.

390 Harumoto T, Iwai H, Tanigawa M, Kubo T, Atsumi T, Tsutsumi K, Takashima M, Destito G, Soloff R, Tomizuka K, Nycholat C, Paulson JC, Uehara K. (2022) Enhancement of Gene Knockdown on CD22-Expressing Cells by Chemically Modified Glycan Ligand-siRNA Conjugates. ACS Chem Biol. 17(2):292-298.

389 Baboo S, Diedrich JK, Martinez-Bartolome S, Wang X, Schiffner T, Groschel B, Schief WR, Paulson JC, Yates JR 3rd. (2021) DeGlyPHER: An Ultrasensitive Method for the Analysis of Viral Spike N-Glycoforms. Anal Chem. 93(40):13651-13657.

388 Edgar LJ, Thompson AJ, Vartabedian VF, Kikuchi C, Woehl JL, Teijaro JR, Paulson JC. (2021) Sialic acid ligands of CD28 suppress co-stimulation of T cells. ACS Cent Sci. 7(9):1508-1515.

387 Srivastava A, Arlian BM, Pang L, Kishimoto TK, Paulson JC. (2021) Tolerogenic Nanoparticles Impacting B and T Lymphocyte Responses Delay Autoimmune Arthritis in K/BxN Mice. ACS Chem Bio. ACS Chem Biol. 16(10):1985-1993.

386 Hong S, Yu C, Rodrigues E, Shi Y, Chen H, Wang P, Chapla DG, Gao T, Zhuang R, Moremen KW, Paulson JC, Macauley MS, Wu P. (2021) Modulation of Siglec-7 Signaling Via In Situ-Created High-Affinity cis-Ligands. ACS Cent Sci. 7(8):1338-1346.

385 Sojitra M, Sarkar S, Maghera J, Rodrigues E, Carpenter EJ, Seth S, Ferrer Vinals D, Bennett NJ, Reddy R, Khalil A, Xue X, Bell MR, Zheng RB, Zhang P, Nycholat C, Bailey JJ, Ling CC, Lowary TL, Paulson JC, Macauley MS, Derda R. (2021) Genetically encoded multivalent liquid glycan array displayed on M13 bacteriophage. Nat Chem Biol. 17(7):806-816.

384 Tsai TY, Huang MT, Sung PS, Peng CY, Tao MH, Yang HI, Chang WC, Yang AS, Yu CM, Lin YP, Bau CY, Huang CJ, Pan MH, Wu CY, Hsiao CD, Yeh YH, Duan S, Paulson JC, Hsieh SL. (2021) Siglec-3 (CD33) serves as an immune checkpoint receptor for HBV infection. J Clin Invest. 131(11):e141965.

383 Duan S, Arlian BM, Nycholat CM, Wei Y, Tateno H, Smith SA, Macauley MS, Zhu Z, Bochner BS, Paulson JC. (2021) Nanoparticles Displaying Allergen and Siglec-8 Ligands Suppress IgE-FcεRI-Mediated Anaphylaxis and Desensitize Mast Cells to Subsequent Antigen Challenge. J Immunol. 206(10): 2290-2300.

382 Büll C, Nason R, Sun L, Van Coillie J, Madriz Sørensen D, Moons SJ, Yang Z, Arbitman S, Fernandes SM, Furukawa S, McBride R, Nycholat CM, Adema GJ, Paulson JC, Schnaar RL, Boltje TJ, Clausen H, Narimatsu Y. (2021) Probing the binding specificities of human Siglecs by cell-based glycan arrays. Proc Natl Acad Sci U S A. 118(17):e2026102118.

381 Bagdonaite I, Thompson AJ, Wang X, Sogaard M, Fougeroux C, Frank M, Diedrich JK, Yates JR 3rd, Salanti A, Vakhrushev SY, Paulson JC, Wandall HH.(2021) Site-Specific O-Glycosylation Analysis of SARS-CoV-2 Spike Protein Produced in Insect and Human Cells. Viruses 13(4):551.

380 Thompson AJ, Paulson JC. (2021) Adaptation of Influenza Viruses to Human Airway Receptors. J Biol Chem. 296(100017):1-17.

379 Hong S, Yu C, Wang P, Shi Y, Cao W, Cheng B, Chapla DG, Ma Y, Li J, Rodrigues E, Narimatsu Y, Yates JR 3rd, Chen X, Clausen H, Moremen KW, Macauley MS, Paulson JC, Wu P. (2021) Glycoengineering of NK Cells with Glycan Ligands of CD22 and Selectins for B-Cell Lymphoma Therapy. Angew Chem Int Ed Engl. 60(7):3603-3610.

378. Berndsen ZT, Chakraborty S, Wang X, Cottrell CA, Torres JL, Diedrich JK, Lopez CA, Yates JR 3rd, van Gils MJ, Paulson JC, Gnanakaran S, Ward AB. (2020) Visualization of the HIV-1 Env glycan shield across scales. Proc Natl Acad Sci U S A. 117(45):28014-28025.

377. Bangaru S, Ozorowski G, Turner HL, Antanasijevic A, Huang D, Wang X, Torres JL, Diedrich JK, Tian JH, Portnoff AD, Patel N, Massare MJ, Yates JR 3rd, Nemazee D, Paulson JC, Glenn G, Smith G, Ward AB. (2020) Structural analysis of full-length SARS-CoV-2 spike protein from an advanced vaccine candidate. Science. 370(6520):1089-1094.

376. Weiss M, Ott D, Karagiannis T, Weishaupt M, Niemietz M, Eller S, Lott M, Martinez-Orts M, Canales A, Razi N, Paulson J, Unverzagt C. (2020) Efficient Chemoenzymatic Synthesis of N-Glycans With a b1,4-Galactosylated Bisecting-GlcNAc Motif. Chembiochem. 21(22):3212-3215.

375. Herfst S, Zhang J, Richard M, McBride R, Lexmond P, Bestebroer TM, Spronken MIJ, de Meulder D, van den Brand JM, Rosu ME, Martin SR, Gamblin SJ, Xiong X, Peng W, Bodewes R, van der Vries E, Osterhaus ADME, Paulson JC, Skehel JJ, Fouchier RAM. (2020) Hemagglutinin Traits Determine Transmission of Avian A/H10N7 Influenza Virus between Mammals. Cell Host Microbe.28(4):602-613.e7.

374. Eggink D, Spronken M, van der Woude R, Buzink J, Broszeit F, McBride R, Pawestri HA, Setiawaty V, Paulson JC, Boons GJ, Fouchier RAM, Russell CA, de Jong MD, de Vries RP. (2020) Phenotypic Effects of Substitutions Within the Receptor Binding Site of Highly Pathogenic Avian Influenza H5N1 Observed During Human Infection. J Virol. 94(3):e00195-20.

373. Lee S, Yang YA, Milano SK, Nguyen T, Ahn C, Sim JH, Thompson AJ, Hillpot EC, Yoo G, Paulson JC, Song J. (2020) Salmonella Typhoid Toxin PltB Subunit and Its Non-typhoidal Salmonella Ortholog Confer Differential Host Adaptation and Virulence. Cell Host Microbe. 27(6):937-949.

372. Thompson AJ, Cao L, Ma Y, Wang X, Diedrich JK, Kikuchi C, Willis S, Worth C, McBride R, Yates JR 3rd, Paulson JC. (2020) Human Influenza Virus Hemagglutinins Contain Conserved Oligomannose N-Linked Glycans Allowing Potent Neutralization by Lectins. Cell Host Microbe. 27(5):725-735.

371. Duan S and Paulson JC. (2020) Siglecs as Immune Cell Checkpoints in Disease. Annu Rev Immunol.38:365-395

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