

Aaron J. Storey, PhD

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Education

2011-2017 Ph.D. in Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, Little Rock, AR

2006-2010 B.S. in Behavioral Neuroscience, University of Evansville Evansville, IN

Professional Experience

2023-present Director, Mass Spectrometry Lab, Arkana Laboratories

2020-2023 Research Assistant Professor, Department of Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, Little Rock, AR

2018-2020 Post-doctoral Fellow, Department of Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, Little Rock, AR

Honors and Awards

2016 American Society for Biochemistry and Molecular Biology (ASBMB)- Best poster in DNA replication, repair, and recombination

2016 Travel Award, ASBMB

2015 First place, Oral Session, Graduate School Division

2014 Travel Award, Southeastern Regional Yeast Meeting (SERYM)

2013 Travel Award, SERYM

2013 Paul L. Day Award for Outstanding Academic Achievement

Professional Memberships and Activities

2016-present American Society for Mass Spectrometry

Educational Activities

Didactic Workshops

- 2023 “Data-independent acquisition”, IDeA workshop for Faculty and Students, University of Delaware
- 2023 “Methods for Quantitative Proteomics”, IDeA workshop for Faculty and Students, Little Rock, AR
- 2022 “Methods for Quantitative Proteomics”, IDeA workshop for Faculty and Students, Little Rock, AR
- 2021 “Methods for Quantitative Proteomics”, IDeA workshop for Faculty and Students, Little Rock, AR
- 2021 “Overview of Data-Independent Acquisition”, IDeA workshop for Targeted Proteomics, Oklahoma City, Oklahoma
- 2021 “Implementing Data-Independent Acquisition in a Core Facility”, IDeA workshop for Core Directors, Little Rock, AR
- 2020 “Qualitative assessment of real-time search on the Orbitrap Eclipse “, IDeA workshop for Core Directors, Little Rock, AR
- 2019 “Visualization, Comparison, and Accessibility of Large Data Sets”, ASMS Analytical Lab Managers Interest Group
- 2019 “SILAC, TMT, and Label-free Quantitation”, IDeA workshop for Faculty and Students
- 2019 “Data visualization”, IDeA workshop for Core Directors, Breakout Session
- 2018 “Analysis of histone proteoforms using top-down proteomics”, IDeA workshop for Core Directors
- 2018 “Quantitative proteomics using tandem mass tag (TMT) reagents”, IDeA workshop for Students

- 2017 “Analysis of histone post-translational modifications using mass spectrometry“, IDeA workshop for Core Directors
- 2017 “Overview of the R programming language for proteomic applications“, IDeA workshop for Faculty

Didactic Teaching

- 2022-present BIOG 5106 Current Trends in Biomedical Sciences
3 lectures (1hr)
Course Director: Dr. Wayne Wahls
- 2022-present BIOG 5109 Methods in Biomedical and Translational Sciences
1 lecture (1.5 hr)
Course Director: Dr. Eric Enemark
- 2022 BIOG 6102 Special Topics in Proteomics
7 lectures (1 hr)
Course Director: Dr. Rick Edmondson
- 2021-present BIOG 5101 Biochemistry and Molecular Biology
2 lectures (1 hr)
Course Director: Dr. Mari Davidson
- 2020 BIOG 6102 Special Topics in Proteomics, 3 lectures (1 hr each),
Course Director: Dr. Sam Mackintosh

Seminars Presented

- 2021 “Antigen biomarker identification in membranous glomerulopathy“, TRI innOVATION Seminar Series, University of Arkansas for Medical Sciences
- 2018 “Analysis of histone proteoforms using top-down proteomics“, American Chemical Society Southwest Regional Meeting, Little Rock, AR
- 2015 “Proteomic analysis of the *ade6-M26* meiotic recombination hotspot“, SERYM
- 2014 “Proteomic analysis of the *ade6-M26* meiotic recombination hotspot“, SERYM

Posters Presented

- 2023 “Classifying membranous nephropathy by mass spectrometry”, ASMS June 2023
- 2021 “Antigen discovery in membranous glomerulopathy using laser capture microdissection and mass spectrometry” ACTS, Virtual
- 2018 “Analysis of histone proteoforms using top-down proteomics”, ASMS
- 2017 “Proteomic analysis of the *ade6-M26* meiotic recombination hotspot”, ASMS
- 2016 “Proteomic analysis of the *ade6-M26* meiotic recombination hotspot”, ASBMB
- 2013 “A minichromosome-based approach for affinity purification of the *ade6-M26* meiotic recombination hotspot”, UAMS Student Research Day
- 2013 “A minichromosome-based approach for affinity purification of the *ade6-M26* meiotic recombination hotspot”, SERYM
- 2012 “A minichromosome-based approach for affinity purification of the *ade6-M26* meiotic recombination hotspot”, UAMS Student Research Day
- 2012 “A minichromosome-based approach for affinity purification of the *ade6-M26* meiotic recombination hotspot”, AAAS

Publications

Complete List of Published Work in MyBibliography:

<https://www.ncbi.nlm.nih.gov/myncbi/1bkN6T90xn5E9z/bibliography/public/>

Publications after Joining UAMS Faculty in 2020:

1. Caza TN, **Storey AJ**, Hassen SI, Herzog C, Edmondson RD, Arthur JM, Kenan DJ, Larsen CP. Discovery of seven novel putative antigens in membranous nephropathy and membranous lupus nephritis identified by mass spectrometry. *Kidney Int.* 2023 Mar;103(3):593-606. doi: 10.1016/j.kint.2023.01.001. Epub 2023 Jan 10. PMID: 36638888; PMCID: PMC9974866.
2. Manral P, Caza TN, **Storey AJ**, Beck LH, Borza DB. The Alternative Pathway Is Necessary and Sufficient for Complement Activation by Anti-THSD7A

Autoantibodies, Which Are Predominantly IgG4 in Membranous Nephropathy. *Front Immunol.* 2022; 13:952235. PMID: 35874690.

3. Li D, Yu X, Kottur J, Gong W, Zhang Z, **Storey AJ**, Tsai YH, Uryu H, Shen Y, Byrum SD, Edmondson RD, Mackintosh SG, Cai L, Liu Z, Aggarwal AK, Tackett AJ, Liu J, Jin J, Wang GG. Discovery of a dual WDR5 and Ikaros PROTAC degrader as an anti-cancer therapeutic. *Oncogene.* 2022 06; 41(24):3328-3340. PMID: 35525905.
4. Morelle J, Caza T, Debiec H, Aydin S, **Storey A**, Ronco P, Larsen C. Cubilin and amnionless protein are novel target antigens in anti-brush border antibody disease. *Kidney Int.* 2022 05; 101(5):1063-1068. PMID: 35276203.
5. Waldrip ZJ, Burdine L, Harrison DK, Azevedo-Pouly AC, **Storey AJ**, Moffett OG, Mackintosh SG, Burdine MS. DNA-PKcs kinase activity stabilizes the transcription factor Egr1 in activated immune cells. *J Biol Chem.* 2021 10; 297(4):101209. PMID: 34562454.
6. Delgado M, Washam CL, Urbaniak A, Heflin B, **Storey AJ**, Lan RS, Mackintosh SG, Tackett AJ, Byrum SD, Chambers TC. Phosphoproteomics Provides Novel Insights into the Response of Primary Acute Lymphoblastic Leukemia Cells to Microtubule Depolymerization in G1 Phase of the Cell Cycle. *ACS Omega.* 2021 Sep 28; 6(38):24949-24959. PMID: 34604676.
7. Xu C, Meng F, Park KS, **Storey AJ**, Gong W, Tsai YH, Gibson E, Byrum SD, Li D, Edmondson RD, Mackintosh SG, Vedadi M, Cai L, Tackett AJ, Kaniskan HÜ, Jin J, Wang GG. A NSD3-targeted PROTAC suppresses NSD3 and cMyc oncogenic nodes in cancer cells. *Cell Chem Biol.* 2022 03 17; 29(3):386-397.e9. PMID: 34469831.
8. Ahn JH, Davis ES, Daugird TA, Zhao S, Quiroga IY, Uryu H, Li J, **Storey AJ**, Tsai YH, Keeley DP, Mackintosh SG, Edmondson RD, Byrum SD, Cai L, Tackett AJ, Zheng D, Legant WR, Phanstiel DH, Wang GG. Phase separation drives aberrant chromatin looping and cancer development. *Nature.* 2021 Jul; 595(7868):591-595. PMID: 34163069.
9. Chappell K, Graw S, Washam CL, **Storey AJ**, Bolden C, Peterson EC, Byrum SD. PTMViz: a tool for analyzing and visualizing histone post translational modification data. *BMC Bioinformatics.* 2021 May 26; 22(1):275. PMID: 34039258.
10. Xu C, Tsai YH, Galbo PM, Gong W, **Storey AJ**, Xu Y, Byrum SD, Xu L, Whang YE, Parker JS, Mackintosh SG, Edmondson RD, Tackett AJ, Huang J, Zheng D, Earp HS, Wang GG, Cai L. Cistrome analysis of YY1 uncovers a regulatory axis of YY1:BRD2/4-PFKP during tumorigenesis of advanced prostate cancer. *Nucleic Acids Res.* 2021 05 21; 49(9):4971-4988. PMID: 33849067.

11. Fan H, Guo Y, Tsai YH, **Storey AJ**, Kim A, Gong W, Edmondson RD, Mackintosh SG, Li H, Byrum SD, Tackett AJ, Cai L, Wang GG. A conserved BAH module within mammalian BAHD1 connects H3K27me3 to Polycomb gene silencing. *Nucleic Acids Res.* 2021 May 07; 49(8):4441-4455. PMID: 33823544.
12. Al-Rabadi LF, Caza T, Trivin-Avillach C, Rodan AR, Andeen N, Hayashi N, Williams B, Revelo MP, Clayton F, Abraham J, Lin E, Liou W, Zou CJ, Ramkumar N, Cummins T, Wilkey DW, Kawalit I, Herzog C, **Storey A**, Edmondson R, Sjoberg R, Yang T, Chien J, Merchant M, Arthur J, Klein J, Larsen C, Beck LH. Serine Protease HTRA1 as a Novel Target Antigen in Primary Membranous Nephropathy. *J Am Soc Nephrol.* 2021 May 05. PMID: 33952630.
13. Xu C, Tsai YH, Galbo PM, Gong W, **Storey AJ**, Xu Y, Byrum SD, Xu L, Whang YE, Parker JS, Mackintosh SG, Edmondson RD, Tackett AJ, Huang J, Zheng D, Earp HS, Wang GG, Cai L. Cistrome analysis of YY1 uncovers a regulatory axis of YY1:BRD2/4-PFKP during tumorigenesis of advanced prostate cancer. *Nucleic Acids Res.* 2021 Apr 13. PMID: 33849067.
14. Li J, Galbo PM, Gong W, **Storey AJ**, Tsai YH, Yu X, Ahn JH, Guo Y, Mackintosh SG, Edmondson RD, Byrum SD, Farrar JE, He S, Cai L, Jin J, Tackett AJ, Zheng D, Wang GG. ZMYND11-MBTD1 induces leukemogenesis through hijacking NuA4/TIP60 acetyltransferase complex and a PWWP-mediated chromatin association mechanism. *Nat Commun.* 2021 02 16; 12(1):1045. PMID: 33594072.
15. Caza T, Hassen S, Kuperman M, Sharma S, Dvanajscak Z, Arthur J, Edmondson R, **Storey A**, Herzog C, Kenan D, Larsen C. Neural cell adhesion molecule 1 is a novel autoantigen in membranous lupus nephritis. *Kidney Int.* 2020 Oct 09. PMID: 33045259.
16. Koss B, Shields BD, Taylor EM, **Storey AJ**, Byrum SD, Gies AJ, Washam CL, Choudhury SR, Hyun Ahn J, Uryu H, Williams JB, Krager KJ, Chiang TC, Mackintosh SG, Edmondson RD, Aykin-Burns N, Gajewski TF, Wang GG, Tackett AJ. Epigenetic Control of Cdkn2a.Arj Protects Tumor-Infiltrating Lymphocytes from Metabolic Exhaustion. *Cancer Res.* 2020 Nov 01; 80(21):4707-4719. PMID: 33004350.
17. Caza T, Hassen S, Dvanajscak Z, Kuperman M, Edmondson R, Herzog C, **Storey A**, Arthur J, Cossey LN, Sharma S, Kenan D, Larsen C. NELL1 is a target antigen in malignancy-associated membranous nephropathy. *Kidney Int.* 2020 Aug 20. PMID: 32828756.

Publications Prior to Faculty Appointment:

18. **Storey AJ**, Naceanceno KS, Lan RS, Washam CL, Orr LM, Mackintosh SG, Tackett AJ, Edmondson RD, Wang Z, Li HY, Frett B, Kendrick S, Byrum SD. ProteoViz: a tool for the analysis and interactive visualization of phosphoproteomics data. *Mol Omics*. 2020 Apr 29. PMID: 32347222.
* **Selected for the cover of the journal**
19. **Storey AJ**, Hardman RE, Byrum SD, Mackintosh SG, Edmondson RD, Wahls WP, Tackett AJ, Lewis JA. Accurate and Sensitive Quantitation of the Dynamic Heat Shock Proteome Using Tandem Mass Tags. *J Proteome Res*. 2020 Mar 6;19(3):1183-1195. doi: 10.1021/acs.jproteome.9b00704. Epub 2020 Feb 19.
20. Larsen CP, Sharma SG, Caza TN, Kenan DJ, **Storey AJ**, Edmondson RD, Herzog C, Arthur JM. Serum amyloid P deposition is a sensitive and specific feature of membranouslike glomerulopathy with masked IgG kappa deposits., *Kidney International* (2019), doi: <https://doi.org/10.1016/j.kint.2019.10.026>.
21. **Storey AJ**, Wang HP, Protacio RU, Davidson MK, Wahls WP. Targeted Forward Genetics: Population-Scale Analyses of Allele Replacements Spanning Thousands of Base Pairs in Fission Yeast. *G3 (Bethesda)* 2019 Oct 9. pii: g3.400805.2019. doi: 10.1534/g3.119.400805.
22. Ren Z, Ahn JH, Liu H, Tsai YH, Bhanu NV, Koss B, Allison DF, Ma A, **Storey AJ**, Wang P, Mackintosh SG, Edmondson RD, Groen RWJ, Martens AC, Garcia BA, Tackett AJ, Jin J, Cai L, Zheng D, Wang GG. PHF19 promotes multiple myeloma tumorigenicity through PRC2 activation. *Blood*. 2019 Aug 5. pii: blood.2019000578. doi: 10.1182/blood.2019000578.
23. Chiang TC, Koss B, Su JL, Washam CL, Byrum SD, **Storey AJ**, Tackett AJ. Effect of Sulforaphane and 5-Aza-2'-Deoxycytidine on Melanoma Cell Growth. *Medicines* 2019, 6(3), 71; <https://doi.org/10.3390/medicines6030071>
24. Shields BD, Koss B, Taylor EM, **Storey AJ**, West KL, Byrum SD, Mackintosh SG, Edmondson R, Mahmoud F, Shalin SC, Tackett AJ. Loss of E-cadherin inhibits CD103 anti-tumor activity and reduces checkpoint blockade responsiveness in melanoma. *Cancer Res*. 2019 Jan 23. pii: canres.1722.2018. doi: 10.1158/0008-5472.CAN-18-1722.
25. **Storey AJ**, Wang HP, Protacio RU, Davidson MK, Tackett AJ, Wahls WP. Chromatin-mediated regulators of meiotic recombination revealed by proteomics of a recombination hotspot. *Epigenetics Chromatin*. 2018 Oct 29;11(1):64. doi: 10.1186/s13072-018-0233-x.
26. Byrum SD, Loughran AJ, Beenken KE, Orr LM, **Storey AJ**, Mackintosh SG, Edmondson RD, Tackett AJ, Smeltzer MS. Label-Free Proteomic Approach to

Characterize Protease-Dependent and -Independent Effects of sarA Inactivation on the Staphylococcus aureus Exoproteome. J Proteome Res. 2018;17(10):3384-3395.

27. Kriss CL, Gregory-lott E, **Storey AJ**, Tackett AJ, Wahls WP, Stevens SM. In Vivo Metabolic Tracing Demonstrates the Site-Specific Contribution of Hepatic Ethanol Metabolism to Histone Acetylation. Alcohol Clin Exp Res. 2018;42(10):1909-1923.
28. Protacio RU*, **Storey AJ***, Davidson MK, Wahls WP. Nonsense codon suppression in fission yeast due to mutations of tRNA^{Ser.11} and translation release factor Sup35 (eRF3). Current genetics. 2015;61(2):165-173.
*Co-first author
29. Waldrip ZJ, Byrum SD, **Storey AJ**, et al. A CRISPR-based approach for proteomic analysis of a single genomic locus. Epigenetics. 2014;9(9):1207-1211.
30. Gao J, Kan F, Wagon JL, **Storey AJ**, Protacio RM, Davidson MK, Wahls MP. Rapid, efficient and precise allele replacement in the fission yeast Schizosaccharomyces pombe. Current genetics. 2014;60(2):109-119.

Pending Research Funding

Current Research Funding

1. **R44DK130702-02** (NIDDK) P.I. Larsen & Storey 07/15/2022-05/31/2024. Development of a Precision Medicine-Based Diagnostic Tool for Membranous Nephropathy. Phase II Goals: Commercialize and implement a comprehensive diagnostic tool for autoantigen identification in membranous nephropathy biopsy tissue. Role: Co-Investigator. 4.8 Calendar months (\$1,018,450/yr total cost)

Completed Research Funding

1. **1R01GM141040-01A1** (NIH/NIGMS) P.I. Lupu & Tackett 09/10/2021-08/31/2025. Discovery and Characterization of Novel Sepsis Proteome Biomarkers. Goals: Identification and initial biological, analytical and clinical evaluation of biomarkers and biomarker signatures for sepsis that will be ready for clinical validation. Role: Co-Investigator. 3 Calendar months (\$554,285/yr total cost)
2. **R24GM137786** (NIH/NIGMS), P.I. Tackett 08/20/2020-05/31/2025. IDeA National Resource for Quantitative Proteomics. Goals: To provide cutting-edge

proteomics resources and bioinformatics expertise to the IDeA network at competitive and subsidized rates. Role: Co-Investigator. 2.4 Calendar months (\$2,939,961/yr total cost)

3. **P20GM121293** (NIH/NIGMS) P.I. Tackett 07/01/2022 – 06/30/2027. Center for Translational Pediatric Research. Goals: This is a NIH Center of Biomedical Research Excellence grant focusing on systems biology. Funding supports research programs of five junior investigators, an extensive mentoring program, and infrastructure through core facility support. This application represents Phase 2 of the previously funded COBRE grant.. Role: Co-Investigator. 1.8 Calendar months (\$2,330,000/yr total cost)
4. **S10OD026736** (NIH/Office of the Director), P.I. Mackintosh. 08/01/2019-07/31/2020. Q Exactive HF-X Hybrid Quadrupole Orbitrap Mass Spectrometer. Goals: This award serves to support the purchase of a Q Exactive series mass spectrometer to support NIH Institutional Development Award (IDeA) centers in the state of Arkansas. Role: Co-Investigator. 0 Calendar months
5. **R41DK130702-01** (NIH/NIDDK), P.I. Larsen & Storey. 07/01/2021-06/30/2022. Development of a Precision Medicine-Based Diagnostic Tool for Membranous Nephropathy. Goals: Develop and commercialize a comprehensive diagnostic tool for autoantigen identification in membranous nephropathy biopsy tissue. Role: Co-PI. 2.4 Calendar months (\$21,156 by effort, \$118,117/yr total costs)
6. **Arkansas Children's Research Institute Post-doctoral Fellowship**, 01/01/2019-01/01/2021. Rapid bacterial identification of pediatric septic arthritis using mass spectrometry. Goals: Identify bacteria in synovial fluid of culture-negative septic arthritis cases using mass spectrometry. 0 Calendar months (\$7,500/yr).
7. **NIH/NIGMS COBRE CMPHIR Pilot Award**. 05/01/2021-04/30/2022. Sepsis biomarker discovery at repository scale. Goals: Apply cutting-edge high-throughput proteomics to assess biobank sample quality and identify biomarkers of sepsis progression. Role: P.I. 0 calendar months (\$50,000/yr)
*Funding for this award concluded after receiving funding for 1R01GM141040-01A1.
8. **5TL1TR003109-02** (NCATS), P.I. Rusch 07/01/2019-06/30/2021. Health Sciences Innovation and Entrepreneurship (HSIE) Program. Goals: Train the next generation of health scientists to transform discoveries into benefits for clinical care by teaching entrepreneurial skills. Role: Trainee. 12 post-doctoral calendar months (\$48,000 by effort, \$319,864/yr total cost)