PATRICIA A. SHERIDAN, PhD

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PROFILE

Translational sciences leader focused on delivering quality research and development (R&D) initiatives – resulting in new biomarker discoveries and actionable insights. Focused on study design, data interpretation, program and laboratory management, metabolomics/multiomics, and translational research. Known for leading cross-functional groups and communicating project goals and results with scientists, administrators, physicians, and lay audiences.

Areas of Expertise

- KOL Management and Client Engagement
- Study Design and Execution
- Data Analysis and Interpretation
- Human Studies Clinical Coordination
- Marketing and IP Development
- Team Training and Development
- IRB and IACUC Protocol Creation
- Grant Proposals and Funding

CORE COMPETENCIES

Research and Development – Envision industry-leading assets and monitor projects to completion
Bioscience Experience – Incorporate academic and real-world experience to enhance R&D efforts
Client Focused – Delivering on-time and accurate results with impeccable support
Data Interpretation – Examine large data sets to draw conclusions and make recommendations
People Leadership – Inspire teams through 1-on-1 coaching and mentoring to improve performance
Clinical Coordination – Guide all aspects of clinical studies to ensure consistently accurate results
Curious Mindset – Ask probing questions to drive innovative thinking to solve complex problems

Selected Contributions

- *Presenter* – More than 30 research talks at national and international conferences, academic institutions, and industry groups
- *Author and Reviewer* – Over 28 peer-reviewed publications (including in *Nature Medicine, Journal of Clinical Investigation, Brain, Behavior and Immunity*) and reviewer for 18 biomedical journals

PROFESSIONAL EXPERIENCE

Associate Director: Biological Development/Scientific and Translational Strategies
Metabolon, Inc. | January 2021- June 2024

- Provided scientific leadership and strategic direction in multi-omic biomarker discovery and development, with a focus on cardiometabolic, cancer, and neurodegenerative diseases.
- Led a team of five multidisciplinary scientists in conducting translational research to identify novel therapeutic targets and biomarker signatures for clinical applications.
- Established and nurtured collaborations with key opinion leaders (KOLs), large human cohorts, and strategic partners to drive evidence generation, intellectual property development, and grant submissions.
- Synthesized and communicated complex scientific data to diverse stakeholders, including researchers, biopharma partners, and clinical teams, ensuring alignment with evolving healthcare needs.

- Partnered cross-functionally with bioinformaticians, epidemiologists, and external contract research organizations (CROs) to support multi-omic data analysis and translational insights.
- Spearheaded the advancement of multiple novel assets into the preclinical development pipeline within two years, incorporating in vitro and in vivo model testing, pharmacokinetics (PK), pharmacodynamics (PD), and toxicology assessments.
- Managed a remote, global team, including European-based scientists, fostering a collaborative and high-performing research environment.
- Designed and executed scientific communication strategies, delivering over 20 presentations, webinars, and training sessions to support internal teams and external partners.

Senior Study Director: Biological Development
Metabolon, Inc. | February 2020 - January 2021

- Served as scientific lead to forge collaborations with strategic, large human cohorts, and KOLs to establish joint intellectual property (IP) and grant submissions
- Spearheaded cross-functional efforts and engaged with CROs and key opinion leaders (KOLs) to identify novel bacterial metabolites and biomarkers of diseases
- Served as the main point person at Metabolon for the Health for Life in Singapore (HELIOS) Study, Microbiome and Insulin Longitudinal Evaluation Study (MILES) and the Lactation Lab at Harvard Hospitals

Senior Study Director: Discovery and Translational Sciences

Metabolon, Inc. | January 2017 - January 2020

- Generated sales and marketing support collateral
- Liaised between R&D teams and Discovery and Translational Sciences Group
- Performed detailed data analysis and interpretation on more than 150 projects to educate scientists and clinicians about results
    - Drove adoption of biomarkers and key molecular mechanisms while establishing strong partnerships and collaborations with researchers
        - Designed, managed, and interpreted large metabolomic projects across diverse disciplines for clients in academia, biotechnology, and pharmaceutical industry
        - Collaborated with pharmaceutical companies, biotech and academia, across all phases of drug development to identify disease pathology, drug mechanism of action, and disease biomarkers
        - Communicated effectively with clients during initial study design calls, reporting of preliminary results, and delivery of the final report
        - Worked collaboratively with statisticians, sales associates, and marketing teams to support technical and content needs across a wide variety of study designs and marketing applications
        - Monitored progress of all projects on an ongoing basis relative to established timelines and key milestones, ensuring delays were identified and communicated to PIs, Director, and functional group staff in a timely manner

Study Director: Discovery and Translational Sciences, Academic Projects
Metabolon, Inc. | September 2016- December 2017

- Drove adoption of biomarkers and key molecular mechanisms while establishing strong partnerships and collaborations with researchers
        - Designed, managed, and interpreted large metabolomic projects across diverse disciplines for clients in academia, biotechnology, and pharmaceutical industry
        - Collaborated with pharmaceutical companies, biotech and academia, across all phases of drug development to identify disease pathology, drug mechanism of action, and disease biomarkers
        - Communicated effectively with clients during initial study design calls, reporting of preliminary results, and delivery of the final report

- Worked collaboratively with statisticians, sales associates, and marketing teams to support technical and content needs across a wide variety of study designs and marketing applications

Research Assistant Professor and Clinical Study Coordinator
University of North Carolina: Department of Nutrition | January 2008 - July 2016

- Conducted 2 major NIH-funded projects, including 1-year double-blinded, placebo-controlled study for a Fortune 500 company
  - Examined impacts of GRAS food additive on immune responses to influenza vaccine
- Served as graduate thesis advisor and Dissertation and Thesis Committee member
- Contributed as key member on Master of Public Health/Registered Dietitian Admission and Student Committee, Nutrition Diversity Committee, and Nutrition PhD Training Committee

Selected Contributions

- *Principal Investigator* – NIH/RTI Metabolomics Grant "Metabolomic profiling of anxiety prone HSV-1 latently infected obese mice"
- *Co-Investigator and Study Coordinator* – NIH R01AI78090 "Risk of influenza infection in a vaccinated obese population" and "Effect of supplementation on the immune response to influenza vaccine"
- *Course Director* – Biology 320 (Human Immunology)
- *Instructor* – Nutrition 600 (Metabolism) and Nutrition 620 (Micronutrients in Health and Disease)

Research Associate/Post Doctoral Fellowship
University of North Carolina: Nutritional Immunology | August 2003 - January 2008

- Investigated micronutrients and infectious disease responses in the lung and brain

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EDUCATION & TRAINING

Doctor of Philosophy (PhD) in Neuroscience
Master of Science (MS) in Neuroscience
Interdepartmental Program in Neuroscience
University of Rochester

Bachelor of Science (BS) in Microbiology
with honors and distinction
The Ohio State University

Leadership for Drug Development Teams
Tufts Center for the Study of Drug Development

INDUSTRY LEADERSHIP & AFFILIATIONS

Current

Women in Biology

Member, 2024 Executive Mentoring Cohort

University of Rochester School of Medicine and Dentistry's Alumni Council
Council Member and Chair of the Communications Committee

Master of Public Health Program Preceptor, Texas A&M University

Served as a preceptor for an MPH student completing their Malaria Immuno-Adaptive statistical analysis project, report, and program building project

Previous

Chair of Immunology Research Interest Section
The American Society for Nutrition
Responsible for fundraising and organizing the annual RIS meeting at ASN

Ad Hoc Grant Reviewer
The Wellcome Trust (United Kingdom) | The Dutch Technology Foundation (Netherlands)

Review Committee Member
Ontario Ministry of Economic Development and Innovation (Ontario-China Research Innovation Fund)

Member
Psychoneuroimmunoloågy Research Society and American Society for Nutrition

PUBLICATIONS

1. N. Sadhu, R. Dalan, P.R. Jain, C.J.M. Lee, L.S.P. Pakkiri, K.Y. Tay, T.H. Mina, D. Low, Y. Min, M. Ackers-Johnson, T.T. Thi, V.G. Kota, Y. Shi, Y. Liu, H. Yu, D. Tay, H.K. Ng, X. Wang, K.E. Wong, M. Lam, X.L. Guan, N. Bertin, E. Wong, J. Best, R. Sarangarajan, P. Elliott, E. Riboli, J. Lee, E.S. Lee, J. Ngeow, P. Tan, C. Cheung,C.L. Drum, R.S.Y. Foo, G.A. Michelotti, H. Yu, **P.A. Sheridan,** M. Loh, J.C. Chambers. Metabolome-wide association of carotid intima media thickness identifies FDX1 as a determinant of cholesterol metabolism and cardiovascular risk in Asian populations. Nature Cardiovascular Research, *accepted.*

2. Wood, A.C., Lee, D.J., Sheridan, P., Jensen, E.T., Ramesh, G., Bertoni, A.G., Rich, S.S., Chen, Y.I., Herrington, D., Rotter, J.I., Goodarzi, M.O. Metabolites link intake of a healthy diet to better insulin and glucose homeostasis in the Microbiome and Insulin Longitudinal Evaluation Study (MILES). *Current Developments in Nutrition* (in press; accepted September 22, 2024).

3. Boufaied N, Chetta P, Hallal T, Cacciatore S, Lalli D, Luthold C, Homsy K, Imada EL, Syamala S, Photopoulos C, Di Matteo A, de Polo A, Storaci AM, Huang Y, Giunchi F, **Sheridan PA**, Michelotti G, Nguyen QD, Zhao X, Liu Y, Davicioni E, Spratt DE, Sabbioneda S, Maga G, Mucci LA, Ghigna C, Marchionni L, Butler LM, Ellis L, Bordeleau F, Loda M, Vaira V, Labbé DP, Zadra G. Obesogenic High-Fat Diet and MYC Cooperate to Promote Lactate Accumulation and Tumor Microenvironment Remodeling in Prostate Cancer. Cancer Res. 2024 Jun 4;84(11):1834-1855. doi: 10.1158/0008-5472.CAN-23-0519. PMID: 38831751; PMCID: PMC11148549.

4. Aslamy A, Wood AC, Jensen ET, Bertoni AG, **Sheridan PA**, Wong KE, Ramesh G, Rotter JI, Chen YI, Goodarzi MO. Increased Plasma Branched Short-Chain Fatty Acids and Improved Glucose Homeostasis: The Microbiome and Insulin Longitudinal Evaluation Study (MILES). Diabetes. 2024 Mar 1;73(3):385-390. doi:10.2337/db23-0401. PMID: 37992186; PMCID: PMC10882143

5. Faquih TO, van Klinken JB, Li-Gao R, Noordam R, van Heemst D, Boone S, **Sheridan PA**, Michelotti G, Lamb H, de Mutsert R, Rosendaal FR, van Hylckama Vlieg A, van Dijk KW, Mook-Kanamori DO. Hepatic triglyceride content is intricately associated with numerous metabolites and biochemical pathways. Liver Int. 2023 Jul;43(7):1458-1472. doi: 10.1111/liv.15575. Epub 2023 Apr 5. PMID: 37017544

6. Surendran P, Stewart ID, Au Yeung VPW, Pietzner M, Raffler J, Wörheide MA, Li C, Smith RF, Wittemans LBL, Bomba L, Menni C, Zierer J, Rossi N, **Sheridan PA**, Watkins NA, Mangino M, Hysi PG, Di Angelantonio E,Falchi M, Spector TD, Soranzo N, Michelotti GA, Arlt W, Lotta LA, Denaxas S, Hemingway H, Gamazon ER, Howson JMM, Wood AM, Danesh J, Wareham NJ, Kastenmüller G, Fauman EB, Suhre K, Butterworth AS, Langenberg C. Rare and common genetic determinants of metabolic individuality and their effects on human health. Nat Med. 2022 Nov;28(11):2321-2332. doi: 10.1038/s41591-022-02046-0. Epub 2022 Nov 10. PMID:
36357675; PMCID: PMC9671801.

7. Li-Gao R, Grubbs K, Bertoni AG, Hoffman KL, Petrosino JF, Ramesh G, Wu M, Rotter JI, Chen YI, Evans AM, Robinson RJ, Sommerville L, Mook-Kanamori D, Goodarzi MO, Michelotti GA, **Sheridan PA**. The Roles of Gut Microbiome and Plasma Metabolites in the Associations between ABO Blood

Groups and Insulin Homeostasis: The Microbiome and Insulin Longitudinal Evaluation Study (MILES). Metabolites. 2022 Aug 25;12(9):787. doi: 10.3390/metabo12090787. PMID: 36144194; PMCID: PMC9505353.

8. Cui J, Ramesh G, Wu M, Jensen ET, Crago O, Bertoni AG, Gao C, Hoffman KL, **Sheridan PA,** Wong KE, Wood AC, Chen YI, Rotter JI, Petrosino JF, Rich SS, Goodarzi MO. Butyrate-Producing Bacteria and Insulin Homeostasis: The Microbiome and Insulin Longitudinal Evaluation Study (MILES). Diabetes. 2022 Nov 1;71(11):2438-2446. doi: 10.2337/db22-0168. PMID: 35972231; PMCID: PMC9630078.

9. Honeycutt JB, Liao B, Nixon CC, Cleary RA, Thayer WO, Birath SL, Swanson MD, **Sheridan P**, Zakharova O, Prince F, Kuruc J, Gay CL, Evans C, Eron JJ, Wahl A, Garcia JV. T cells establish and maintain CNS viral infection in HIV-infected humanized mice. J Clin Invest. 2018 Jul 2;128(7):2862-2876. doi: 10.1172/JCI98968. Epub 2018 Jun 4. PMID: 29863499; PMCID: PMC6026008.

10. White KA, Hutton SR, Weimer JM, **Sheridan PA.** Diet-induced obesity prolongs neuroinflammation and recruits CCR2(+) monocytes to the brain following herpes simplex virus (HSV)-1 latency in mice. Brain Behav Immun. 2016 Oct;57:68-78. doi: 10.1016/j.bbi.2016.06.007. Epub 2016 Jun 13. PMID: 27311830; PMCID:
PMC5287935.

11. **Sheridan PA**, Paich HA, Handy J, Karlsson EA, Schultz-Cherry S, Hudgens M, Weir S, Noah T, Beck MA. The antibody response to influenza vaccination is not impaired in type 2 diabetics. Vaccine. 2015 Jun
26;33(29):3306-13. doi: 10.1016/j.vaccine.2015.05.043. Epub 2015 Jun 1. PMID: 26044491; PMCID: PMC4593058.

12. Honeycutt JB, **Sheridan PA**, Matsushima GK, Garcia JV. Humanized mouse models for HIV-1 infection of the CNS. J Neurovirol. 2015 Jun;21(3):301-9. doi: 10.1007/s13365-014-0299-6. Epub 2014 Nov 4. PMID: 25366661; PMCID: PMC4418936

13. Milner JJ, Wang J, **Sheridan PA**, Ebbels T, Beck MA, Saric J. 1H NMR-based profiling reveals differential immune-metabolic networks during influenza virus infection in obese mice. PLoS One. 2014 May 20;9(5):e97238. doi: 10.1371/journal.pone.0097238. PMID: 24844920; PMCID: PMC4028207.

14. Milner JJ, **Sheridan PA,** Karlsson EA, Schultz-Cherry S, Shi Q, Beck MA. Diet- induced obese mice exhibit altered heterologous immunity during a secondary 2009 pandemic H1N1 infection. J Immunol. 2013 Sep 1;191(5):2474-85. doi: 10.4049/jimmunol.1202429. Epub 2013 Jul 31. PMID: 23904168; PMCID: PMC3756476.

15. Paich HA, **Sheridan PA,** Handy J, Karlsson EA, Schultz-Cherry S, Hudgens MG, Noah TL, Weir SS, Beck MA. Overweight and obese adult humans have a defective cellular immune response to pandemic H1N1 influenza A virus. Obesity (Silver Spring). 2013 Nov;21(11):2377-86. doi: 10.1002/oby.20383. PMID: 23512822; PMCID: PMC3695020.

16. Antoniak S, Owens AP 3rd, Baunacke M, Williams JC, Lee RD, Weithäuser A, **Sheridan PA**, Malz R, Luyendyk JP, Esserman DA, Trejo J, Kirchhofer D, Blaxall BC, Pawlinski R, Beck MA, Rauch U, Mackman N. PAR-1 contributes to the innate immune response during viral infection. J Clin Invest. 2013 Mar;123(3):1310-22. doi: 10.1172/JCI66125. Epub 2013 Feb 8. PMID: 23391721; PMCID: PMC3582138.

17. **Sheridan PA**, Paich HA, Handy J, Karlsson EA, Hudgens MG, Sammon AB, Holland LA, Weir S, Noah TL, Beck MA. Obesity is associated with impaired immune response to influenza vaccination in

humans. Int J Obes (Lond). 2012 Aug;36(8):1072-7. doi: 10.1038/ijo.2011.208. PMID: 22024641; PMCID:
PMC3270113.

18. Karlsson EA, **Sheridan PA**, Beck MA. Diet-induced obesity in mice reduces the maintenance of influenza- specific CD8+ memory T cells. J Nutr. 2010 Sep;140(9):1691-7. doi: 10.3945/jn.110.123653. PMID: 20592105; PMCID: PMC2924599.

19. Karlsson EA, **Sheridan PA**, Beck MA. Diet-induced obesity impairs the T cell memory response to influenza virus infection. J Immunol. 2010 Mar 15;184(6):3127-33. doi: 10.4049/jimmunol.0903220. PMID: 20173021.

20. Jaspers I, **Sheridan PA**, Zhang W, Brighton LE, Chason KD, Hua X, Tilley SL. Exacerbation of allergic inflammation in mice exposed to diesel exhaust particles prior to viral infection. Part Fibre Toxicol. 2009 Aug 14;6:22. doi: 10.1186/1743-8977-6-22. PMID: 19682371; PMCID: PMC2739151.

21. Schwerbrock NM, Karlsson EA, Shi Q, **Sheridan PA**, Beck MA. Fish oil-fed mice have impaired resistance to influenza infection. J Nutr. 2009 Aug;139(8):1588-94. doi: 10.3945/jn.109.108027. PMID: 19549756; PMCID: PMC2709305.

22. **Sheridan PA,** Beck MA. The dendritic and T cell responses to herpes simplex virus-1 are modulated by dietary vitamin E. Free Radic Biol Med. 2009 Jun 15;46(12):1581-8. doi: 10.1016/j.freeradbiomed.2009.03.010. PMID: 19303435; PMCID: PMC2693096.

23. Smith AG, **Sheridan PA,** Tseng RJ, Sheridan JF, Beck MA. Selective impairment in dendritic cell function and altered antigen-specific CD8+ T-cell responses in diet-induced obese mice infected with influenza virus. Immunology. 2009 Feb;126(2):268-79. doi: 10.1111/j.1365-2567.2008.02895.x. PMID: 18754811; PMCID: PMC2632688.

24. **Sheridan PA**, Beck MA. The immune response to herpes simplex virus encephalitis in mice is modulated by dietary vitamin E. J Nutr. 2008 Jan;138(1):130-7. PMID: 18156415; PMCID: PMC2430048.

25. **Sheridan PA**, Zhong N, Carlson BA, Perella CM, Hatfield DL, Beck MA. Decreased selenoprotein expression alters the immune response during influenza virus infection in mice. J Nutr. 2007Jun;137(6):1466-71. doi: 10.1093/jn/137.6.1466. PMID: 17513408.

26. Smith AG, **Sheridan PA,** Harp JB, Beck MA. Diet-induced obese mice have increased mortality and altered immune responses when infected with influenza virus. J Nutr. 2007 May;137(5):1236-43. doi: 10.1093/jn/137.5.1236. PMID: 17449587.

27. Stỳblo M, Walton FS, Harmon AW, **Sheridan PA**, Beck MA. Activation of superoxide dismutase in selenium-deficient mice infected with influenza virus. J Trace Elem Med Biol. 2007;21(1):52-62. doi: 10.1016/j.jtemb.2006.11.001. PMID: 17317526.

28. Lioy DT, **Sheridan PA**, Hurley SD, Walton JR, Martin AM, Olschowka JA, Moynihan JA. Acute morphine exposure potentiates the development of HSV-1-induced encephalitis. J Neuroimmunol. 2006 Mar;172(1-2):9-17. doi: 10.1016/j.jneuroim.2005.10.007. PMID: 16325924.

29. **Sheridan PA**, Moynihan JA. Modulation of the innate immune response to HSV-1 following acute administration of morphine: role of hypothalamo-pituitary- adrenal axis. J Neuroimmunol. 2005Jan;158(1-2):145-52. doi: 10.1016/j.jneuroim.2004.09.001. PMID: 15589048.

30. Hunzeker J, Padgett DA, **Sheridan PA**, Dhabhar FS, Sheridan JF. Modulation of natural killer cell activity by restraint stress during an influenza A/PR8 infection in mice. Brain Behav Immun. 2004 Nov;18(6):526-35. doi:10.1016/j.bbi.2003.12.010. PMID: 15331123.

Preprints/Submitted Papers

The Health for Life in Singapore (HELIOS) Study: delivering Precision Medicine research for Asian populations.X. Wang, T. Mina, N. Sadhu, P.R. Jain, H.K. Ng, D.Y. Low, D. Tay, T.Y.Y. Tong, W.-L. Choo, S.K. Kerk, G.L. Low,The HELIOS Study Team, B.C.C. Lam, R. Dalan, G. Wanseicheong, Y.W. Yew, E.J. Leow, S. Brage, G.A.Michelotti, K.E. Wong, **P.A. Sheridan,** P.Y. Low, Z.X. Yeo, N. Bertin, C. Bellis, M. Hebrard, P.-A. Goy, K. Tsilidis,H. Sanikini, X.L. Guan, T.H. Lim, L. Lee, J.D. Best, P. Tan, P. Elliott, E.S. Lee, J. Lee, J. Ngeow, E. Riboli, M. Lam, M. Loh, J.C. Chambers. medRxiv 2024.05.14.24307259; doi: https://doi.org/10.1101/2024.05.14.24307259**.**

Metabolic variation reflects dietary intake in a multi-ethnic Asian population. D.Y. Low, T.H. Mina, N. Sadhu, K.E. Wong, P.R. Jain, R. Dalan, H.K. Ng, W. Xie, B. Lam, D. Tay, X. Wang, Y.W. Yew, J. Best, R. Sarangarajan, P. Elliott, E. Riboli, J. Lee, E.S. Lee, J. Ngeow, P.A. Sheridan, G.A. Michelotti, M. Loh, J. Chambers. medRxiv 2023.12.04.23299350; doi: https://doi.org/10.1101/2023.12.04.23299350**.**