Stanford



Tho Duc Pham

Clinical Professor, Pathology

CLINICAL OFFICE (PRIMARY)

- **Stanford Blood Center**
  3373 Hillview Ave
  MC 5556
  Palo Alto, CA 94304
  Tel (650) 723-2597 **Fax** (650) 725-4470

Bio

CLINICAL FOCUS

- Anatomic and Clinical Pathology
- Transfusion Medicine
- Blood Safety
- Emerging Infectious Disease

ACADEMIC APPOINTMENTS

- Clinical Professor, Pathology

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Scientific Committee Chair, California Blood Bank Society (2016 - present)
- Member, AABB (2013 - present)

PROFESSIONAL EDUCATION

- Fellowship: Stanford University Pathology Fellowships (2014) CA
- Residency: Stanford University Pathology Residency (2013) CA
- Board Certification: Anatomic and Clinical Pathology, American Board of Pathology (2013)
- Board Certification: Blood Banking/Transfusion Medicine, American Board of Pathology (2014)
- Medical Education: University of California, San Diego (2009)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My areas of interest involve exploring antibody function as it relates to transfusion medicine, blood safety, and emerging infectious diseases. This ranges from natural immune responses to the ABO blood group, antibody profiling anti-SARS-CoV-2 antibodies, and studying HEV seroprevalence in the local

community. I am also interested in exploring statistical approaches to improve blood product availability and overall health care efficiency in a tertiary care system.

Teaching

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Transfusion Medicine (Fellowship Program)

Publications

PUBLICATIONS

- **Integrating routine hemoglobin A1c screening in blood donation: A strategy for early diabetes detection and donor health awareness.** *Transfusion*
  Jamal, Y., Layon, A., Michelin, L., Mateo, D., Panesa, D., Meceda, P., Bevington, S., Hodghead, K., Bennett, J., Powers, L., Pandey, S., Kieffer, T., Pham, et al
  2026

- **Impact of Pre-HCT Transfusion on HLA Sensitization and Clinical Implications in HCT**
  Jamal, Y., Yamamoto, F., Pham, T., Arai, S., Zhang, B.
  ELSEVIER SCIENCE INC.2026

- **Holistic evaluation of large language models for medical tasks with MedHELM.** *Nature medicine*
  Bedi, S., Cui, H., Fuentes, M., Unell, A., Wornow, M., Banda, J. M., Kotecha, N., Keyes, T., Mai, Y., Oez, M., Qiu, H., Jain, S., Schettini, et al
  2026

- **Implementation of pathogen reduced cryoprecipitate for surgical services: A retrospective review of blood product utilization and fibrinogen repletion.** *Transfusion*
  Nicholas, J., Graber-Naidich, A., Pham, T., Panigrahi, A. K., Virk, M.
  2025

- **Residual red blood cells in liquid plasma products: A quality assessment.** *American journal of clinical pathology*
  Yigitbilek, F., Pandey, S., Pham, T., Virk, M. S.
  2025

- **Rapid Sterilization of Clinical Apheresis Blood Products Using Ultra-High Dose Rate Radiation.** *International journal of molecular sciences*
  Melemenidis, S., Nguyen, K. D., Baraceros-Pineda, R., Barclay, C. K., Bautista, J., Lau, H. D., Ashraf, M. R., Manjappa, R., Dutt, S., Soto, L. A., Katila, N., Lau, B., Viswanathan, et al
  2025; 26 (6)

- **Disease diagnostics using machine learning of B cell and T cell receptor sequences.** *Science (New York, N.Y.)*
  Zaslavsky, M. E., Craig, E., Michuda, J. K., Sehgal, N., Ram-Mohan, N., Lee, J. Y., Nguyen, K. D., Hoh, R. A., Pham, T. D., Röltgen, K., Lam, B., Parsons, E. S., Macwana, et al
  2025; 387 (6736): eadp2407

- **High-throughput multiplexed serology via the mass-spectrometric analysis of isotopically barcoded beads.** *Nature biomedical engineering*
  Drainas, A. P., McIlwain, D. R., Dallas, A., Chu, T., Delgado-González, A., Baron, M., Angulo-Ibáñez, M., Trejo, A., Bai, Y., Hickey, J. W., Lu, G., Lu, S., Pineda-Ramirez, et al
  2025

- **Effective mitigation of blood culture bottle shortage with diagnostic stewardship interventions.** *Journal of clinical microbiology*
  Hudson, J., Rodriguez Nava, G., Sampson, M. M., Chang, A., Dussaq, A. M., Salinas, J. L., Serbest, A., Pham, T., Banaei, N.
  2025: e0170124

- **Rapid Sterilization of Clinical Apheresis Blood Products using Ultra-High Dose Rate Radiation.** *bioRxiv : the preprint server for biology*
  Melemenidis, S., Nguyen, K. D., Baraceros-Pineda, R., Barclay, C. K., Bautista, J., Lau, H., Ashraf, M. R., Manjappa, R., Dutt, S., Soto, L. A., Katila, N., Lau, B., Visvanathan, et al
  2024

- **Recall of High Bias Point-of-Care Hemoglobin A1c Test.** *Journal of diabetes science and technology*
  Lee, M. Y., Pham, T. D., Maahs, D. M., Prahalad, P.
  2024: 19322968241278744

- **Implementation and early outcomes with Pathogen Reduced Cryoprecipitated Fibrinogen Complex.** *American journal of clinical pathology*
  Sethapati, V. R., Pham, T. D., Quach, T., Nguyen, A., Le, J., Cai, W., Virk, M. S.
  2024

- **SMARTALERT: DESIGNING A MACHINE LEARNING-DRIVEN CLINICAL ALERT BASED ON PROVIDER ATTITUDES**
  Liang, A. S., Ma, S. P., Pham, T. D., Shieh, L., Sharp, C., Chen, J.
  SPRINGER.2024: S925

- **Measuring the effectiveness of online search ads on blood donor recruitment and donation.** *Transfusion*
  McElfresh, D. C., Bennet, J., Enriquez, K., Pham, T. D.
  2024

- **Blood Demand Forecasting and Supply Management: An Analytical Assessment of Key Studies Utilizing Novel Computational Techniques.** *Transfusion medicine reviews*
  Li, N., Pham, T., Cheng, C., McElfresh, D. C., Metcalf, R. A., Russell, W. A., Birch, R., Yurkovich, J. T., Montemayor-Garcia, C., Lane, W. J., Tobian, A. A., Roubinian, N., Seheult, et al
  2023: 150768

- **Germline-encoded specificities and the predictability of the B cell response.** *PLoS pathogens*
  C Vieira, M., Palm, A. E., Stamper, C. T., Tepora, M. E., Nguyen, K. D., Pham, T. D., Boyd, S. D., Wilson, P. C., Cobey, S.
  2023; 19 (8): e1011603

- **Blood transfusion in cardiac surgeries - Toward a personalized protocol.** *American journal of surgery*
  Min, Y., Dalal, A. R., Pedroza, A. J., Pham, T. D., Panigrahi, A. K., Goldstone, A. B., MacArthur, J. W., Woo, Y. J., Baiocchi, M., Fischbein, M. P.
  2023

- **Hepatitis E virus seropositivity in an ethnically diverse community blood donor population.** *Vox sanguinis*
  Mah, J. K., Keck, M., Chu, D. Y., Sooryanarain, H., Sahoo, M. K., Lau, P., Huang, C., Weber, J., Belanger, G. A., Keck, Z., Shan, H., Meng, X., Foung, et al
  2023

- **Targeting Repetitive Laboratory Testing with Electronic Health Records-Embedded Predictive Decision Support: A Pre-Implementation Study.** *Clinical biochemistry*
  Rabbani, N., Ma, S. P., Li, R. C., Winget, M., Weber, S., Boosi, S., Pham, T. D., Svec, D., Shieh, L., Chen, J. H.
  2023

- **Implementation strategy for complete pathogen reduction technology treated apheresis platelet inventory.** *Transfusion*
  Shu, E., Dela Cruz Batilo, C., Sussmann, H., Owen, B., Belanger, G. A., Pandey, S., Pham, T. D.
  2022

- **Transfusion Outcomes between Regular and Low Yield Pathogen Reduced Platelets across Different Patient Populations in a Single Institution**
  Tang, M., Shu, E., Sussman, H., Virk, M., Pandey, S., Shan, H., Pham, T.
  WILEY.2022: 268A

- **Transfusion outcomes between regular and low yield pathogen reduced platelets across different patient populations in a single institution.** *Transfusion*
  Tang, M. S., Shu, E., Sussman, H., Virk, M., Pandey, S., Shan, H., Pham, T.
  2022

- **Hospital red blood cell and platelet supply and utilization from March to December of the first year of the COVID-19 pandemic: The BEST Collaborative Study.** *Transfusion*
  Lu, W., Yazer, M., Li, N., Ziman, A., Wendel, S., Tang, H., Tsang, H., Titlestad, K., Thibodeaux, S. R., Shih, A. W., Poisson, J. L., Pham, T., Pandey, et al
  2022

- **Factors associated with first-time and repeat blood donation: Adverse reactions and effects on donor behavior.** *Transfusion*

Brunson, D. C., Belanger, G. A., Sussmann, H., Fine, A. M., Pandey, S., Pham, T. D.
2022

- **Differential Peripheral Blood Glycoprotein Profiles in Symptomatic and Asymptomatic COVID-19.** *Viruses*
  Pickering, C., Zhou, B., Xu, G., Rice, R., Ramachandran, P., Huang, H., Pham, T. D., Schapiro, J. M., Cong, X., Chakraborty, S., Edwards, K., Reddy, S. T., Guirgis, et al
  2022; 14 (3)

- **Regulation of the BCR signalosome by the class II peptide editor, H2-M, affects the development and repertoire of innate-like B cells.** *Cell reports*
  Ghosh, D., Pham, T. D., Nanaware, P. P., Sengupta, D., Adler, L. N., Li, C. G., He, X., O'Mara, M. E., Kantor, A. B., Nguyen, K. D., Yang, Y., Eisenlohr, L. C., Jensen, et al
  1800; 38 (4): 110200

- **How do I implement pathogen-reduced platelets?** *Transfusion*
  Pham, T. D., Kadi, W., Shu, E., Pandey, S., Sussmann, H., Shan, H., Virk, M. S.
  2021

- **ABO antibody titer performance characteristics and correlates between two automated platforms.** *Transfusion and apheresis science : official journal of the World Apheresis Association : official journal of the European Society for Haemapheresis*
  Corean, J., Gilsdorf, J., Sauter, J., Pamukcu, P., Thorpe, S., Pham, T.
  2021: 103262

- **Shared B cell memory to coronaviruses and other pathogens varies in human age groups and tissues.** *Science (New York, N.Y.)*
  Yang, F., Nielsen, S. C., Hoh, R. A., Roltgen, K., Wirz, O. F., Haraguchi, E., Jean, G. H., Lee, J., Pham, T. D., Jackson, K. J., Roskin, K. M., Liu, Y., Nguyen, et al
  2021

- **A Single Immunization with Spike-Functionalized Ferritin Vaccines Elicits Neutralizing Antibody Responses against SARS-CoV-2 in Mice.** *ACS central science*
  Powell, A. E., Zhang, K., Sanyal, M., Tang, S., Weidenbacher, P. A., Li, S., Pham, T. D., Pak, J. E., Chiu, W., Kim, P. S.
  2021; 7 (1): 183–99

- **Efficient Identification of High-Titer Anti-Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Antibody Plasma Samples by Pooling Method.** *Archives of pathology & laboratory medicine*
  Nguyen, K. D., Wirz, O. F., Röltgen, K., Pandey, S., Tolentino, L., Boyd, S. D., Pham, T. D.
  2021

- **Use of Outpatient-Derived COVID-19 Convalescent Plasma in COVID-19 Patients Before Seroconversion.** *Frontiers in immunology*
  Wirz, O. F., Roltgen, K., Stevens, B. A., Pandey, S., Sahoo, M. K., Tolentino, L., Verghese, M., Nguyen, K., Hunter, M., Snow, T. T., Singh, A. R., Blish, C. A., Cochran, et al
  2021; 12: 739037

- **Identifying correlations between donor demographics and isohemagglutinin titers as a potential method to screen for low-titer group O whole blood.** *Transfusion and apheresis science : official journal of the World Apheresis Association : official journal of the European Society for Haemapheresis*
  Jacob, R. P., Wang, D., Hodghead, K., Pham, T. D.
  2020: 102970

- **SARS-CoV-2 Antibody Responses Correlate with Resolution of RNAemia But Are Short-Lived in Patients with Mild Illness.** *medRxiv : the preprint server for health sciences*
  Röltgen, K., Wirz, O. F., Stevens, B. A., Powell, A. E., Hogan, C. A., Najeeb, J., Hunter, M., Sahoo, M. K., Huang, C., Yamamoto, F., Manalac, J., Otrelo-Cardoso, A. R., Pham, et al
  2020

- **The class II peptide editor, H2-M, affects the development and repertoire of B-1 cells**
  Ghosh, D., Pham, T. D., He, X., O'mara, M. E., Kantor, A. B., Khoa Nguyen, Sengupta, D., Eisenlohr, L. C., Jensen, P. E., Herzenberg, L. A., Boyd, S. D., Ghosn, E. E. B., Mellins, E. D.
  AMER ASSOC IMMUNOLOGISTS.2020

- **Defining the features and duration of antibody responses to SARS-CoV-2 infection associated with disease severity and outcome.** *Science immunology*

Röltgen, K. n., Powell, A. E., Wirz, O. F., Stevens, B. A., Hogan, C. A., Najeeb, J. n., Hunter, M. n., Wang, H. n., Sahoo, M. K., Huang, C. n., Yamamoto, F. n., Manohar, M. n., Manalac, et al
2020; 5 (54)

- **Optimizing O-negative RBC utilization using a data-driven approach.** *Transfusion*
  Virk, M. S., Lancaster, D. n., Quach, T. n., Lim, A. n., Shu, E. n., Belanger, G. n., Pham, T. D.
  2020
- **A single immunization with spike-functionalized ferritin vaccines elicits neutralizing antibody responses against SARS-CoV-2 in mice.** *bioRxiv : the preprint server for biology*
  Powell, A. E., Zhang, K. n., Sanyal, M. n., Tang, S. n., Weidenbacher, P. A., Li, S. n., Pham, T. D., Pak, J. E., Chiu, W. n., Kim, P. S.
  2020
- **Symptomatic SARS-CoV-2 infections display specific IgG Fc structures.** *medRxiv : the preprint server for health sciences*
  Chakraborty, S. n., Edwards, K. n., Buzzanco, A. S., Memoli, M. J., Sherwood, R. n., Mallajosyula, V. n., Xie, M. M., Gonzalez, J. n., Buffone, C. n., Kathale, N. n., Providenza, S. n., Jagannathan, P. n., Andrews, et al
  2020
- **SARS-CoV-2 RNAemia in a Healthy Blood Donor 40 Days After Respiratory Illness Resolution.** *Annals of internal medicine*
  Pham, T. D., Huang, C. n., Wirz, O. F., Röltgen, K. n., Sahoo, M. K., Layon, A. n., Pandey, S. n., Foung, S. K., Boyd, S. D., Pinsky, B. A.
  2020
- **Interferon-gamma release assay for accurate detection of SARS-CoV-2 T cell response.** *Clinical infectious diseases : an official publication of the Infectious Diseases Society of America*
  Murugesan, K. n., Jagannathan, P. n., Pham, T. D., Pandey, S. n., Bonilla, H. F., Jacobson, K. n., Parsonnet, J. n., Andrews, J. R., Weiskopf, D. n., Sette, A. n., Pinsky, B. A., Singh, U. n., Banaei, et al
  2020
- **Proinflammatory IgG Fc structures in patients with severe COVID-19** *Nature Immunology*
  Chakraborty, S., Gonzales, J., Edwards, K., Mallajosyulla, V., Buzzanco, A. S., Sherwood, R., Buffone, C., Kathale, N., Providenza, S., Xie, M. M., Andrews, J. R., Blish, C. A., Singh, et al
  2020
- **High-Titer Isohemagglutinins in Platelet Donors**
  Jacob, R., Wang, D., Hodghead, K., Pham, T.
  WILEY.2019: 53A–54A
- **A FLOW CYTOMETRY BASED ABO-BLOOD GROUP ANTIBODY ASSAY (FABO-AB) FOR PREDICTING HEMOLYSIS IN ABO-MISMATCHED BONE MARROW TRANSPLANTATION (BMT)**
  Liu, H., Nguyen, K. D., Virk, M. S., Pham, T. D., Chen, G.
  ELSEVIER SCIENCE INC.2019: 40
- **Shaping of infant B cell receptor repertoires by environmental factors and infectious disease.** *Science translational medicine*
  Nielsen, S. C., Roskin, K. M., Jackson, K. J., Joshi, S. A., Nejad, P., Lee, J., Wagar, L. E., Pham, T. D., Hoh, R. A., Nguyen, K. D., Tsunemoto, H. Y., Patel, S. B., Tibshirani, et al
  2019; 11 (481)
- **Shaping of infant B cell receptor repertoires by environmental factors and infectious disease** *SCIENCE TRANSLATIONAL MEDICINE*
  Nielsen, S. C. A., Roskin, K. M., Jackson, K. J. L., Joshi, S. A., Nejad, P., Lee, J., Wagar, L. E., Pham, T. D., Hoh, R. A., Nguyen, K. D., Tsunemoto, H. Y., Patel, S. B., Tibshirani, et al
  2019; 11 (481)
- **Molecular Characterizations of Anti-ABO Blood Group Antibodies**
  Nguyen, K., Pham, T., Boyd, S.
  WILEY.2018: 22A
- **Streamlining a blood center and hospital transfusion service supply chain with an informatics vendor-managed inventory solution: development, implementation, and 3-month follow-up** *TRANSFUSION*
  Tsang, H. C., Garcia, A., Scott, R., Lancaster, D., Geary, D., Anh-Thu Nguyen, Shankar, R., Buchanan, L., Pham, T. D.
  2018; 58 (7): 1718–25

- **Big data modeling to predict platelet usage and minimize wastage in a tertiary care system** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Guan, L., Tian, X., Gombar, S., Zemek, A. J., Krishnan, G., Scott, R., Narasimhan, B., Tibshirani, R. J., Pham, T. D.
  2017; 114 (43): 11368–73

- **Occult Hemolytic Anemia Due to Anti-Mur in a Patient Receiving Blood from a Region with a Prominent Asian Donor Population**
  Oak, J., Mallari, R., de Asis, M., Shu, E., Hughes, J., Pham, T.
  WILEY.2017: 178A

- **Streamlining a Blood Center and Hospital Transfusion Service Supply-Chain with an Informatics Vendor-Managed Inventory Solution**
  Tsang, H. C., Lancaster, D., Geary, D., Scott, R., Nguyen, A., Garcia, A., Shankar, R., Buchanan, L., Pham, T.
  WILEY.2017: 211A

- **Normalizing Microbiota-Induced Retinoic Acid Deficiency Stimulates Protective CD8(+) T Cell-Mediated Immunity in Colorectal Cancer.** *Immunity*
  Bhattacharya, N., Yuan, R., Prestwood, T. R., Penny, H. L., DiMaio, M. A., Reticker-Flynn, N. E., Krois, C. R., Kenkel, J. A., Pham, T. D., Carmi, Y., Tolentino, L., Choi, O., Hulett, et al
  2016; 45 (3): 641-655

- **Human B-cell isotype switching origins of IgE** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY*
  Looney, T. J., Lee, J., Roskin, K. M., Hoh, R. A., King, J., Glanville, J., Liu, Y., Pham, T. D., Dekker, C. L., Davis, M. M., Boyd, S. D.
  2016; 137 (2): 579-?

- **Single B-cell deconvolution of peanut-specific antibody responses in allergic patients** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY*
  Hoh, R. A., Joshi, S. A., Liu, Y., Wang, C., Roskin, K. M., Lee, J., Pham, T., Looney, T. J., Jackson, K. J., Dixit, V. P., King, J., Lyu, S., Jenks, et al
  2016; 137 (1): 157-167

- **Normalizing microbiota-induced retinoic acid deficiency stimulates protective CD8+ T-cell-mediated immunity in colorectal cancer** *Immunity*
  Bhattacharya, N., Yuan, R., Prestwood, T., Penny, H., DiMaio, M., Reticker-Flynn, N., Krois, C., Kenkel, J., Pham, T., Carmi, Y., Tolentino, L., Choi, O., Hulett, et al
  2016; 45: 641–55

- **How do I implement an automated screen for high-titer ABO antibody as an inventory management tool for ABO plasma-incompatible platelets?** *TRANSFUSION*
  Fontaine, M. J., Webster, J., Gomez, S., Pham, T. D., Goodnough, L. T., Galel, S. A.
  2015; 55 (12): 2783-2789

- **How do I implement an automated screen for high-titer ABO antibody as an inventory management tool for ABO plasma-incompatible platelets?** *Transfusion*
  Fontaine, M. J., Webster, J., Gomez, S., Pham, T. D., Goodnough, L. T., Galel, S. A.
  2015; 55 (12): 2783-9

- **IgH sequences in common variable immune deficiency reveal altered B cell development and selection.** *Science translational medicine*
  Roskin, K. M., Simchoni, N., Liu, Y., Lee, J., Seo, K., Hoh, R. A., Pham, T., Park, J. H., Furman, D., Dekker, C. L., Davis, M. M., James, J. A., Nadeau, et al
  2015; 7 (302): 302ra135-?

- **IgH sequences in common variable immune deficiency reveal altered B cell development and selection.** *Science translational medicine*
  Roskin, K. M., Simchoni, N., Liu, Y., Lee, J., Seo, K., Hoh, R. A., Pham, T., Park, J. H., Furman, D., Dekker, C. L., Davis, M. M., James, J. A., Nadeau, et al
  2015; 7 (302): 302ra135-?

- **Human B-cell isotype switching origins of IgE.** *The Journal of allergy and clinical immunology*
  Looney, T. J., Lee, J. Y., Roskin, K. M., Hoh, R. A., King, J., Glanville, J., Liu, Y., Pham, T. D., Dekker, C. L., Davis, M. M., Boyd, S. D.
  2015

- **Single B-cell deconvolution of peanut-specific antibody responses in allergic patients.** *The Journal of allergy and clinical immunology*
  Hoh, R. A., Joshi, S. A., Liu, Y., Wang, C., Roskin, K. M., Lee, J. Y., Pham, T., Looney, T. J., Jackson, K. J., Dixit, V. P., King, J., Lyu, S. C., Jenks, et al

2015

- **Effects of Aging, Cytomegalovirus Infection, and EBV Infection on Human B Cell Repertoires** *JOURNAL OF IMMUNOLOGY*
  Wang, C., Liu, Y., Xu, L. T., Jackson, K. J., Roskin, K. M., Pham, T. D., Laserson, J., Marshall, E. L., Seo, K., Lee, J., Furman, D., Koller, D., Dekker, et al
  2014; 192 (2): 603-611