Tat Thang Vo, Pharm.D., Ph.D.

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Contact Information

Team EpiDerme (Epidemiology in Dermatology and Evaluation of Therapeutics).
INSERM U955. University Paris Est Créteil.

`Google Scholar:` Tat-Thang Vo
`Linkedin:` Tat Thang Vo
✉ `E-mail:` tat-thang.vo@u-pec.fr

Academic positions

Chair of junior professor in biostatistics 9/2023–now

- University Paris Est Créteil (France)
  Mondor Institut of Biomedical Research, INSERM U955
  Research Group EpiDerme
  Epidemiology in Dermatology and Evaluation of Therapeutics.

Education

Ghent University (Belgium) and **Université Paris Cité (France)** 2016–2020

- Ph.D. in Biostatistics.
- Topic: Causal inference in meta-analysis and mediation analysis.
- Advisors: Pr. Stijn Vansteelandt and Pr. Raphael Porcher.

University Paris Cité (France) 2014–2016

- M.Sc., Comparative Effectiveness Research. First-class honors.
- ConEd., Clinical Pharmacy. First-class honors.

The Open University (UK) 2017–2020

- B.Sc.(Hons), Mathematics. First-class honors.

Hanoi University of Pharmacy (Vietnam) 2009–2014

- Pharm.D., Clinical Pharmacy. First-class honors. Valedictorian.

Research Experience

University Paris Cité (France) 5/2024–5/2025

- Visiting researcher.
- Research Group MAP5. Applied Mathematics, Probability and Statistics.

The Wharton School, University of Pennsylvania (United States) 11/2020 – 8/2023

- Postdoctoral Research Fellow. Department of Statistics and Data Science.
- Advisors: Pr. Dylan Small and Pr. Sean Hennessy.

University of Amsterdam (The Netherlands) 10/2018 – 12/2018

- PhD Secondment. Department of Clinical Epidemiology and Biostatistics.
- Mentor: Pr. Koos Zwinderman.

University of Bristol (United Kingdom) 7/2018 – 9/2018

- PhD Secondment. Department of Population Health Science.
- Mentor: Pr. Julian Higgins.

France Cochrane Center, Université Paris Cité (France) 7/2017 – 1/2018

- PhD Secondment.
- Mentor: Pr. Raphael Porcher.

INSERM U1153, Team METHODS, Université Paris Cité (France) 2/2016 – 7/2016

- Research Intern.
- Mentor: Pr. Raphael Porcher and Dr. Alexandre Vivot.

Reseacrch funding

French National Research Agency (Agence Nationale de Recherche)

- Role: Principle investigator.
- Grant number: 23R09551S-MEDIATION.
  Topic: Leveraging the use of causal inference methods in evaluating the effectiveness and safety of systemic treatments for psoriasis.

Novo Nordisk (Denmark)

- Role: Principle investigator.

- Grant number: 25R09121C-DEVSTAR.
  Topic: Causally Interpretable Network Meta-Analysis (CI-NMA): fit-for-purpose methods for decision-making.

Honors and Awards

1. New Faculty Travel Grant Award, Institute of Mathematical Statistics 8/2022
2. Junior Researcher Travel Grant, National Science Foundation 5/2022
3. Third Prize, 2019 TEDxGhent Research Rally 11/2019
4. Norman Breslow Award, American Statistical Association 8/2019
5. Student Conference Award, International Society of Clinical Biostatistics 8/2018
6. Marie Sklodowska-Curie Actions funding (35.000 EUR/year), project MiRoR 2016–2019
7. Ile-de-France International Master Scholarship (10.400 EUR/year) 2014–2016
8. French Ministry of Europe and Foreign Affairs Master Scholarship (11.000 E/year) 2015–2016
9. Agence Universitaire de la Francophonie Master Scholarship (7.000 EUR/year) 2014–2015
10. Valedictorian, Hanoi University of Pharmacy 6/2014
11. Full Academic Scholarships, Hanoi University of Pharmacy 2009–2014
12. CJ Pharmaceutical Coporation Scholarship 2013–2014

Publications

(∗): Equal contribution

(†): Senior author

Statistical Methods

1. **Vo T**, Le K, Afach S, Vansteelandt S. Integration of aggregated data in causally interpretable meta-analysis by inverse weighting. Biometrics. Under revision.
2. Le K, Beclin MF, Afach S, **Vo T**†. Transportability of aggregate trial results to an external environment in causally interpretable meta-analysis. Journal of the Royal Statistical Society, Series A. Under revision.
3. **Vo T**, Wiliams NT, Liu L, Rudolph KE, Diaz I. Recanting twins: addressing intermediate confounding in mediation analysis. Stat Med. Under revision.
4. **Vo T**, Ye T, Ertefaie A, Roy S, Flory J, Hennessy S, Vansteelandt S, Small D. Marginal Structural Models for Instrumented Difference in Difference design. Electron J Statist. 2024;18(2):5132-5155. doi: 10.1214/24-EJS2313.
5. Gilbert B, Diaz I, Rudolph K, **Vo T**†. A novel decomposition to explain heterogeneity in observational and randomized studies of causality. Biostatistics. In press.
6. Roy S, Ye T, Ertefaie A, **Vo T**, Flory J, Hennessy S, Small D. Group Sequential Testing under Instrumented Difference-in-Difference approach. Stat Med. 2023;42(21):3838-3859. doi:10.1002/sim.9836.
7. **Vo T**, Davies H, Hackett R, Vansteelandt S. Longitudinal mediation analysis of time-to-event outcome in the presence of competing risk. Lifetime Data Anal. 2022;28:380–400. doi:10.1007/s10985-022-09555-7.
8. **Vo T**, Porcher R, Vansteelandt S. Assessing the impact of case-mix heterogeneity in individual participant data meta-analysis: Novel use of I2 statistic and prediction interval. Research Methods in Medicine & Health Sciences. 2021;2(1):12-30.doi:10.1177/2632084320957207.
9. **Vo T**, Porcher R, Chaimani A, Vansteelandt S. A Novel Approach for Identifying and Addressing Case-Mix Heterogeneity in Individual Participant Data Meta-Analysis. Res Synth Methods. 2019;10(4):582-596. doi:10.1002/jrsm.1382.

Epidemiological Applications

1. **Vo T**, Cashin A, Vanderweele T, MacKinnon D, Preacher K, Rudolph KE, Boutron I, Loh WW, Lee H, Vansteelandt S. Assessing bias in mediation analysis. Under revision.
2. Cashin A*, **Vo T***. Indirect effects in mediation analyses should be tested for statistical significance. J Clin Epidemiol. 2024;172. doi:10.1016/j.jclinepi.2024.111395.
3. Truong B, Tran LAT, Pham T, Nguyen TA, **Vo T**†. Population adjustment for indirect treatment comparison in health technology assessment: a methodological systematic review. Res Syn Meth. 2023;14(5):660-670. doi:10.1002/jrsm.1653.
4. Nguyen V, Sharp M, Superchi C, Baron G, Glonti K, Blanco D, Olsen M, **Vo T**, Olarte C, Neveol A, Hren D, Ravaud P, Boutron I. Environmental influences on biomedical doctoral students' research practices when facing dilemmas: vignette-based randomized control trials. Sci Rep 13, 16371 (2023). doi:10.1038/s41598-023-42121-1.

5. **Vo T**. A cautionary note on the use of G-computation in population adjustment. Res Syn Meth. 2023;1-4. doi:10.1002/jrsm.1621.
6. van Lancker K*, **Vo T***, Akacha M*. Estimands in heath technology assessment: a causal inference perspective. Stat Med. 2022;41(28):5577-5585. doi:10.1002/sim.9539.
7. Vuong ML, Tu PHT, Duong KL, **Vo T**†. Development of minimum reporting sets of patient characteristics in epidemiological research: a methodological systematic review. Research Methods in Medicine & Health Sciences. 2023;1-14. doi:10.1177/26320843231191777.
8. **Vo T**, Cashin A, Superchi C, Tu PHT, Nguyen TB, Boutron I, MacKinnon D, Vanderweele T, Lee H, Vansteelandt S. Current quality assessment practice in systematic reviews of mediation studies: an overview of systematic reviews. J Clin Epidemiol. 2022;143:37-148. doi:10.1016/j.jclinepi.2021.12.013.
9. **Vo T**, Vansteelandt S. Challenges in systematic reviews and meta-analyses of mediation studies. Am J Epidemiol. 2022;191(6), 1098-1106. doi:10.1093/aje/kwac028.
10. **Vo T**, Superchi C, Boutron I, Vansteelandt S. The conduct and reporting of mediation analysis in recently published randomized controlled trials: results from a methodological systematic review. J Clin Epidemiol. 2020;117:78-88. doi:10.1016/j.jclinepi.2019.10.001.
11. **Vo T**, Vivot A, Porcher R. Impact of Biomarker-based Design Strategies on the Risk of False-Positive Findings in Targeted Therapy Evaluation. Clin Cancer Res. 2018;24(24):6257-6264. doi:10.1158/1078-0432.CCR-18-0328.

Clinical Applications

1. Kpenou FC, Han J, Fadel M, **Vo T**, Ju HJ, Lee S, Griffiths CEM, Lim HW, French LE, Flohr C, Parisi R, Jemec GBE, Bae JM, Tran VT, Descatha A, Ezzedine K. A systematic review of dermatoses' impact on work. Part I: qualitative synthesis. Under review.
2. Kpenou FC, Han J, Fadel M, **Vo T**, Ju HJ, Lee S, Griffiths CEM, Lim HW, French LE, Flohr C, Parisi R, Jemec GBE, Bae JM, Tran VT, Descatha A, Ezzedine K. A systematic review of dermatoses' impact on work. Part II: meta-analysis. Under review.
3. Le K, **Vo T***,†, Sbidian E*,†. Serious and out-of-hospital infection risk among psoriasis biologic-new users: a nationwide cohort study. J Am Acad Dermatol. Under review.
4. Le K, **Vo T***,†, Sbidian E*,†. Impact of concomitant methotrexate on the persistence of TNF inhibitors in psoriasis. Under review.
5. Tankovic K, Claudepierre P, **Vo T**, Le K, Iggui S, Penso L, Sbidian E, Pina-Vegas L. Assessment of cancer risk according to duration of exposure to targeted therapies in patients with spondyloarthritis: a nationwide cohort study. Under review.
6. **Vo T**, Roy S, Ye T, Erterfaie A, Nguyen TPP, Flory J, Leonard CE, Small DS, Hennessy S. Effect of exogenous testosterone on cardiovascular, cerebrovascular, and thromboembolic adverse events: Results of three complementary research designs. Am J Epidemiol. doi:10.1093/aje/kwaf098.
7. Nguyen TPP, Hennessy S, Brensinger CM, Bilker WB, Dember LM, Miano TA, **Vo T**, Willis AW, Leonard CE. Emulated target trials assessing the effect of empiric potassium supplementation on mortality, sudden cardiac arrest and stroke among furosemide initiators. Clin Pharmaco Ther. Under revision.
8. Murillo C, Cerezo-Téllez E, Torres-Lacomba M, Pham TQ, Lluch E, Falla D, **Vo T**†. Unravelling the mechanisms behind the short-term effects of dry needling: new insights from a mediation analysis with repeatedly measured mediators and outcomes. Arch Phys Med Rehabil. 2024;105(12):2269-2276. doi: 10.1016/j.apmr.2024.07.016.
9. Hackett R, **Vo T**, Vansteelandt S, Davies-Kershaw H. The role of loneliness on hearing ability and dementia: a novel mediation approach. J Am Geriatr Soc. 2023;71(9):2834-2844. doi:10.1111/jgs.183962844.
10. Murillo C, **Vo T**, Vansteelandt S, Harrison L, Cagnie B, Coppieters I, Chys M, Timmers I, Meeus M. How and for whom do cognitive behavioral therapies for chronic pain work? A systematic review and meta-analysis of specific moderators and mediators of treatment outcome in musculoskeletal pain. Clin Psychol Rev. 2022;94:102160. doi:10.1016/j.cpr.2022.102160.

ONGOING PROJECT

Statistical Methods

1. **Vo T**, Chambaz A. Causal optimal transport of treatment effect to a target population with limited individual-level data.

2. Roma E, Beclin MF, Remiro-Azocar A, Shu Y, **Vo T**†. Improving estimation efficiency for matching-adjusted indirect comparisons.
3. **Vo T**, Nguyen L, Le K, Yu R, Small D. Counter-matching and matching in nested case-control sampling.
4. Beclin MF, Diaz I, **Vo T**†. Targeted difference-in-difference learning for survival outcomes.
5. Beclin MF, **Vo T**†. Causally interpretable meta-analysis of mediation analyses.
6. Beclin MF, **Vo T**†. Causally interpretable meta-analysis of mediation analyses with survival outcome.
7. Beclin MF, **Vo T**†. Federated causally interpretable meta-analysis.

Epidemiological and Clinical Applications

1. Tu PHT, Le K, Ngo L, **Vo T**†. On the sign and ranking of recanting-twin path-specific effects.
2. Mauffette N, **Vo T**, Lefebvre G. Bias of non-causal approaches in causal mediation analysis with non-linearities.
3. Le K, Sbidian E, **Vo T**†. Instrumented difference-in-differences with case-control sampling.

Book chapters

1. Nguyen TL, **Vo T**. Understanding and defining causal effects. (Forthcoming). In *Comparative Effectiveness and Personalized Medicine Research Using Real-World Data*. Edited by Debray T, Nguyen TL, Platt R. Chapman & Hall/CRC Handbooks of Modern Statistical Methods.

Professional services

Editorial activities & professional memberships

1. International Journal of Biostatistics. Associated Editor. 3/2023-now
2. Europeran Federation of Pharmaceutical Industries and Associations & European Federation of Statisticians in the Pharmaceutical Industry Working Group on Estimands for Meta-Analysis. 10/2025-now

Peer-review activities

Journal of the American Statistical Association (×2); Biometrics (×5); Biometrika, Journal of Causal Inference; Journal of the Royal Statistical Society Series C, International Journal of Biostatistics; Research Synthesis Methods (×2); Epidemiology (×2); Clinical Trials; BMC Biomedical Research Methodology (×2); Biometrical Journal, Value in Health, Aging and Mental Health, Multivariate Behavioral Research, Statistics in Medicine, Journal of Computational and Graphical Statistics.

Teaching experience

Semester-long courses

1. **Lecturer in charge**. Causal Inference. Autumn 2024, 2025
   MSc. Public Health Research. University Paris Saclay.
2. **Teaching assistant**. Survival Analysis. Spring 2020
   MSc Statistical Data Analysis. Ghent University.
3. **Co-lecturer**. Advanced Biostatistics. Autumn 2017
   University Paris Cité.

Short courses and workshops

1. A Gentle Introduction To Causal Diagrams. 10/2024
   College of Health Sciences. Vin University.
2. Causal Inference in Medical Research. 04/2024
   Graduate School of Public Health. University Paris Saclay.
3. Introduction to Clinical Trials and Evidence Synthesis. 7/2016; 7/2017
   Summer school of clinical trials. Hanoi University of Pharmacy.

Research advising

Postdocs

1. Enrico Roma. Biostatistics. 2025 - 2028
   Topic: Causally interpretable network meta-analysis.
   Coadvisor: Antonio Remiro Azocar (Novo Nordisk, 10%).
2. Marie-Félicia Beclin. Biostatistics. 2025 - 2027
   Topic: Causal meta-analysis of mediation analyses and federated learning.

Doctoral students

1. Khoi Le. Biostatistics. 2023–2026
   Topic: Efficacy and safety of biologic treatments in psoriasis: causal inference from observational claim data.
   Coadvisor: Emilie Sbidian (University Paris Est Créteil, 50%).

Master students and mentees

1. Jeremy Sarri (student). MSc. Probability & Statistics. 2025-2026
   University Gustave Eiffel. Coadvisor: Marie-Felicia Beclin (50%).
   Topic: Federated causal meta-analysis of mediation analyses.
2. Aganze Baleke Jonathan (student). MSc. Applied Economics. 2025-2026
   University Paris-Est Créteil. Coadvisor: Marie-Felicia Beclin (50%).
   Topic: Federated causally interpretable meta-analysis.
3. Lam Nguyen (student). MSc. Public Health. 2025-2026
   University Paris Saclay. Coadvisor: Khoi Le (50%).
   Topic: Addressing confounding in counter-matched nested case-control design.
4. Long Ngo (student). MSc. Quantitative Epidemiology. 2025–2026
   Hasselt University. Topic: On the sign and ranking of recanting-twin path-specific effects.
5. Nicolas Mauffette (student). MSc. Biostatistics. 2024–now
   University of Québec at Montréal. Coadvisor: Geneviève Lefebvre (50%).
   Topic: Bias of non-causal approaches in mediation analysis under non-linearities.
6. Bang Truong (mentee). PhD. Epidemiology. 2021–2022
   Auburn University. Topic: A systematic review of population adusted-indirect comparisons in health technology assessment.
   First placement: Real-world evidence data scientist, Abbvie, USA.
7. Luong Vuong (mentee). MSc. Epidemiology. 2021–2022
   Antwerp University. Topic: Methods for developing minimum reporting sets of patient characteristics in epidemiological research.
   First placement: PhD. candidate in epidemiology, KU Leuven, Belgium.

PhD dissertation committee

1. Examinator for Arnaud Serret-Larmande. Biostatistics. 12/2025
   Sorbonnes University. Topic: Advancing population-adjusted indirect comparisons: methods, assumptions and applications.

Conference & Seminar

Invited talks

1. Joint Statistical Meetings. American Statistical Association. Boston, USA. 8/2026
   Integration of aggregated data in causally interpretable meta-analysis by inverse weighting.
2. 33rd International Biometric Conference. Seoul, Korea. 6/2026
   Causally interpretable meta-analysis of mediation analyses.
3. The European Conference on AI for Clinical Applications. Brussels, Belgium. 3/2026
   Causal transport of treatment effects to target populations for health technology assessment.
4. 19th International Joint Conference on Computational and Financial Econometrics (CFE) and Computational and Methodological Statistics (CMStatistics). London, UK. 12/2025
   Targeted learning of treatment efffect across populations by optimal transport.
5. 2024 IMS International Conference on Statistics and Data Science, Nice, France. 12/2024
   Causally interpretable meta-analysis.
6. Mediation Research Days Conference. Montreal, Canada. 9/2024
   Recanting twins: addressing intermediate confounding in mediation analysis.
   Chair of the working group "ROBIMA: a quality assessment tool for mediation analysis".
7. Pacific Causal Inference Conference. Shanghai, China. 7/2024
   Recanting twins: addressing intermediate confounding in mediation analysis.
   Chair of the online session 1.

8. Joint Congress of Cochrane Skin Group and European Dermato-Epidemiology Network. Paris, France. 4/2024
   Population-adjusted indirect comparison in health technology assessment: methods, challenges and current practice.
9. International Society for Health Economics and Outcomes Research (ISPOR) Student Chapter Meeting, Auburn University. 10/2022
   Population-adjusted indirect comparisons in health technology assessment

Contributed talks at conferences and departmental seminars

1. PreMeDICaL Inria-Inserm team, University of Montpellier. 10/2025
   Targeted learning of treatment effect across populations by optimal transport.
2. European Causal Inference Meeting, Ghent, Belgium. 4/2025
   Causally interpretable meta-analysis under restricted access to individual-level data.
3. Causality and Missing Data Group Meeting, North Carolina State University. 2/2024
   Transportability under restricted access to individual-level data: methods and applications in meta-analysis.
4. Epidemiology, Biostatistics and Clinical Trial Unit, Pitié Salpêtrière Hospital. 1/2024
   A propensity score weighting approach to integrate aggregated data in random-effect individual-level data meta-analysis.
5. Department of Biostatistics Seminar, Vanderbilt University Medical Center. 2/2023
   Causal methods for treatment effect estimation and heterogeneity assessment using real-world data.
6. Division of Pharmacoepidemiology and Pharmacoeconomics Seminar, Brigham's Women Hospital, Harvard Medical School. 2/2023
   Causal methods for treatment effect estimation and heterogeneity assessment using real-world data.
7. Real-World Health Navigator (RWHN) Impact Engine Initiative, Northeastern University. 2/2023
   Causal methods for treatment effect estimation and heterogeneity assessment using real-world data.
8. American Causal Inference Conference, University of California - Berkeley. 5/2022
   Heterogeneity assessment in causal data fusion problems
9. Center of Causal Inference Seminar, University of Pennsylvania. 3/2022
   Heterogeneity assessment in causal data fusion problems
10. Center for Research on Healthcare Seminar, University of Pittsburgh. 6/2022
    Heterogeneity assessment in causal data fusion problems
11. Division of Biostatistics Seminar, Department of Pharmacology, Physiology and Cancer Biology. Thomas Jefferson University. 8/2022
    Heterogeneity assessment in causal data fusion problems
12. IMS New Researchers Conference, George Mason University. 8/2022
    Heterogeneity assessment in causal data fusion problems
13. American Causal Inference Conference. University of California - Berkeley. 5/2022
    Structural Mean Models for Instrumented Difference-in-Difference Design
14. Annual Conference of the International Society for Clinical Biostatistics. Leuven, Belgium. 7/2019
    Novel approaches to address case-mix heterogeneity in meta-analysis
15. Joint Statistical Meeting, American Statistical Association. Denver, Colorado. 7/2019
    Novel approaches to address case-mix heterogeneity in meta-analysis
16. Francophone Conference in Clinical Epidemiology. Toulouse, France. 5/2019
    Novel approaches to address case-mix heterogeneity in meta-analysis
17. Cochrane Colloquium. Edinburgh, UK. 9/2019
    Novel approaches to address case-mix heterogeneity in meta-analysis
18. Joint International Society for Clinical Biostatistics and Australian Statistical Conference. Melbourne, Australia. 8/2018
    Rethinking meta-analysis: addressing problems of non-transportability when combining treatment effects across patient populations.

19. Annual Meeting of the Society of Research Synthesis Methodology. Bristol, UK. 7/2018
    Rethinking meta-analysis: addressing problems of non-transportability when combining treatment effects across patient populations.
20. European Causal Inference Meeting. Florence, Italy. 4/2018
    Rethinking meta-analysis: addressing problems of non-transportability when combining treatment effects across patient populations.