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

CONTACT INFORMATION

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

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CURRENT POSITIONS

Chair of junior professor in biostatistics 9/2023–now

- Faculty of Medicine. University Paris Est Créteil (France).
- Research Group EpiDerme.
  Epidemiology in Dermatology and Evaluation of Therapeutics.

EDUCATION

Ghent University (Belgium) and **The University of Paris (France)** 2016–2020

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

The University of Paris (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

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, The University of Paris (France) 7/2017 – 1/2018

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

INSERM U1153, Team METHODS, The University of Paris (France) 2/2016 – 7/2016

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

Bach Mai hospital (Vietnam) 2013 – 2014

- Clinical Intern. Department of Nephrology and Department of Pharmacy.
- Mentor: Pr. Dinh Thi Kim Dung and Dr. Vu Dinh Hoa.

Vietnam National Center of Drug Information and Adverse Drug Reactions 2012 – 2013

- Collaborator of the Vietnamese Journal of Drug Information and Pharmacovigilance.
- Mentor: Pr. Nguyen Hoang Anh

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

PUBLICATIONS

(∗): EQUAL
CONTRIBUTION

(†): SENIOR
AUTHOR

Statistical Methods

1. **Vo T**, Wiliams NT, Liu L, Rudolph KE, Diaz I. Recanting twins: addressing intermediate confounding in mediation analysis - under review.

2. **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 - under revision.

3. **Vo T**, Rudolph KE, Diaz I. Heterogeneity assessment in causal data fusion problems - under review.

4. 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. doi:10.1002/sim.9836.

5. **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.

6. **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.

7. **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. 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.

2. 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.

3. **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.

4. 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.

5. 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.

6. **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.

7. **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.

8. **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.

9. **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. 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.

2. 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**, Porcher R, Vansteelandt S. Integration of aggregated data in causally interpretable meta-analysis.

2. **Vo T**, Yu R, Small D. Counter-matching matching in nested case-control sampling.

3. Le K, Bettuzzi T, **Vo T**. A propensity score weighting approach to integrate aggregated data in random-effect meta-analysis of individual data.

4. Bettuzzi T, Le K, Tan-Lhernould L, **Vo T**. Causally interpretable meta-analysis of mediation analyses under (un-)restricted access to individual-level data.

Epidemiological and Clinical Applications

1. **Vo T**, Cashin A, Superchi C, Lee H, McKinnon D, Vanderweele T, Vansteelandt S. Methodological biases in mediation analysis. Part I: temporal order bias, confounding bias and measurement bias.

2. **Vo T**, Cashin A, Superchi C, Lee H, McKinnon D, Vanderweele T, Vansteelandt S. Methodological biases in mediation analysis. Part II: selection bias, bias due to missing data, statistical bias and selective reporting bias.

3. **Vo T**, Bogar K, Pham NP, Brensinger C, Leonard C, Flory J, Ye T, Roy S, Erterfaie A, Small D, Hennessy S. Cardiovascular safety of exogenous testosterone therapy: results from three causal analyses.

4. Murillo C, Cerezo-Téllez E, Torres-Lacomba M, Pham TQ, Lluch E, Falla D, **Vo T**†. Explaining the effect of dry needling on pain intensity and disability in chronic neck pain: a longitudinal causal mediation analysis.

PEER-REVIEW ACTIVITIES

Journal of the American Statistical Association ($\times 1$); Biometrics ($\times 2$); Biometrika, Journal of Causal Inference; International Journal of Biostatistics; Research Synthesis Methods; Epidemiology ($\times 2$); Clinical Trials; BMC Biomedical Research Methodology ($\times 2$); Biometrical Journal.

TEACHING EXPERIENCE

1. Lecturer in charge. Causal Inference in Medical Research.   11/2023
Graduate School of Public Health. University Paris Saclay.

2. Teaching assistant. Survival Analysis. MSc Statistical Data Analysis.   2/2020–6/2020
Ghent University.

3. Co-lecturer. Advanced biostatistics for medical students.   9/2017–1/2018
The University of Paris.

4. Lecturer in charge. Introduction to Clinical Trials and Evidence Synthesis.   7/2016; 7/2017
Summer school of clinical trials. Hanoi University of Pharmacy.

RESEARCH ADVISING

1. Khoi Le (advisee). PhD. Epidemiology, University Paris XII.   2023–2026
Topic: Efficacy and safety of biologic treatments in psoriasis: causal inference from observational data. Coadvisor: Emilie Sbidian.

2. Bang Truong (mentee). PhD. Epidemiology, Auburn University.   2021–2022
Topic: A systematic review of population adusted-indirect comparisons in health technology assessment.

3. Luong Vuong (mentee). MSc. Epidemiology, Antwerp University.   2021–2022
Topic: Methods for developing minimum reporting sets of patient characteristics in epidemiological research.

CONFERENCE & SEMINAR

ROBIMA: a quality assessment tool for mediation analysis

- Invited talk, Mediation Research Days Conference, University of Quebec at Montreal.   9/2024

Population-adjusted indirect comparison in health technology assessment: methods, challenges and current practice

- Invited talk, Joint Congress of Cochrane Skin Group and European Dermato-Epidemiology Network, Paris, France.   4/2024

Causal methods for treatment effect estimation and heterogeneity assessment using real-world data

- Department of Biostatistics Seminar, Vanderbilt University Medical Center.   2/2023
- Division of Pharmacoepidemiology and Pharmacoeconomics Seminar, Brigham's Women Hospital, Harvard Medical School.   2/2023
- Real-World Health Navigator (RWHN) Impact Engine Initiative, Northeastern University.   2/2023

Population-adjusted indirect comparisons in health technology assessment

- Invited talk, International Society for Health Economics and Outcomes Research Student Chapter Meeting, Auburn University.   10/2022

Heterogeneity assessment in causal data fusion problems

- American Causal Inference Conference, University of California - Berkeley.   5/2022
- Causal Inference Working Group Seminar, John Hopkins University.   4/2022
- Center of Causal Inference Seminar, University of Pennsylvania.   3/2022
- Center for Research on Healthcare Seminar, University of Pittsburgh.   6/2022
- Division of Biostatistics Seminar, Department of Pharmacology, Physiology and Cancer Biology. Thomas Jefferson University.   8/2022
- IMS New Researchers Conference, George Mason University.   8/2022

Structural Mean Models for Instrumented Difference-in-Difference Design

- American Causal Inference Conference. University of California - Berkeley.   5/2022

Novel approaches to address case-mix heterogeneity in meta-analysis

- Annual Conference of the International Society for Clinical Biostatistics. Leuven, Belgium.   7/2019
- Joint Statistical Meeting, American Statistical Association. Denver, Colorado.   7/2019
- Francophone Conference in Clinical Epidemiology. Toulouse, France.   5/2019
- Cochrane Colloquium. Edinburgh, UK.   9/2019

Rethinking meta-analysis: addressing problems of non-transportability when combining treatment effects across patient populations

- Joint International Society for Clinical Biostatistics and Australian Statistical Conference. Melbourne, Australia   8/2018
- Annual Meeting of the Society of Research Synthesis Methodology. Bristol, UK.   7/2018
- European Causal Inference Meeting. Florence, Italy.   4/2018

REFERENCE   Pr. **Dylan S. Small**
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Pr. **Stijn Vansteelandt**
Department of Applied Mathematics, Computer Science and Statistics, Ghent University
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