Curriculum Vitae

Steven Abrams

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Personal Information

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Home Address

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Personal Details

Gender: Male
Date of Birth: 8th of March, 1988
Place of Birth: Herk-de-Stad, Belgium
Present Citizenship: Belgian
Marital Status: Married
Wife: Joke Berx
Daughters: Eloine Abrams
Dirce Abrams

Other Interests

18 years of football at amateur and semi-professional level

Education

Degrees obtained:

Secundary Education	June 30, 2006	Sint-Martinusscholen, Herk-de-Stad
Bachelor in Mathematics	July 7, 2009	Hasselt University
Master of Statistics	September 22, 2011	Hasselt University
PhD in Science: Statistics	September 18, 2015	Hasselt University

Current Positions:

Assistant Professor in Medical Statistics
Faculty of Medicine and Health Sciences,
Department of Family Medicine and Population Health (FAMPOP),
Global Health Institute (GHI), University of Antwerp, Campus Drie Eiken
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Assistant Professor in Biostatistics
Modelling Infectious Diseases (MID) group,
Center for Statistics (CenStat), Data Science Institute (DSI),
Interuniversity Institute for Biostatistics and statistical Bioinformatics,
Hasselt University, Campus Diepenbeek, Agoralaan 1, Gebouw (building) D,
3590 Diepenbeek, Belgium
E-mail: steven.abrams@uhasselt.be

Work Experience

PhD student (2011–2015)
Interuniversity Institute for Biostatistics and statistical Bioinformatics, UHasselt, Full-time

Postdoctoral researcher (2015–2018)
Interuniversity Institute for Biostatistics and statistical Bioinformatics, UHasselt, Full-time

Postdoctoral researcher (2018–2022)
Interuniversity Institute for Biostatistics and statistical Bioinformatics, UHasselt, Part-time

Assistant Professor (2018–2026)
Global Health Institute, University of Antwerp, Part-time

Assistant Professor (2022–present)
Center for Statistics, UHasselt, Part-time

Associate Professor (2026–present)
Global Health Institute, University of Antwerp, Part-time

Theses

- **Abrams, S.**, Jaspers, S. and Vandendijck, Y., Bachelor Thesis *"Estimation of the effective reproduction number for Hepatitis A outbreaks in Flanders"*, Hasselt University, Diepenbeek, July, 2009. Supervisor: Prof. dr. Niel Hens
- **Abrams, S.**, Master Thesis *"The trivariate correlated gamma frailty model for current status data"*, Hasselt University, Diepenbeek, September, 2011. Supervisor: Prof. dr. Niel Hens.
- **Abrams, S.**, Doctoral Dissertation *"Statistical models for estimating heterogeneity in acquisition of infectious diseases and outbreak risk in highly vaccinated populations"*, Hasselt University, Diepenbeek, September, 2015. Promotor: Prof. dr. Niel Hens, Co-promotor: Prof. dr. Geert Molenberghs.

Language Kowledge

Dutch: native;
English: nearly native;
French: basic knowledge.

Computing and Software Kowledge

SAS, SAS Entreprise Guide, SAS JMP, SPlus, R, Rcpp, Blackboard, StatXact, Maple, Access, Matlab, C/C++, LaTeX, JabRef, EndNote, Word, Powerpoint, Excel, FirstBayes, WinBugs, @Risk, (R)Stan, JASP, REDCAP, Overleaf.

RESEARCH

Main Research Interests

(1) Development of **mathematical and statistical models** describing **infectious disease transmission** thereby accounting for **unobserved individual heterogeneity** in the acquisition of multiple pathogens. More specifically, interest lies in studying the **association between different infections** and using statistical tools to reveal how these infections are transmitted. The primary data source under investigation is multivariate **cross-sectional serological survey data**.

(2) Methodological research related to **association measures** quantifying the association between multiple infection times. This includes **non-parametric, semi-parametric and parametric estimation of local association measures** for bivariate time-to-event data under different types of censoring, including but not limited to the cross ratio function.

(3) Within-host modeling of antibody kinetics following natural infection or vaccination with applications to Ebola and SARS-CoV-2 vaccination.

(4) Studying the effects of **outcome-dependent sampling** when estimating epidemiological parameters such as the force of infection and entomologic inoculation rate in the context of vector-borne infections such as malaria.

Modelling Infectious Diseases: Prevalence, Force of Infection, Transmission Parameters, Vaccination, Mathematical Modelling, Recurrent Infection Processes, Malaria Transmission, Immunological Processes, Within- and Between-Host Models, ...

Survival Analysis: Frailty Models, Doubly Interval-Censored Observations, Competing Risk Analysis, Multivariate Survival Analysis, Hazard Regression, ...

Association Measures: Cross Ratio Function, Risk Ratio, Quantile Estimation, ...

Publications

- **Abrams, S.**, Beutels, P., and Hens, N. (2014). Assessing mumps outbreak risk in highly vaccinated populations using spatial seroprevalence data. *American Journal of Epidemiology*, **179**(8): 1006–1017. doi: 10.1093/aje/kwu014. (Impact factor: 5.230).
- Hens, N., **Abrams, S.**, Santermans, E., Theeten, H., Goeyvaerts, N., Lernout, T., Leuridan, E., Van Kerckhove, K., Van Damme, P., and Beutels, P. (2015). Assessing the risk of measles resurgence in a highly vaccinated population: An application to Belgium anno 2013. *Eurosurveillance*, **20**(1): pii=20998. doi: 10.2807/1560-7917.ES2015.20.1.20998. (Impact factor: 5.983).
- **Abrams, S.** and Hens, N. (2015). Modelling individual heterogeneity in the acquisition of non-immunizing infections: An application to parvovirus B19. *Biostatistics*, **16**(1): 129–142. doi: 10.1093/biostatistics/kxu036. (Impact factor: 2.109).
- **Abrams, S.**, Kourkouni, E., Sabbe, M., Beutels, P., and Hens, N. (2016). Inferring rubella outbreak risk from seroprevalence data in Belgium. *Vaccine*, **34**(50): 6187–6192. doi: 10.1016/j.vaccine.2016.10.042. (Impact factor: 3.235).

– **Abrams, S.**, Aerts, M., Molenberghs, G., and Hens, N. (2017). Parametric overdispersed frailty models for current status data. *Biometrics*, **73**: 1388–1400. doi: 10.1111/biom.12692. (Impact factor: 1.524).

– **Abrams, S.**, Wienke, A., and Hens, N. (2017). Modelling time-varying heterogeneity in recurrent event time data: an application to serological data. *Journal of the Royal Statistical Society, Series C*, **67**(3): 687–704. doi:10.1111/rssc.12236. (Impact factor: 1.750).

– Mugenyi, L., **Abrams, S.**, and Hens, N. (2017). Estimating age-time dependent malaria force of infection accounting for unobserved heterogeneity. *Epidemiology and Infection*, **145**(2): 2545–2562. doi: 10.1017/S0950268817001297. (Impact factor: 2.044).

– Béraud, G., **Abrams, S.**, Beutels, P., Dervaux, B., and Hens, N. (2018). Resurgence risk for measles, mumps and rubella in France in 2018 and 2020. *Eurosurveillance*, **23**(25): pii=1700796. doi: 10.2807/1560-7917.ES.2018.23.25.1700796 (Impact factor: 7.421).

– Martins, A., Aerts, M., Hens, N., Wienke, A., and **Abrams, S.** (2019). Correlated gamma frailty models for bivariate survival time data. *Statistical Methods in Medical Research*, **28**(10-11): 3437-3450. doi: 10.1177/0962280218803127 (Impact factor: 2.291).

– Blaizot, S., Herzog, S. A., **Abrams, S.**, Theeten, H., Litzroth, A., and Hens, N. (2019). Sample size calculation for estimating key epidemiological parameters using serological data and mathematical modelling. *BMC Medical Research Methodology*, **19**(1): 51. doi: 10.1186/s12874-019-0692-1. (Impact factor: 3.031).

– Smit, S. A., **Abrams, S.**, Dorny, P., Speybroeck, N., Devleesschauwer, B., Hutse, V., Jansens, H., Theeten, H., Beutels, P., and Hens, N. (2019). The seroprevalence of cytomegalovirus infection in Belgium anno 2002 and 2006: a comparative analysis with hepatitis A virus seroprevalence. *Epidemiology and Infection*, **147**. doi: 10.1017/s0950268819000487. (Impact factor: 2.152).

– Bannister-Tyrrell M., Krit, M., Sluydts, V., Tho, S., Sokny, M., Mean, V., Kim, S., Menard, D., Peeters Grietens, K., **Abrams, S.**, Hens, N., Coosemans, M., Bassat, Q., Boele van Hensbroek, M., Durnez, L., and van Bortel, W. (2019). Households or hotspots? Defining intervention targets for malaria elimination in Ratanakiri Province, Eastern Cambodia. *Journal of Infectious Diseases*, jiz211, doi: 10.1093/infdis/jiz211. (Impact factor: 5.022).

– Hendrickx, D. M., **Abrams, S.**, and Hens, N. (2019). The impact of behavioral interventions on co-infection dynamics: An exploration of the effects of home isolation. *Journal of Theoretical Biology*, **476**: 5–18. doi: 10.1016/j.jtbi.2019.05.017. (Impact factor: 2.327).

– **Abrams, S.**, Janssen, P., Swanepoel, J., and Veraverbeke, N. (2020). Nonparametric estimation of the cross ratio function. *Annals of the Institute of Statistical Mathematics*, **72**(3): 771–801. doi: 10.1007/s10463-019-00709-3. (Impact factor: 1.267).

– Tran, M. P. T., **Abrams, S.**, and Braekers, R. (2020). A copula-frailty model to accommodate individual heterogeneity in the acquisition of multiple infections: An application to bivariate current status data. *Statistics in Medicine*, **39**(12): 1695-1714. doi: 10.1002/sim.8506. (Impact factor: 2.373).

– Hotterbeekx, A., Dusabimana, A., Mandro, M., Abhafule, G. M., Deogratias, W. R., Siewe Fodjo, J. N., **Abrams, S.**, Colebunders, R. (2020). Urinary N-acetyltyramine-O,β-glucuronide in persons with onchocerciasis-associated epilepsy. *Pathogens*, **9**(191): 1-10. doi: 10.3390/pathogens9030191. (Impact factor: 3.492).

– Mandro, M., Siewe Fodjo, J. N., Dusabimana, A. Mukendi, D., Haesendonckx, S., Lokonda, R., Nakato, S., Nyisi, F., Abhafule, G., Wonya'rossi, D., Hotterbeekx, A., **Abrams, S.**, Colebunders, R. (2020). Single versus multiple dose ivermectin regimen in onchocerciasis-infected persons with epilepsy treated with phenobarbital: A randomized clinical trial in the Democratic Republic of Congo. *Pathogens*, **9**(205): 1-18. doi: 10.3390/pathogens9030205. (Impact factor: 3.492).

– Chaname Pinedo, L. E., Bruyndonckx, R., Catry, B., Latour, K., Goossens, H., **Abrams, S.**, and Coenen, S. (2020). Fluoroquinolone resistance in Escherichia coli isolates after exposure to non-fluoroquinolone antibiotics: a retrospective case-control study. *Journal of Antimicrobial Chemotherapy*. dkaa128, doi: 10.1093/jac/dkaa128. (Impact factor: 5.790).

– Atahigwa, C., Kadengye, D. T., Iddi, S., **Abrams, S.**, and Van Rie, A. (2020). Trends and determinants of health facility childbirth service utilization among mothers in urban slums of Nairobi, Kenya. *Global Epidemiology*, **2**: 100029. 10.1016/j.gloepi.2020.100029.

– Molenberghs, G., Buyse, M., **Abrams, S.**, Hens, N., Beutels, P., Faes, C., Verbeke, G., Van Damme, P., Goossens, H., Neyens, T., Herzog, S., Theeten, H., Pepermans, K., Abad, A. A., Van Keilegom, I., Speybroeck, N., Legrand, C., De Buyser, S., and Hulstaert, F. (2020). Infectious diseases epidemiology, quantitative methodology, and clinical research in the midst of the COVID-19 pandemic: Perspective from a European country. *Contemporary Clinical Trials*, **99**: 106189. doi: 10.1016/j.cct.2020.106189. (Impact factor: 2.226).

– Wijtvliet, V., Plaeke, P., **Abrams, S.**, Hens, N., Gielis, E. M., Hellemans, R., Massart, A., Hesselink, D. A., De Winter, B. Y., Abramowicz, D., and Ledeganck, K. J. (2020). Donor-derived cell-free DNA as a biomarker for rejection after kidney transplantation: a systematic review and meta-analysis. *Transplant International*, **33**(12): 1626–1642. doi: 10.1111/tri.13753. (Impact factor: 3.782).

– Dusabimana, A., Bhwana, D., Raimon, S., Mmbando, B. P., Hotterbeekx, A., Tepage, F., Mandro, M., Siewe Fodjo, J. N., **Abrams, S.**, and Colebunders, R. (2020). Ivermectin Treatment Response in Onchocerca Volvulus Infected Persons with Epilepsy: A Three-Country Short Cohort Study. *Pathogens*, **9**(8): 617. doi: 10.3390/pathogens9080617. (Impact factor: 3.492).

– Faes, C., **Abrams, S.**, Van Beckhoven, D., Meyfroidt, G., Vlieghe, E., and Hens, N. (2020). Time between symptom onset, hospitalisation and recovery or death: Statistical analysis of Belgian covid-19 patients. *International Journal of Environmental Research and Public Health*, **17**(20): 7560. doi: 10.3390/ijerph17207560. (Impact factor: 3.390).

– Dusabimana, A., Wafula, S. T., Raimon, S. J., Siewe Fodjo, J. N., Bhwana, D., Tepage, F., Abd-Elfarag, G., Hotterbeekx, A., **Abrams, S.**, and Colebunders, R. (2020). Effect of Ivermectin Treatment on the Frequency of Seizures in Persons with Epilepsy Infected with Onchocerca volvulus. *Pathogens*, **10**(21): 1-10. doi: 10.3390/pathogens10010021. (Impact factor: 3.492).

– Hassen, H. Y., Bastiaens, H., Van Royen, K., and **Abrams, S.** (2020). Socioeconomic and behavioural determinants of cardiovascular diseases among older adults in Belgium and France: A longitudinal analysis from the SHARE study. *PloS One*, **15**(12): e0243422. doi: 10.1371/journal.pone.0243422. (Impact factor: 3.240).

– Hotterbeekx, A., Perneel, J., Mandro, M., Abhafule, G., Siewe Fodjo, J. N., Dusabimana, A., **Abrams, S.**, Kumar-Singh, S., Colebunders, R. (2020). Comparison of Diagnostic Tests

for Onchocerca volvulus in the Democratic Republic of Congo. *Pathogens*, **9**(6):435. doi: 10.3390/pathogens9060435. (Impact factor: 3.492).

– Schenk, J., **Abrams, S.**, Van Damme, P., Theeten, H., Beutels, P., and Hens, N. (2021). Immunogenicity and persistence of trivalent measles, mumps and rubella vaccines: a systematic review and meta-analysis. *Lancet Infectious Diseases*, **21**(2): 286–295. doi: 10.1016/S1473-3099(20)30442-4. (Impact factor: 71.421).

– Willem, L., **Abrams, S.**, Petrof, O., Coletti, P., Kuylen, E., Libin, P., Mogelmose, S., Wambua, J., Herzog, S. A., Faes, C., Beutels, P., and Hens, N. (2021). The impact of contact tracing and household bubbles on deconfinement strategies for COVID-19. *Nature Communications*, **12**(1): 1–9. doi: 10.1038/s41467-021-21747-7. (Impact factor: 17.694).

– **Abrams, S.**, Wambua, J., Santermans, E., Willem, L., Kuylen, E., Coletti, P., Libin, P., Faes, C., Petrof, O., Herzog, S. A., Beutels, P., and Hens, N. (2021). Modeling the early phase of the Belgian COVID-19 epidemic using a stochastic compartmental model and studying its implied future trajectories. *Epidemics*, **35**: 100449. doi: 10.1016/j.epidem.2021.100449. (Impact factor: 5.324).

– Hassen, H. Y., Aerts, N., Demarest, S., Manzar, D., **Abrams, S.***, and Bastiaens, H.* (2021). Validation of the Dutch-Flemish translated ABCD questionnaire to measure cardiovascular diseases knowledge and risk perception among adults, *Scientific Reports*, **11**(1), 8952. doi: 10.1038/s41598-021-88456-5 (Impact factor: 4.997).

– Tran, T. M. P., **Abrams, S.**, Aerts, M., Maertens, K., and Hens, N. (2021). Measuring association among censored antibody titer data. *Statistics in Medicine*, **40**(16): 3740–3761. doi: 10.1002/sim.8995. (Impact factor: 2.497).

– Ndejjo, R., Hassen, H. Y., Wanyenze, R. K., Musoke, D., Nuwaha, F., **Abrams, S.**, Bastiaens, H., and Musinguzi, G. (2021). Community-based interventions for cardiovascular disease prevention in low-and middle-income countries: A systematic review. *Public Health Reviews*, **42**:1604018. doi: 10.3389/phrs.2021.1604018 (Impact factor: 5.760).

– Coletti, P., Libin, P., Petrof, O., Willem, L., **Abrams, S.**, Herzog, S. A., Faes, C., Kuylen, E., Wambua, J., Beutels, P., and Hens, N. (2021). A data-driven metapopulation model for the Belgian COVID-19 epidemic: assessing the impact of lockdown and exit strategies. *BMC Infectious Diseases*, **21**(1): 503. doi: 10.1186/s12879-021-06092-w. (Impact factor: 3.669).

– Heireman, L.*, **Abrams, S.***, Bruynseels, P., Cartuyvels, R., Cuypers, L., De Schouwer, P., Laffut, W., Lagrou, K., Hens, N., Ho, E., Padalko, E., Reynders, M., Vandamme, S., Van der Moeren, N., Verstrepen, W., Willems, P., Naesens, R. (2021). Evaluation of the SARS-CoV-2 positivity ratio and upper respiratory tract viral load among asymptomatic individuals screened before hospitalization or surgery in Flanders, Belgium. *PLoS One*, **16**(11): e0259908. doi: 10.1371/journal.pone.0259908. (Impact factor: 3.752).

– **Abrams, S.**, Janssen, P., Veraverbeke, N. (2021). Quantiles of the conditional residual lifetime. *Statistics*, **55**(6): 1271–1290. doi: 10.1080/02331888.2021.2006661. (Impact factor: 2.346).

– Hassen, H. Y., Ndejjo, R., Musinguzi, G., Van Geertruyden, J.-P., **Abrams, S.***, Bastiaens, H.* (2021). Effectiveness of community-based cardiovascular disease prevention interventions to improve physical activity: A systematic review and meta-regression. *Preventive Medicine*, **153**: 106797. doi: 10.1016/j.ypmed.2021.106797. (Impact factor: 4.637).

– Geens, M., Stappers, S., Konings, H., De Winter, B. Y., Specenier, P., Van Meerbeeck, J. P.,

Verpooten, G. A., **Abrams, S.**, Janssens, A., Peeters, M., Van de Heyning, P., Vanderveken, O. M., Ledeganck, K. J. (2021). Epidermal growth factor as a potential prognostic and predictive biomarker of response to platinum-based chemotherapy. *PLoS One* **16**(6): e0252646. doi: 10.1371/journal.pone.0252646. (Impact factor: 3.752).

– Wijtvliet, V. P. W. M., Ariën, K. K., **Abrams, S.**, Couttenye, M. M., Mestrez, F., Mariën, J., De Winter, B. Y., Van Damme, P., Pipeleers, L., Wissing, K. M., Abramowicz, D., Ledeganck, K. J. (2022). mRNA-1273 vaccine (Moderna): a better option than BNT162b2 (Pfizer) in kidney transplant recipients and dialysis patients? *Nephrology Dialysis Transplantation*, **37**(4): 799–803. doi: 10.1093/ndt/gfab352. (Impact factor: 6.100).

– Molenberghs, G., Faes, C., Verbeeck, J., Beboosere, P., **Abrams, S.**, Willem, L., Aerts, J., Theeten, H., Devleesschauwer, B., Bustos Sierra, N., Renard, F., Herzog, S. A., Lusyne, P., Van der Heyden, P., Van Oyen, H., Van Damme, P., and Hens, N. (2022). COVID-19 mortality, excess mortality, deaths per million and infection fatality ratio, Belgium, 9 March 2020 to 28 June 2020. *Eurosurveillance*, **27**(7): 2002060. doi: 10.2807/1560-7917.ES.2022.27.7.2002060. (Impact factor: 19.000).

– Herzog, S. A., De Bie, J., **Abrams, S.**, Wouters, I., Ekinci, E., Patteet, L., Coppens, A., De Spiegeleer, S., Beutels, P., Van Damme, P., Hens, N., and Theeten, H. (2022). Seroprevalence of IgG antibodies against SARS-CoV-2 – a serial prospective cross-sectional nationwide study of residual samples, Belgium, March to October 2020. *Eurosurveillance*, **27**(9): 2100419. doi: 10.2807/1560-7917.ES.2022.27.9.2100419. (Impact factor: 19.000).

– Tran, T. N., Vu, D. H., Nguyen, H. A., **Abrams, S.**, Bruyndonckx, R., Nguyen, T. T., Tran, N. M., Trinh, T. A., Do, T. H. G., Pham, H. N., Nguyen, G. B., Coenen, S. (2022). Predicting mortality in intensive care unit patients infected with Klebsiella pneumoniae: A retrospective cohort study. *Journal of Infection and Chemotherapy*, **28**(1): 10–18. doi: 10.1016/j.jiac.2021.09.001. (Impact factor: 2.200).

– Hassen, H. Y., Bowyer, M., Gibson, L., **Abrams, S.***, Bastiaens, H.* (2022). Level of cardiovascular disease knowledge, risk perception and intention towards healthy lifestyle and socioeconomic disparities among adults in vulnerable communities in Belgium and England. *BMC Public Health*, **22**(1): 197. doi: 10.1186/s12889-022-12608-z. (Impact factor: 4.500)

– Dusabimana, A., Siewe Fodjo, J. N., Ndahuru, M. M., Mmbando, B. P., Jada, S. R., Boven, A., De Smet, E., Ukety, T., Njamnshi, A. K., Laudisoit, A., **Abrams, S.**, and Colebunders, R. (2022). Surveillance for Onchocerciasis-associated epilepsy and OV16 testing of children 6-10 years old should be used to identify areas where Onchocerciasis elimination programs need strengthening. *Pathogens*, **11**(3): 281. doi: 10.3390/pathogens11030281. (Impact factor: 3.700)

– Franco, N., Coletti, P., Willem, L., Angeli, L., Lajot, A., **Abrams, S.**, Beutels, P., Faes, C., and Hens, N. (2022). Inferring age-specific differences in susceptibility to and infectiousness upon SARS-CoV-2 infection based on Belgian social contact data. *PLoS Computational Biology*, **18**(3): e1009965. doi: 10.1371/journal.pcbi.1009965. (Impact factor: 4.290).

– Schenk, J., **Abrams, S.**, Litzroth, A., Cornelissen, L., Grammens, T., Theeten, H., and Hens, N. (2022). Identifying immunity gaps for measles using Belgian serial serology data. *Vaccine*, **40**(26): 3676–3683. doi: 10.1016/j.vaccine.2022.05.009. (Impact factor: 5.500).

– Ceuleers, H., Hanning, N., De bruyn, M., De Man, J. G., De Schepper, H. U., Li, Q., Liu, L., **Abrams, S.**, Smet, A., Joossens, J., Augustyns, K., De Meester, I., Pasricha, P. J., and De Winter, B. Y. (2022). The effect of serine protease inhibitors on visceral pain in different rodent

models with an intestinal insult. *Frontiers in Pharmacology*, **13**: 765744. doi: 10.3389/fphar.2022.765744. (Impact factor: 5.600).

– Hassen, H. Y., Ndejjo, R., Van Geertruyden, J. P., Musinguzi, G., **Abrams, S.**, Bastiaens, H. (2022). Type and effectiveness of community-based interventions in improving knowledge related to cardiovascular diseases and risk factors: A systematic review. *American Journal of Preventive Cardiology*, **10**: 100341. doi: 10.1016/j.ajpc.2022.100341. (Impact factor: 4.100).

– Verleye, A., Wijtvliet, V., **Abrams, S.**, Hellemans, R., Bougrea, R., Massart, A., Pipeleers, L., Wissing, K. M., Ariën, K. K., De Winter, B. Y., Van Damme, P., Abramowicz, D., Ledeganck, K. J. (2022). Seroconversion rate after primary vaccination with two doses of BNT162b2 versus mRNA-1273 in solid organ transplant recipients: a systematic review and meta-analysis. *Nephrology Dialysis Transplantation*, **37**(8): 1566–1575. doi: 10.1093/ndt/gfac174. (Impact factor: 6.100).

– Wijtvliet V. P. W. M., Verheyden, S., Depreter, B., Heylen, C., Coeman, E., **Abrams, S.**, De Winter, B. Y., Massart, A., Hellemans, R., Pipeleers, L., Claas, F. H. J., Ariën, K. K., Wissing, K. M., Abramowicz D., Ledeganck, K. J. (2022). SARS-CoV-2 mRNA vaccination is not associated with the induction of anti-HLA or non-HLA antibodies. *Transplant Immunology*, **74**: 101670. doi: 10.1016/j.trim.2022.101670. (Impact factor: 1.500)

– **Abrams, S.**, Janssen, P., Swanepoel, J., Veraverbeke, N. (2022). Nonparametric estimation of risk ratios for bivariate data. *Journal of Nonparametric Statistics*, **34**(4): 940–963. doi: 10.1080/10485252.2022.2085265. (Impact factor: 1.200).

– D'Hulster, L., **Abrams, S.**, Bruyndonckx, R., Anthierens, S., Adriaenssens, N., Butler, C., Verheij, T., Goossens, H., Little, P., Coenen, S. (2022). Nationwide implementation of online communication skills training to reduce overprescribing of antibiotics: a stepped-wedge cluster randomised trial in general practice. *JAC - Antimicrobial Resistance*, **4**(3): dlac070. doi: 10.1093/jacamr/dlac070. (Impact factor: 3.500).

– Baal, C. L., Westenberg, J. D., Buijs, S. M., **Abrams, S.**, Mulder, T., van Schaik, R., Koolen, S., Jager, A., Matijssen, R. (2022). Factors affecting inter-individual variability in endoxifen concentrations in patients: Results from the prospective TOTAM trial. *Breast Cancer Research and Treatment*, **195**(1): 65–74. doi: 10.1007/s10549-022-06643-y. (Impact factor: 3.800)

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– Balume Baderha, S., Bijnens, L., Abrams, S., Banza Wa Banza, B., Deferme, W. (2026). Comparative experimental assessment of locally manufactured and commercial solar cookers under outdoor conditions in Lubumbashi, Democratic Republic of the Congo. *Accepted for publication in Discover Sustainability.*

– De Clercq, B., Van Dyck, L., Verbrugghe, M., Schrijvers, G., Grosjean, M., Knops, K., Bogaert, A., Molenberghs, G., and Abrams, S. (2026). Cross-sectional and longitudinal trends in the World Health Organisation cardiovascular risk score: sector-specific evidence from occupational health examinations in Belgium (2019–2023). *Accepted for publication in Global Health Research*

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Note: Journal Impact Factors (JIFs) reported here are based on the data indexed in the Web of Science Core Collection and were retrieved from Journal Citation Reports available on Clarivate for the year of publication. For more recent publications where JCR data are pending, no JIF is reported.

Conference Publications

– **Abrams, S.** and Hens, N. (2013). Extending frailty models applied to infectious disease epidemiology. *Proceedings of the 28th International Workshop on Statistical Modelling*, 475–478.

– Wijtvliet, V., Plaeke, P., **Abrams, S.**, Hens, N., Gielis, E., Hellemans, R., De Winter, B., Abramowicz, D., and Ledeganck, K. (2020). The potential of donor-derived cell-free DNA as a biomarker for rejection in kidney tranplantation: A systematic review and meta-analysis. *Nephrology Dialysis Transplantation*, 35: 190.

– Balume Baderha, S., Bijnens, L., **Abrams, S.**, Banza Wa Banza, B., Deferme, W. (2025). Solar Cooker for All: Towards Sustainable Cooking in Lubumbashi. *Proceedings of the African Conference on Resilient and Sustainable Cities*, 26: 27.

Other Publications

– **Abrams, S.**, Coletti, P., Faes, C., Ganyani, T., Herzog, S., Kremer, C., Kuylen, E., Libin, P., Mogelmose, S., Petrof, O., Vercruysse, S., Wambua, J., Willem, L., Beutels, Ph., Hens, N. (2020). Hoe mens en wiskunde hand in hand het coronatijdperk kleuren. *Nieuw Archief voor Wiskunde*, 21(2): 84-89.

– Coletti, P., Libin, P., Petrof, O., **Abrams, S.**, Faes, C., Beutels, P., and Hens, N. (2020). COVID-19 report on a meta-population model for Belgium: a first status report.

– Blog posts, technical notes and RESTORE consortium reports, publically available on *https://covid-en-wetenschap.github.io/*.

– Schenk, J., Theeten, H., **Abrams, S.**, Hens, N. (2022). Een inschatting van de huidige situatie omtrent humorale immuniteit tegen mazelen in de Belgische populatie: Analyse op basis van seriële serologische gegevens. *Medi-Sfeer*, 33–36.

Preprints

– Gozzi, N., Gioannini, C., Milano, P., Vismara, I., Rossi, L., Quaggiotto, M., Fiandrino, S., Paolotti, D., Vespignani, A., Johnson, H., Grah, R., Funk, S., Sherratt, K., Hens, N., **Abrams, S.**, Bosschaert, M., Celino, F., Zino, L., Rizzo, A., Kandula, S., Freiesleben de Blasio, B., Aalto, A., Proverbio, D., Giordano, G., Gonçalves, J., Li, Y., Perra, N., Omokanye, A., Martin, L. J., Niehus, R., Canevari, J., Bons, E. (2025). Performance evaluation of RespiCast ensemble forecasts for primary care syndromic indicators of viral respiratory disease in Europe during the 2023/24 winter season. medRxiv.

– Herman, N., Bosschaert, M., Braeye, T., Willem, L., **Abrams, S.**, Hens, N., Franco, N. (2025). The impact of COVID-19 vaccination on mortality and stringency measures in Belgium: A retrospective analysis. Research Square.

– Barth, N., Carstens, G., Kozanli, E., Han, W., Hermans, L., Paolotti, D., **Abrams, S.**, Molenberghs, G., Hens, N., Faes, C., Eggink, D., van Hoek, A. J., Torneri A. (2025). Population-level associations in the spread of co-circulating respiratory viruses: A multi-method statistical investigation using incidence data. medRxiv.

– Lewczuk, P., Gressani, O., **Abrams, S.**, Faes, C. (2026). Laplacian-P-splines for shared Gamma frailty models applied to clustered right-censored time-to-event data. ArXiv.

Press Releases

– De Standaard. 19 April 2021. Als er een vierde golf komt, lopen min 40-jarigen gevaar.

– De Standaard. 27 March 2021. Het was de noodrem of nog langere corona-ellende.

– TVL. 29 October 2020. Ziekenhuizen staan op instorten, wellicht al op 6 november.

– De Standaard. 23 July 2020. Contacten in vrije tijd zullen piek tweede golf bepalen.

– Het Laatste Nieuws. 25 April 2020. Wetenschappers bundelen krachten rond mathematische voorspelmodellen van impact exitstrategieën.

– De Standaard. 5 June 2020. Hoe veilig en aangenaam is reizen in tijden van corona?

– De Tijd. 25 April 2020. Whizzkids moeten ons door coronastorm loodsen.

– Het Belang van Limburg. 28 February 2020. Racing heeft 55,08% kans op play-off 1.

– TV Limburg. 21 November 2022. Biostatistici UHasselt voorspellen de wereldkampioen.

– TV Limburg. 5 June 2025. Studie UHasselt: zonder vaccins had corona 62000 extra doden geëist.

– TV Limburg. 5-6 October 2026. UHasselt werkt mee aan koken op zonne-energie in Congo.

Book Projects

– **Abrams, S.**, Wienke, A., Unkel, S., and Hens, N. Frailty Models for Infectious Disease Epidemiology. Wiley.

– **Abrams, S.** The analysis of multivariate serological data. Chapter in Handbook of Infectious Disease Data Analysis, Chapman & Hall/CRC.

– Duchateau, L., Janssen, P., **Abrams, S.** The frailty model. Chapter in International Encyclopedia of Statistical Science, Springer.

Research Projects

– *New translational methods towards the estimation of age- and time-dependent epidemiological parameters for pertussis resurgence in Belgium using serial seroprevalence and incidence data* – FWO project (R–7543) in collaboration with Public Health England, the London School of

Hygiene & Tropical Medicine (London, UK; John Edmunds), the Dutch National Institute for Public Health and the Environment (Bilthoven, the Netherlands; Michiel van Boven and Jacco Wallinga), the University of Melbourne (Melbourne, Australia, Jodie McVernon and Trish Campbell) and the University of New South Wales, UNSW (Sydney, Australia, James Wood). (Co-investigator)

– *Measles, mumps and rubella surveillance, outbreak assessment and outbreak management* in collaboration with the Scientific Institute of Public Health (WIV-ISP) (Brussels, Amber Lizroth, Martine Sabbe, Tine Grammens and Sophie Quoilin).

– *RESTORE: REalistic forecaSTing, cOntrol and pREparedness for coming COVID-19 waves* – FWO COVID-19 project (grant nr. G0G2920N – 298,500 euro) (Co-investigator)

– *Nonparametric estimation of time-varying association measures for bivariate censored time-to-event data* – BOF small research project (Co-investigator)

– *Statistical methods for the estimation of age- and time-dependent epidemiological malaria parameters and the analysis of social network data as a novel approach to design malaria elimination strategies* – DOCPRO4 research project (Principal investigator)

– *Bernstein-based estimation of the cross-ratio function* – FWO junior fundamental research project (grant nr. G011022N – 225,000 euro) (Co-investigator)

– *Benefit Risk contextualisation of COVID-19 vaccines in the EU* – European Medicines Agency (EMA) (Co-investigator)

– *Public health decision making with stochastic individual-based models: a translational framework driven by advances in health economics, model inference and reinforcement learning (ACCELERATE)* - FWO junior fundamental research project (grant nr. G059423N) (Co-investigator)

– *Efficient and rapidly SCAlable EU-wide evidence-driven Pandemic response plans through dynamic Epidemic data assimilation (ESCAPE)* - European Horizon Project (grant nr. 101095619 - 2,420,930 euro) (Principal Investigator)

– *Solar Cookers for All* - Short Initiative (VLIR-UOS) in collaboration with University of Lubumbashi (DRC) (70,000 euro) (Principal Investigator)

– *Solar Cookers for All* - Subsidy for the south (city of Heusden-Zolder) (2,500 euro)

– *ECDC framework contracts on European Forecast Hub and European Scenario-Modelling Hub* (Principal Investigator and co-investigator)

Conferences, Workshops, Seminars and Symposia (organisation)

– ERC Workshop on Serology, Antwerp, May 15, 2018.

– RESTORE Scientific Event, UHasselt (online), September 16, 2021.

– Interuniversity Doctoral School Course: *How to communicate and report about your statistical analyses and results? Lessons learnt during a global crisis*, UHasselt, December 9–10, 2021.

– The 29th Annual meeting of the Belgian Statistical Society, October 20–21, 2022. Scientific committee member.

– Flames Annual Meeting 2024 on *The use of AI and state-of-the-art methodology in research and education*. University of Antwerp, April 19, 2024. Local organizer.

– The 31th Annual meeting of the Belgian Statistical Society, November 7–8, 2024. Scientific committee member.

– The 32th Annual meeting of the Belgian Statistical Society, November 17–18, 2025. Local organisation committee member.

– Lorentz Center Workshop on *Connecting Survival Analysis and Infectious Disease Modeling*, Leiden, June 15–19, 2026.

– The 33rd Annual meeting of the Belgian Statistical Society, November 19–20, 2026. Local organisation committee member.

Conferences, Workshops, Seminars and Symposia (attendance only)

– The 19th Annual meeting of the Belgian Statistical Society, Hasselt, October 12–14, 2011.

– Seminar on *High resolution quantitative trait loci mapping with whole-genome sequencing data*, Jürgen Claesen, Hasselt University, December 2, 2011.

– Workshop on *Order restricted estimation and inference*, Hasselt University, December 8–9, 2011.

– Seminar on *Estimating within-household contact networks from egocentric data using a penalized likelihood approach*, Niel Hens, Hasselt University, December 16, 2011.

– Seminar on *Asymmetric Statistics: Quantiles, Expectiles and Data Depth*, Paul Eilers, Hasselt University, January 20, 2012.

– Seminar on *Flexibly modelling in the Koziol-Green model by use of copulas*, Roel Braekers, Hasselt University, January 27, 2012.

– The 4th SIMID workshop on *Simulation Models of Infectious Disease Transmission and Control Processes*, Antwerp, April 17–18, 2013.

– The 23th Annual meeting of the Belgian Statistical Society, Antwerp, October 14–16, 2015.

– Joint Modeling and Beyond: Meeting on Joint Modeling With Survival, Longitudinal and Missing Data, Hasselt University, April 14, 2016

– The 7th SIMID workshop on *Simulation Models of Infectious Disease Transmission and Control Processes*, Hasselt, April 25, 2016.

– The 8th SIMID workshop on *Simulation Models of Infectious Disease Transmission and Control Processes*, Antwerp, May 17–18, 2017.

– Workshop on *Clustered Event Time Data*, Hasselt University, June 1, 2017.

– *BMS – ANed Spring Meeting*, Leiden University Medical Center (LUMC), June 6, 2017.

– The 27th Annual meeting of the Belgian Statistical Society, Stayen, Sint-Truiden, October, 16–18, 2019.

– The 28th Annual meeting of the Belgian Statistical Society, University of Liége, October, 21–22, 2021.

– The 29th Annual meeting of the Belgian Statistical Society, Vrije Universiteit Brussel, October, 20–21, 2022.

– Kick-off meeting European Horizon ESCAPE project, UHasselt, Hasselt, January 12–13, 2023.

– SCONE workshop, National Institute for Public Health and the Environment (RIVM), April 13–14, 2023.

– VACCELERATE APT workshop, Cologne, January 18–19, 2024.

– GEOMED 2024 conference, Hasselt, September 9–11, 2024.

– The 31th Annual meeting of the Belgian Statistical Society, Drongen, November 7–8, 2024.

– The 46th conference of the International Society for Clinical Biostatistics (ISCB), Basel, August 24–28, 2025.

– The 32th Annual meeting of the Belgian Statistical Society, Brussels, November 17–18, 2025.

– Pandemic intelligence conference, BE-PIN, 21–23 October 2026, Hasselt, Belgium.

Presentations

– The 3th SIMID workshop: *Modelling individual heterogeneity in the acquisition of non-immunizing infections: An application to Parvovirus B19*, Hasselt, Belgium, April 25–27, 2012.

– The 20th Annual meeting of the Belgian Statistical Society: *Misspecification in frailty models: An application in infectious disease epidemiology*, Liège, Belgium, October 24–26, 2012.

– Seminar at National Institute for Public Health and the Environment (RIVM): *Modelling individual heterogeneity in the acquisition of infectious diseases*, Bilthoven, Utrecht, The Netherlands, April 7, 2014.

– The 5th SIMID workshop: *A method to assess outbreak risk in highly vaccinated populations using spatial seroprevalence data: an application to MMR in Belgium*, Hasselt, Belgium, April 16–17, 2014.

– Serology for modelling infectious diseases (SEROMOD) workshop: *Combining serological data and data on social contact patterns to quantify individual heterogeneity to single and recurrent infections*, London, UK, November 12, 2014.

– The 6th SIMID workshop: *Estimating heterogeneity in susceptibility, infectivity and activity levels using serological data*, Antwerp, Belgium, April 28–29, 2015.

– RIVM workshop on multi-strain pathogen dynamics: *Exploring links between modelling multivariate serological data and competing risks* (together with Niel Hens), Bilthoven, Utrecht, The Netherlands, September 15–16, 2016.

– Seminar at Center for Statistics: *The use of frailty models in mathematical epidemiology could reveal how diseases are transmitted*, Hasselt, Belgium, April 7, 2017.

– Seminar at the University Medical Center Göttingen: *Quantifying individual heterogeneity in the acquisition of recurrent infections using bivariate frailty models*, Göttingen, Germany, December 15, 2017.

– Sensitivity Meeting: *Modeling longitudinal malaria parasitaemia data with outcome-dependent*

observation times, Hasselt, Belgium, February, 21, 2018.

– ERC Workshop on Serology: *Analyzing Belgian mumps serial serological survey data using a Bayesian mixture approach*, Antwerp, Belgium, May 15, 2018.

– I-BioStat Research Day: *The analysis of Belgian serial serological survey data on mumps using a Bayesian mixture approach*, Hasselt, Belgium, October, 24, 2018.

– The 40th Annual Conference of the International Society for Clinical Biostatistics (ISCB40): *The analysis of Belgian serial serological survey data on mumps using a Bayesian mixture approach*, Leuven, Belgium, July 15, 2019.

– StatUa day 2020: *The ODS of infection: Outcome-Dependent Sampling and Heterogeneity in the Acquisition of Malaria Infections*, Antwerp, February 7, 2020.

– Healixia webinar: *The scientific approach to a virus epidemic*, Belgium, November 16, 2020.

– Interuniversity Doctoral School Course entitled *How to communicate and report about your statistical analyses and results? Lessons learnt during a global crisis*, UHasselt, Belgium, December 9-10, 2021.

– CMStatistics conference 2021: *Using frailty models in mathematical epidemiology to reveal how diseases are transmitted*, London, UK, December 18, 2021.

– ATMS workshop 2023: *Nonparametric estimators for quantiles of the conditional residual lifetime distribution*, Leuven, Belgium, May 4, 2023.

– The 5th Central European Network (CEN) conference 2023: *Individual heterogeneity in humoral immune response: A Bayesian frailty approach*, Basel, Switserland, September 7, 2023.

– BelCoVac symposium: *Impact of the use of COVID-19 serological data on modeling*, Brussels, Belgium, September, 15, 2023.

– CMStatistics conference 2023: *Nonparametric estimation of quantiles of the conditional residual lifetime distribution*, Berlin, Germany, December 17, 2023.

– Invited talk at Leiden University Medical Center 2025: *Survival analysis in infectious disease modeling: From local association in bivariate event time data to the analysis of multivariate serological data*, Leiden, The Netherlands, November 19, 2025.

– *Solar Cookers for All (Sc4all): Collaboration between UHasselt and University of Lubumbashi*, Day of Science, UHasselt, Belgium, November 23, 2025.

– Closing International Francqui workshop 2026 on "Causal aspects of lifetime and functional data analysis": *Survival analysis within infectious disease modelling: From local association in bivariate event time data to the analysis of multivariate serological data*, KU Leuven, Belgium, May 26, 2026.

– Joint Meeting SIS-FENStatS 2026: *Survival analysis within infectious disease modeling: from association in event time data to the analysis of serological data*, Sapienza University Rome, Italy, June 26, 2026.

– Workshop on "Combining Infectious Disease Modelling and AI: Methods and Communication": *Approaches to infectious disease modelling and mitigation: Mathematical, statistical and AI perspectives*, Learning & Innovation Center, ULB-VUB, September 14, 2026.

Posters

– The 28th International Workshop on Statistical Modelling (IWSM 2013): *Extending frailty models applied to infectious disease epidemiology*, Palermo, July 8–12, 2013.

– The 4th International Conference on Infectious Disease Dynamics (Epidemics): *Sero-epidemiology of mumps in Belgium: A simple method to quantify outbreak risk in highly vaccinated populations*, Amsterdam, the Netherlands, November 19–22, 2013.

– The European Congress of Epidemiology: *A simple method to quantify outbreak risk in highly vaccinated populations with application to Belgian serology on mumps and measles*, Maastricht, the Netherlands, June 25–27, 2015.

– Workshop on Complex Time-to-Event Data: *A general correlated gamma frailty model for bivariate time-to-event data*, Université catholique de Louvain, Louvain-la-Neuve, December 17–18, 2015.

– The 6th IBS Channel Network Conference: *An extension of the relative frailty variance for correlated frailty models applied to bivariate current status data*, Hasselt University, April 24–26, 2017.

Panel Discussions

– BelCoVac symposium, Brussels, Belgium, September, 15, 2023.

– Closing event of the Lorentz Center Workshop on *Connecting Survival Analysis and Infectious Disease Modeling*, Leiden, June 15–19, 2026.

Research Visits

– Prof. dr. Andreas Wienke, Martin-Luther-Universität Halle-Wittenberg:
Institut für Medizinische Epidemiologie, Biometrie und Informatik, Halle (Saale), Germany, July 22–26, 2012.

– Prof. dr. Jacco Wallinga, National Institute for Public Health and the Environment (RIVM), Bilthoven, Utrecht, March 31– May 2, 2014.

– dr. Michiel van Boven, National Institute for Public Health and the Environment (RIVM), Bilthoven, Utrecht, July 7, 2015.

– Prof. dr. Steffen Unkel, University Medical Center Göttingen, Department of Medical Statistics, Göttingen, Germany, December 14–15, 2017.

– Prof. dr. Jacco Wallinga, dr. Jantien Backer, National Institute for Public Health and the Environment (RIVM), Bilthoven, Utrecht, April 13–14, 2023.

– Prof. dr. Arnaud Marchant, Université Libre de Bruxelles, November, 2024.

– Prof. dr. Hein Putter, Leiden University Medical Center, November, 2025.

– Prof. dr. Liesbeth De Wreede, Leiden University Medical Center, November, 2025.

– University of Lubumbashi, part of a Belgian delegation in the context of ongoing IUC project and Sc4all project, October 2026.

Reviewer Tasks

– Biostatistics, BMC Infectious Diseases, Epidemics, The Lancet Infectious Diseases, European Journal of Epidemiology, South African Statistical Journal, Statistics in Medicine, BMC Medical Research Methodology.

Memberships

– Member of the Royal Statistical Society of Belgium (2017 – present)

– Member of the Modelling Infectious Diseases (MID) group (Center for Statistics, I-BioStat, UHasselt, 2011 – present)

– Member of the Simulation Models of Infectious Diseases (SIMID) group (MID – UHasselt and CHERMID – University of Antwerp, www.simid.be, 2011 – present)

– Promotor of Statua core research facility (October 2019 – present)

– Board member of the Royal Statistical Society of Belgium (January 2022 – present)

Other Scientific Output and Service to the Public

– Member of the 'short and long-term modelling of COVID-19'-group in collaboration with colleagues from the Scientific Institute of Public Health, Sciensano

– Member of the RESTORE consortium on long-term modelling of SARS-CoV-2 transmission in Belgium

– Advice on the spread of SARS-CoV-2 and impact of intervention measures to several federal and regional taskforces and political bodies (including the risk assessment group (RAG), risk management group (RMG), corona commissariat, intercabinets working group (IKW), GEES, GEMS, etc.)

– Who will become World Champion Football? A simulation-based perspective. Day of Science, November 27, 2022, Brussels, Belgium.

– Imaginary exhibition – Splendour and Power of Mathematics. Guide for secondary school students. November 17, 2022 - December 22, 2022.

EDUCATION

Additional Courses

– *Statistical Methods in Infectious Disease Epidemiology*, Biostatistics Master Program, Universität Zürich, lecturer: Prof. dr. Michael Höhle, February 9–14, 2012.

– *Academic English*, Doctoral School of Science and Technology Program, Hasselt University,

lecturer: Prof. dr. Eric Caers, May–June, 2012.

- *Intercultural Training Day*, I-BioStat, lecturer: Bernadette van Houten, February 4, 2016.
- *Competing Risks: Concepts, Methods and Software*, I-BioStat (Leuven), lecturer: Prof. dr. Ronald B. Geskus, November 17–18, 2016.
- *Multiplicity in Clinical Trials: Concepts and Solutions*, I-BioStat (Leuven), lecturer: Prof. dr. Frank Bretz, December 19–20, 2017.
- *Francqui Lecture on Spatial Statistics: A Short Course in Model-based Geostatistics*, I-BioStat (Hasselt), lecturer: Prof. dr. Peter Diggle, May 22, 2018.
- *Media training*, UHasselt (Hasselt), lecturer: Machteld Kooij, October 14, 21, 2022.
- *Training in performing selection interviews*, UHasselt (Hasselt), lecturer: Obilisk, January 26, 2023.
- *Workshop view on strengths*, UHasselt (Hasselt), lecturer: dr. Ilse Van Damme, October 17, 2023.
- *Workshop on coping with stress*, UHasselt (Hasselt), December 5, 2023.

Assistance Activities

- *Methoden en Statistiek*, Bachelor Biomedical Sciences, Hasselt University, 2011–2014.
- *Wiskundige Modellen voor Levenswetenschappen 2*, Bachelor Mathematics, Hasselt University, 2014–2018.
- *Statistisch Modelleren*, Bachelor Biomedical Sciences, Hasselt University, 2015–2017.

Teaching Activities

Hasselt University:

- *Project Discovering Associations*, Master of Statistics, 2015–2016. Member of teaching team.
- *Project Multivariate and Hierarchical Data*, Master of Statistics & Data Science, 2016–present. Co-lecturer.
- *Modelling Infectious Diseases*, Master of Statistics & Data Science, 2021–present. Member of teaching team.
- *Basic Statistics*, Master Biomedical Sciences, 2015–2023. Coordinating lecturer (module).
- *Biostatistics*, Master Biomedical Sciences, 2015–2023. Coordinating lecturer (module).
- *Experimental Design in Bioelectronics & Nanotechnology*, Master Biomedical Sciences, 2023–present. Member of teaching team.
- *Experimental Design in Environmental Health Sciences*, Master Biomedical Sciences, 2023–present. Member of teaching team.
- *Experimental Design in Molecular Mechanisms in Health and Disease*, Master Biomedical Sciences, 2023–present. Member of teaching team.

– *Experimental Design in Clinical Biomedical Sciences*, Master Biomedical Sciences, 2025–present. Member of teaching team.

– *Statistisch Modelleren*, Bachelor Biomedical Sciences, 2015–2017. Coordinating lecturer.

– *Multidisciplinary Biomedical Research*, Bachelor Biomedical Sciences, 2018–present. Member of teaching team.

– *Medical Statistics 2*, Bachelor Medicine, 2021–present. Coordinating lecturer.

– *Topics in Biostatistics, Bio-informatics and Epidemiology*, Bachelor Mathematics, 2016–present. Co-lecturer.

– *Statistical Models and Data Analysis 2*, Bachelor Mathematics, 2016–2018. Co-lecturer.

– *Bachelor Thesis Supervision*, Bachelor Medicine, 2015–2022.

– *Master Thesis Supervision*, Master of Statistics & Data Science, 2011–present.

University of Antwerp:

– *Epidemiology and Medical Statistics*, Bachelor Medicine, 2018–2021. Coordinating lecturer.

– *Medical Statistics 1*, Bachelor Medicine, 2021–present. Coordinating lecturer.

– *Medical Statistics 2*, Bachelor Medicine, 2021–present. Coordinating lecturer.

– *Bachelor thesis team*, Bachelor Medicine, 2022–present. Member of teaching team.

– *Master thesis team*, Master Medicine, 2019–present. Member of teaching team.

– *Advanced Methods in Epidemiology*, Master of Epidemiology, 2018–2025. Co-coordinating lecturer.

– *Advanced Methods in Epidemiology*, Master of Epidemiology, 2025–present. Coordinating lecturer.

– *Classical and Modern Methods of Data Analysis*, Master of Epidemiology, 2018–present. Coordinating lecturer.

– *Data Management and Statistical Software*, Master of Epidemiology, 2018–present. Coordinating lecturer.

– *Master Thesis Supervision*, Master of Epidemiology, 2018–present.

Interuniversity Educational Programmes

– *Research Methods in Global Health I*, Interuniversity Master of Science in Global Health, 2019–present. Coordinating lecturer.

– *Biostatistics*, Interuniversity Master of Occupational Medicine, 2021–present. Member of teaching team.

Extracurricular Activities

– "Prof. voor de Klas" workshops for students in secondary school (2017, 2019–2023). Coordinating lecturer.

– Introduction to R programming for mathematics teachers in secondary school (2023, 2024). Coordinating lecturer.

– Statistical hypothesis testing for mathematics teachers in secondary school (2024, 2025). Lecturer.

– Construction of confidence intervals for mathematics teachers in secondary school (2026). Coordinating Lecturer.

– *Epidemiology, Biostatistics and Qualitative Research Design* (EBQ), 2018–present. Member of teaching team.

– *EMSA workshop on Mathematics*, 2021–2023. Coordinating lecturer.

Master Thesis Students

– Kourkouni, E. (2014). Assessing outbreak risk in highly vaccinated populations using spatial seroprevalence data on rubella. Supervisor: Prof. dr. Niel Hens; Co-supervisor: **S. Abrams**.

– Mehari Beyene, K. (2016). Inferring infectious disease parameters from serial seroprevalence data on hepatitis A infection in the Netherlands. Supervisor: **S. Abrams**; Co-supervisor: Prof. dr. Niel Hens.

– Sali Dauda, M. (2017). Inferring infectious disease parameters from serial seroprevalence data on hepatitis A infections in the United States. Supervisor: **S. Abrams**; Co-supervisor: Prof. dr. Niel Hens.

– Okoth Opado, L. (2017). HPV DNA detection in urine: effect of a first-void urine collection device and time of collection. External Supervisor: dr. Vorsters Alex; Internal Supervisors: dr. Robin Bruyndonckx & **S. Abrams**.

– Leonard Eluma Nwogu-Ikojo (2018). Malaria in pregnancy. External Supervisor: Prof. dr. Koen Peeters; Internal Supervisors: **S. Abrams** & dr. Yannick Vandendijck.

– Carl Nwana Ndibmun (2018). The prevalence and treatment of epilepsy in the Aketi health zone. External Supervisor: Prof. dr. Robert Colebunders; Internal Supervisor: **S. Abrams**

– Atahigwa Catherine (2019). Trends and determinants of institutional delivery services utilization among mothers giving birth in urban slums of Nairobi, Kenya. Supervisors: Prof. dr. Annelies van Rie, **S. Abrams**.

– Mildred Tita Afoumbom (2019). Risk factors for cholera during the 2018 epidemic in Kinshasa, Democratic Republic of the Congo: Findings from a matched case control study. External Supervisor: Mr. Florian Vogt; Internal Supervisor: **S. Abrams**.

– Irene Garcia-Fogeda (2020). Inferring individual heterogeneity and association in the acquisition of infectious diseases based on serial serological survey data. Internal Supervisor: **S. Abrams**.

– Christine Jani (2020). Mass drug administration of ivermectin and dyhidroartemisinin-piperaquine as an additional intervention for malaria elimination (MASSIV). External Supervisor: Prof. dr. Koen Peeters; Internal Supervisor: **S. Abrams**.

– Bernard Osangir (2020). Assessing the inter-rater reliability in a prospective study to assess the Pediatric Respiratory Syncytial Virus (RSV) Electronic Severity and Outcome Rating System (PRESORS) and clinical endpoints in neonates, infants, and children $\leq$36 months of age hospitalized with RSV infection. External Supervisor: dr. Yannick Vandendijck; Internal Supervisor: **S. Abrams**.

– Solomon Wafula (2020). Effect of ivermectin treatment on the frequency of seizures in persons with onchocerciasis-associated epilepsy. External Supervisor: Prof. dr. Robert Colebunders; Internal Supervisor: **S. Abrams**.

– Leon D'Hulster (2020). Online communication skills training to reduce antibiotic prescribing among general practitioners. A stepped-wedge cluster randomized trial. Supervisor: Prof. dr. Samuel Coenen; Co-supervisor: **S. Abrams**.

– Peter San Martin (2020). Environmental factors as predictors of the incidence of Japanese encephalitis in the Philippines. Supervisor: **S. Abrams**.

– Justin Westenberg (2021). Inter-individual variability in endoxifen exposure: predictive modelling and clinical implications. Supervisor: **S. Abrams**.

– Febe Brackx (2021). Growth curves non-linear modeling in vaccine development. External supervisor: dr. B. G. Franq; Internal supervisor: **S. Abrams**.

– Degefaye Anlay (2021). A Bayesian approach to estimate the probability of resistance to bedaquiline in the presence of specific genomic variants. Supervisors: Prof. dr. Annelies van Rie, **S. Abrams**.

– Amaryl Lecompte (2023). Differences in cumulative incidence of confirmed mpox cases at district level in Belgium during the 2022 outbreak. External supervisor: Prof. dr. D. Van Beckhoven; Internal Supervisor: **S. Abrams**.

– Adina Asim (2023). Development, validation and application of a transmission model for fascioliasis. External supervisor: dr. V. Dernauw, Prof. dr. B. Devleesschauwer; Internal supervisor: **S. Abrams**.

– Julie Domen (2023). Determinants of moderate-to-severe side-effects after booster doses of COVID-19 mRNA vaccines in a cohort of primary health care providers in Belgium. Supervisors: Prof. dr. Samuel Coenen, **S. Abrams**.

– Abdulaziz Mwandu (2024). Design and statistical analysis of experiments for determining the standardized performance of solar cooker appliances. Supervisors: **S. Abrams**, Prof. dr. Luc Bijnens, Prof. dr. Didier Kumwimba.

– Felista Kauki Cosmas (2024). The use of survival analysis for the determination of the performance of solar cookers in Africa. Supervisors: **S. Abrams**, Prof. dr. Luc Bijnens, Prof. dr. Didier Kumwimba.

– Baraka Rashidi (2025). Innovative statistical analyses methods to quantify the performance of novel solar cooker appliances produced in resource-limited settings: A comparative approach. Supervisors: **S. Abrams**, Prof. dr. Luc Bijnens, Prof. dr. Didier Kumwimba.

– Joyce Kuria (2025). Short-term effects of air pollution on early-life wheezing: A case-crossover study and simulation-based evaluation of analytical assumptions. Supervisors: **S. Abrams**, Prof. dr. Lidia Casas Ruiz.

PhD Students

– Dr. Levicatus Mugenyi. Estimating infectious disease parameters for the transmission of malaria in Ugandan children. Defended on April 12, 2018.
Supervisors: Prof. dr. Niel Hens & Prof. dr. Sarah Staedke; Co-supervisor: **S. Abrams**.

– Dr. Mai Phuong Thao Tran. Mathematical and statistical models for estimating infectious disease parameters based on serological and social contact data. Defended on September 23, 2020.
Supervisor: Prof. dr. Niel Hens; Co-supervisor: Prof. dr. P. Beutels.
Member of the doctoral committee: **S. Abrams**.

– Dr. Alfred Dusabimana. Ways to mitigate the public health problem caused by onchocerciasis-associated epilepsy. Defended on August 23, 2022.
Supervisors: Prof. dr. em. Robert Colebunders, **S. Abrams**, Prof. dr. Samuel Coenen.

– Dr. Julie Schenk. On the sero-epidemiology of measles in Belgium: on immunogenecity and persistence of vaccination and immunity gaps. Defended on September 13, 2022.
Supervisor: Prof. dr. Niel Hens; Co-supervisor: **S. Abrams**.

– Dr. Adelino Martins. Statistical methods to estimate infectious disease parameters and individual heterogeneity. Defended on September 28, 2022.
Supervisor: **S. Abrams**; Co-supervisor: Prof. dr. N. Hens, Prof. dr. M. Aerts.

– Dr. Hamid Yimam Hassen. Disparities in cardiovascular diseases and risk factors across contexts and effectiveness of primary preventive intervention. Defended on June 21, 2023.
Supervisor: Prof. dr. H. Bastiaens & **S. Abrams**.

– Dr. Irene Garcia Fogeda. From antibody kinetics to correlates of protection: Insights from within-host mathematical models. Defended on September 7, 2026.
Supervisors: Prof. dr. N. Hens & **S. Abrams**.

– Ömer Sercik; Supervisor: Prof. dr. A. Verhasselt; Co-supervisors: **S. Abrams**.

– Miguel-Angel Beynaerts; Supervisors: Prof. dr. A. Verhasselt, Prof. dr. Niel Hens; Co-supervisor: **S. Abrams**.

– Alessandro Grosso; Supervisor: **S. Abrams**; Co-supervisors: Prof. dr. N. Hens & Prof. dr. K. Peeters.

– Ilaria Misuri; Supervisor: **S. Abrams**; Co-supervisor: Prof. dr. Pieter Libin.

PhD Committees

– Dr. Elise Kuylen (2024). More entities, more problems? Individual-based models for infectious disease transmission. *Chairman of the PhD committee.* University of Antwerp.

– Dr. Zerihun Zeleke (2023). Perceptions and impact of malaria health education in school children; Challenges in malaria control & elimination in Gamo and Gofa Zones, SNNPR, Ethiopia. *Member of the jury.* University of Antwerp.

– Dr. Anita Mesic (2024). Alternative methodological approaches to assess long-term HIV virological and clinical outcomes in resource-limited settings. *Chairman of the PhD committee.* University of Antwerp.

– Dr. Kenneth Otabil (2025). Epidemiological studies of onchocerciasis in Ghana: Insights from Ghana's Middle Belt and Challenges in Attaining Elimination. *Member of the jury.* University of Antwerp.

– Dr. Behailu Gello (2025). Cutaneous Leishmaniasis: The Epidemiology, Diagnostics and the Psychosocial Impacts in the South Ethiopian Rift valley. *Member of the jury.* University of Antwerp.

– Dr. James Wambua (2024). Behavior and infectious disease dynamics: applications using pandemic social contacts, Varicella-zoster virus transmission modeling with cost-effectiveness analysis, and Respiratory Syncytial Virus seasonality. *Member of the jury.* UHasselt.

– Dr. Kim Hendrickx (2018). Nonparametric statistics with shape constraints and censored data. *Member of the jury.* UHasselt.

– Dr. Bryan Sumalinab (2025). Bayesian inference with Laplace approximations and P-splines in infectious disease and spatial epidemiology. *Member of the jury.* UHasselt.

– Dr. Myrthe D'Haen (2025). Copula models for complex data: applications to dependent censoring and longitudinal data. *Member of the jury.* UHasselt.

– Dr. Neilshan Loedy (2025). Statistical methods for analyzing infectious diseases using social contact data. *Member of the jury.* UHasselt.

CONSULTANCY

Consultancy Projects

– Benign Prostatic Hyperplasia (BPH) Study, in collaboration with Yannick Vandendijck, Welcome Mkhululi Wami and Prof. dr. Herbert Thijs, January, 2012.

– Sensing With Insulin pump Therapy to Control HbA_{1c} (SWITCH) Study: Descriptive analysis, March, 2012.

– Vlaamse Interuniversitaire Raad (VLIR) Project, in collaboration with Yannick Vandendijck, Stijn Jaspers and Yves Grouwels.

– Wetenschappelijk Instituut Volksgezondheid (WIV) Project: Which specialisation center is preferred when having a sexually transmitted disease (STD) in Belgium? Tree-based methods to analyse SOA-network data on Chlamydia, Condylomata, Gonorrhea and Syphilis, in collaboration with Prof. dr. Niel Hens and Prof. dr. Christel Faes.