

# Dimitris Rizopoulos

Birth date: December 9th, 1979

Nationality: Greek

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Department of Biostatistics

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ACADEMIC POSITIONS     ◇ **Dept. of Biostatistics, Erasmus University Medical Center**

- Professor, June 2018 – present
- Associate Professor, March 2014 – May 2018
- Assistant Professor, September 2008 – February 2014

EDUCATION     ◇ **Leuven Biostatistics and statistical Bioinformatics Centre, Katholieke Universiteit Leuven**

- PhD in Mathematics (direction Biostatistics), October 2004 – May 2008  
Thesis title: *Joint Modelling of Longitudinal and Survival Data* (advisor: Prof. Geert Verbeke / co-advisors: Prof. E. Lesaffre & Prof. I. Gijbels)
- pre-Doctoral studies, October 2003 – September 2004

◇ **Dept. of Statistics, Athens University of Economics and Business**

- Master in Statistics, October 2002 – December 2003
- Bachelor in Statistics, October 1998 – September 2002

RESEARCH INTERESTS     ◇ Joint modelling of longitudinal and time-to-event data

- ◇ Longitudinal data analysis
- ◇ Survival analysis
- ◇ Statistical analysis with missing data, primarily in longitudinal studies
- ◇ Psychometrics, latent variable modelling & item response theory
- ◇ Statistical computing in R

GRANTS      ◇ Grants

AWARDS

SCHOLARSHIPS

- ERASMUS MC GRANT, Erasmus Medical Center Rotterdam (2015–2019, €150K) – jointly with Prof. E. Steyerberg
- VIDI, NWO: Netherlands Organization for Scientific Research PI (2014–2019, €800K)
- Aristeia II grant, Athens University of Economics and Business (2014–2015, €100K) – jointly with Prof. V. Vasdekis (PI) and Prof. I. Moustaki
- Erasmus University Rotterdam Fellowship PI (2011–2014, €135K)
- Erasmus Trustfonds travel grant (2011, €0.75K)
- PEVE3 grant, Athens University of Economics and Business, (2011, €12K) – jointly with Prof. V. Vasdekis (PI) and Prof. I. Moustaki
- PEVE2 grant, Athens University of Economics and Business (2010, €12K) – jointly with Prof. V. Vasdekis (PI)
- U.S. Army Medical Research grant (2006, €3K)

◇ Awards

- ISCB Student Conference award (2007)
- IWSM Student Paper award (2007)
- IWSM Student Paper award (2007)
- ISCB Student Conference award (2005)
- Academic Excellence award, G. Halkiopoulos Foundation, Athens University of Economics and Business (2001)

◇ Scholarships

- Katholieke Universiteit Leuven for pre-doctoral studies (2003–2004, €12K)
- PricewaterHouseCoopers for Master studies (2002–2003, €4.5K)

PUBLICATIONS ◇ Books

- Rizopoulos, D. (2012). *Joint Models for Longitudinal and Time-to-Event Data, with Applications in R*. Boca Raton: Chapman and Hall/CRC. [[Book Website](#); [Publisher Website](#)]

◇ International Journals

1. Rose, S. and Rizopoulos, D. (2020). Machine learning for causal inference in Biostatistics. *Biostatistics*, to appear.
2. Mauff, K., Steyerberg, E.W., Kardys, I., Boersma, H. and Rizopoulos, D. (2020). Joint models with multiple longitudinal outcomes and a time-to-event outcome: A corrected two-stage approach. *Statistics and Computing*, to appear.

3. Tomer, A., Rizopoulos, D., Nieboer, D., Drost, F.-J., Roobol, M.J. and Steyerberg, E.W. (2019). Personalized decision making for biopsies in prostate cancer active surveillance programs. *Medical Decision Making* **39**, 499–508.
4. Tomer, A., Nieboer, D., Roobol, M.J., Steyerberg, E.W. and Rizopoulos, D. (2019). Personalized schedules for surveillance of low-risk prostate cancer patients. *Biometrics* **75**, 153–162.
5. Romeo J.L.R., Papageorgiou, G., Takkenberg, J.J.M., Roos-Hesselink, J.W., van Leeuwen, W.J., Cornette, J.M.J., Rizopoulos, D., Bogers, A.J.J.C. and Mokhles, M.M. (2019). Influence of pregnancy on long-term durability of allografts in right ventricular outflow tract. *Journal Thoracic Cardiovascular Surgery*, **S0022-5223**, 31866-5.
6. Papageorgiou, G., Mokhles, M.M., Takkenberg, J.J.M. and Rizopoulos, D. (2019). Individualized dynamic prediction of survival with the presence of intermediate events. *Statistics in Medicine*, to appear.
7. Harlaar, L., Hogrel, J.Y., Perniconi, B., Kruijshaar, M.E., Rizopoulos, D., Taouagh, N., Canal, A., Brusse, E., van Doorn, P.A., van der Ploeg, A.T., Laforet, P. and van der Beek, N.A.M.E. (2019). Large variation in effects during 10 years of enzyme therapy in adults with Pompe disease. *Neurology* **93**, e1756-e1767.
8. Roumans C.A.M., van der Bogt, R.D., Steyerberg, E.W., Rizopoulos, D., Lansdorp-Vogelaar, I., Sharma, P., Spaander, M.C.W. and Bruno, M.J. (2019). Adherence to recommendations of Barrett’s esophagus surveillance guidelines: a systematic review and meta-analysis. *Endoscopy*, to appear.
9. Baart, S., Boersma, E. and Rizopoulos, D. (2019). Joint models for longitudinal and time-to-event data in a case-cohort design. *Statistics in Medicine* **38**, 2269–2281.
10. Erler, N.S., Rizopoulos, D., Jaddoe, V.W., Franco, O.H. and Lesaffre, E.M. (2019). Bayesian imputation of time-varying covariates in linear mixed models. *Statistical Methods in Medical Research* **28**, 555–568.
11. van Oudenhoven, F.M., Swinkels, S.H.N., Hartmann, T., Soininen, H., van Hees, A.M.J. and Rizopoulos, D. (2019). Using joint models to disentangle intervention effect types and baseline confounding: an application within an intervention study in prodromal Alzheimer’s disease with Fortasyn Connect. *BMC Medical Research Methodology* **19**, 163.
12. Rueda-Ochoa, O.L., Rizopoulos, D. and Kavousi, M. (2019). Letter by Rueda-Ochoa et al regarding article, “Potential cardiovascular disease events prevented with adoption of the 2017 american college of Cardiology/American heart association blood pressure guideline”. *Circulation* **139**, e1019–e1020.
13. Tsehaie, J., Porsius, J.T., Rizopoulos, D., Slijper, H.P., Feitz, R., Hovius, S.E.R. and Selles, R. W. (2019). Response to conservative treatment for thumb carpometacarpal osteoarthritis is associated with conversion to surgery: A prospective cohort study. *Physical Therapy* **99**, 570–576.

14. van den Berg, V.J., Strachinaru, M., Akkerhuis, K.M., Baart, S., Brankovic, M., Constantinescu, A.A., Cornel, J.H.c, Manintveld, O.C., Umans, V.A.W.M., Rizopoulos, D., Geleijnse, M.L., Boersma, E., van Dalen, B.M. and Kardys, I. (2019). Repeated echocardiograms do not provide incremental prognostic value to single echocardiographic assessment in minimally symptomatic patients with chronic heart failure: Results of the bio-SHiFT study. *Journal of the American Society of Echocardiography* **32**, 1000–1009.
15. Brankovic, M., Kardys, I., Steyerberg, E.W., Lemeshow, S., Markovic, M., Rizopoulos, D. and Boersma, E. (2019). Understanding of interaction (subgroup) analysis in clinical trials. *European Journal of Clinical Investigation* **49**(8), art. no. e13145.
16. Molema, F., Gleich, F., Burgard, P., van der Ploeg, A.T., Summar, M. L., Chapman, K. A., et al. Additional individual contributors from E-IMD. (2019). Decreased plasma L-arginine levels in organic acidurias (MMA and PA) and decreased plasma branched-chain amino acid levels in urea cycle disorders as a potential cause of growth retardation: Options for treatment. *Molecular Genetics and Metabolism*, to appear.
17. Tsehaie, J., Porsius, J.T., Rizopoulos, D., Slijper, H.P., Feitz, R., Hovius, S.E.R. and Selles R.W. (2019). Response to conservative treatment for thumb carpometacarpal osteoarthritis is associated with conversion to surgery: A prospective cohort study. *Physical Therapy*, to appear.
18. Rueda-Ochoa, O.L., Smiderle-Gelain, M.A., Rizopoulos, D., Dhana, K., Van Den Berge, J.-K., Echeverria, L.E., Ikram, M.A., Deckers, J.W., Franco, O.H. and Kavousi, M. (2019). Risk factors for longitudinal changes in left ventricular diastolic function among women and men. *Heart*, to appear.
19. Sparreboom, C.L., Komen, N., Rizopoulos, D., van Westreenen, H.L., Doornebosch, P.G., Dekker, J.W.T., Menon, A.G., Tuynman, J.B., Daams, F., Lips, D., van Grevenstein, W.M.U., Karsten, T.M., Lange, J.F., D’Hoore, A. and Wolthuis, A.M. (2019). Transanal total mesorectal excision: How are we doing so far? *Colorectal Disease* **21**, 767–774.
20. Sparreboom, C.L., Komen, N., Rizopoulos, D., Verhaar, A.P., Dik, W.A., Wu, Z., van Westreenen, H.L., Doornebosch, P.G., Dekker, J.W.T., Menon, A.G., Daams, F., Lips, D., van Grevenstein, W.M.U., Karsten, T.M., Bayon, Y., Peppelenbosch, M.P., Wolthuis, A.M., D’Hoore, A. and Lange, J.F. (2019). A multicentre cohort study of serum and peritoneal biomarkers to predict anastomotic leakage after rectal cancer resection. *Colorectal Disease*, to appear.
21. Gerritsen, J.K.W., Vietor, C.L., Rizopoulos, D., Schouten, J.W., Klimek, M., Dirven, C.M.F. and Vincent, A.J.E. (2019). Awake craniotomy versus craniotomy under general anesthesia without surgery adjuncts for supratentorial glioblastoma in eloquent areas: a retrospective matched case-control study. *Acta Neurochirurgica* **161**, 307–315.
22. Rueda-Ochoa, O.L., Rojas, L.Z., Ahmad, S., van Duijn, C. M., Ikram, M.A., Deckers, J.W., Rizopoulos, D. and Kavousi, M. (2019). Impact of

- cumulative SBP and serious adverse events on efficacy of intensive blood pressure treatment: A randomized clinical trial. *Journal of Hypertension* **37**, 1058–1069.
23. Masini, G., Foo, L.F., Cornette, J., Tay, J., Rizopoulos, D., McEniery, C.M., Wilkinson, I.B. and Lees, C.C. (2019). Cardiac output changes from prior to pregnancy to post partum using two non-invasive techniques. *Heart* **105**, 715–720.
24. Fest, J., Ruiter, T.R., Groot Koerkamp, B., Rizopoulos, D., Ikram, M.A., van Eijck C.H.J. and Stricker, B.H. (2019). The neutrophil-to-lymphocyte ratio is associated with mortality in the general population: The Rotterdam Study. *European Journal of Epidemiology* **34**, 463–470.
25. Van Der Willik, K.D., Fani, L., Rizopoulos, D., Licher, S., Fest, J., Schagen, S.B., Ikram, M.K. and Ikram, M.A. (2019). Balance between innate versus adaptive immune system and the risk of dementia: A population-based cohort study. *Journal of Neuroinflammation* **16**(1), art. no. 68.
26. Papageorgiou, G., Mauff, K., Tomer, A. and Rizopoulos, D. (2019). An overview of joint modeling of time-to-event and longitudinal outcomes. *Annual Review of Statistics and Its Application* **6**, 223–240.
27. van der Meijden, J.C., Kruijshaar, M.E., Harlaar, L., Rizopoulos, D., van der Beek, N.A.M.E. and van der Ploeg A.T. (2019). Long-term follow-up of 17 patients with childhood Pompe disease treated with enzyme replacement therapy. *Journal of Inherited Metabolic Disease* **41**, 1205–1214.
28. Bouwens, E., Brankovic, M., Mouthaan, H., Baart, S., Rizopoulos, D., van Boven, N., Caliskan, K., Manintveld, O., Germans, T., van Ramshorst, J., Umans, V., Akkerhuis, K.M. and Kardys, I. (2019). Temporal patterns of 14 blood biomarker candidates of cardiac remodeling in relation to prognosis of patients with chronic heart failure - the BioSHiFT study. *Journal of the American Heart Association* **8**, e009555.
29. Neelis, E., Olieman, J., Rizopoulos, D., Wijnen, R., Rings, E., Koning, B. and Hulst, J. (2019). Growth, body composition and micronutrient abnormalities during and after weaning off home parenteral nutrition. *Journal of Pediatric Gastroenterology and Nutrition* **67**, e95–e100.
30. Rinkel, W.D., Rizopoulos, D., Aziz, M.H., Van Neck, J.W., Cabezas, M.C. and Coert, J.H. (2018). Grading the loss of sensation in diabetic patients: A psychometric evaluation of the rotterdam diabetic foot study test battery. *Muscle Nerve* **58**, 559–565.
31. Andrinopoulou, E.R., Eilers, P.H.C., Takkenberg, J.J.M. and Rizopoulos, D. (2018). Improved dynamic predictions from joint models of longitudinal and survival data with time-varying effects using P-splines. *Biometrics* **74**, 685–693.
32. de Vos, A.S., van der Schoot, E.C.E., Rizopoulos, D. and Janssen, M.P. (2018). Predicting anti-RhD titers in donors: Boosting response and decline rates are personal. *PLoS One*, 13(5), art. no. e0198381.

33. van der Meijden, J.C., Kruijshaar, M.E., Rizopoulos, D., van Doorn, P.A., van der Beek, N.A.M.E. and van der Ploeg A.T. (2018). Enzyme replacement therapy reduces the risk for wheelchair dependency in adult Pompe patients. *Orphanet Journal of Rare Diseases* **13**, 82.
34. Blikman, L.J.M., van Meeteren, J., Rizopoulos, D., de Groot, V., Beckerman, H., Stam, H.J. and Bussmann, J.B.J. (2018). Physical behavior is weakly associated with physical fatigue in persons with multiple sclerosis-related fatigue. *Journal of Rehabilitation Medicine* **50**, 821–827.
35. Favejee, M.M., van der Meijden, J.C., Kruijshaar, M.E., Rizopoulos, D., van der Ploeg, A.T. and Bussmann, J.B.J. (2018). Association of muscle strength and walking performance in adult patients with pompe disease. *Physical Therapy* **98**, 925–931.
36. Neelis, E., Olieman, J., Rizopoulos, D., Wijnen, R., Rings, E., de Koning, B. and Hulst, J. (2018). Growth, body composition, and micronutrient abnormalities during and after weaning off home parenteral nutrition. *Journal of Pediatric Gastroenterology and Nutrition* **67**, e95–e100.
37. van den Beld, A., Carlson, O., Doyle, M.E., Rizopoulos, D., Ferrucci, L., Van der Lely, A.J., Egan, J. (2018). IGFBP-2 and aging: A 20-year longitudinal study on IGFBP-2, IGF-I, BMI, insulin sensitivity and mortality in an aging population. *European Journal of Endocrinology* **180**, 109–116.
38. Kuperus, E., van der Meijden, J.C., Groen, S.L.M., Kroos, M.A., Hoogeveen-Westerveld, M., Rizopoulos, D., Martinez, M.Y.N., Kruijshaar, M.E., van Doorn, P.A., van der Beek, N.A.M.E., van der Ploeg, A.T. and Pijnappel, P.W.W.M. (2018). The ACE I/D polymorphism does not explain heterogeneity of natural course and response to enzyme replacement therapy in Pompe disease. *PLoS One*, 13(12), art. no. e0208854.
39. Boele, H.-J., Peter, S., Ten Brinke, M.M., Verdonschot, L., Ijpelaar, A.C.H., Rizopoulos, D., Gao, Z., Koekkoek, S.K.E. and De Zeeuw, C.I. (2018). Impact of parallel fiber to Purkinje cell long-term depression is unmasked in absence of inhibitory input. *Science Advances* **4**, no. 10.
40. Kanis, S.L., De Lima-Karagiannis, A., van der Ent, C., Rizopoulos, D. and van der Woude, C.J. (2018). Anti-TNF levels in cord blood at birth are associated with anti-TNF type. *Journal of Crohn's and Colitis* **12**, 839–847.
41. Schreijenberg, M., Luijsterburg, P.A., Van Trier, Y.D., Rizopoulos, D., Koopmanschap, M.A., Voogt, L., Maher, C.G. and Koes, B.W. (2018). Discontinuation of the PACE Plus trial: problems in patient recruitment in general practice. *BMC Musculoskeletal Disorder* **19**, 146.
42. Brankovic, M., Kardys, I., Hoorn, E.J., Baart, S., Boersma, E. and Rizopoulos, D. (2018). Personalized dynamic risk assessment in nephrology is a next step in prognostic research. *Kidney International* **94**, 214–217.
43. Brankovic, M., Akkerhuis, K.M., van Boven, N., Anroedh, S., Constantinescu, A., Caliskan, K., Manintveld, O., Cornel, J.H., Baart, S.,

- Rizopoulos, D., Hillege, H., Boersma, E., Umans, V. and Kardys, I. (2018). Patient-specific evolution of renal function in chronic heart failure patients dynamically predicts clinical outcome in the Bio-SHiFT study. *Kidney International* **93**, 952–960.
44. Garcia-Hernandez, A. and Rizopoulos, D. (2018). %JM: A SAS macro to fit jointly generalized mixed models for longitudinal data and time-to-event responses. *Journal of Statistical Software* **84**(12), 1–29.
45. van der Vuurst-de Vries, R., van den Dorpel, J.J., Mescheriakova, J.Y., Runia, T.F., Jafari, N., Siepman, T.A., Rizopoulos, D., Steyerberg, E.W. and Hintzen, R.Q. (2018). Fatigue after a first attack of suspected multiple sclerosis. *Multiple Sclerosis Journal* **24**, 974–981.
46. Mirza, S.S., Ikram, M.A., Freak-Poli, R., Hofman, A., Rizopoulos, D., Tiemeier, H. (2018). 12-year trajectories of depressive symptoms in community-dwelling older adults and the subsequent risk of death over 13 years. *Journal of Gerontology, Series A* **73**, 820–827.
47. Nieboer, D., Tomer, A., Rizopoulos, D., Roobol, M.J. and Steyerberg, E.W. (2018). Active surveillance: a review of risk-based, dynamic monitoring. *Translational Andrology and Urology* **7**, 106–115.
48. van Boven, N., Battes, L.C., Akkerhuis, M., Rizopoulos, D., Caliskan, K., Anroedh, S.S., Yassi, W., Manintveld, O.C., Cornel, J.H., Constantinescu, A.A., Boersma, E., Umans, V.A. and Kardys, I. (2018). Toward personalized risk assessment in patients with chronic heart failure: Detailed temporal patterns of NT-proBNP, troponin T, and CRP in the Bio-SHiFT study. *American Heart Journal* **196**, 36–48.
49. Karel, Y., Thoomes-De Graaf, M., Scholten-Peeters, G., Ferreira, P., Rizopoulos, D., Koes, B.W. and Verhagen, A.P. (2018). Validity of the Flemish working alliance inventory in a Dutch physiotherapy setting in patients with shoulder pain. *Physiotherapy Theory Practice* **34**, 384–392.
50. Neelis, E., Rijnen, N., Sluimer, J., Olieman, J., Rizopoulos, D., Wijnen, R., Rings, E., Koning, B. and Hulst, J. (2018). Bone health of children with intestinal failure measured by dual energy X-ray absorptiometry and digital X-ray radiogrammetry. *Clinical Nutrition* **37**, 687–694.
51. van Eijk, R.P.A., Eijkemans, M.J.C., Rizopoulos, D., van den Berg L.H. and Nikolakopoulos, S. (2018). Comparing methods to combine functional loss and mortality in clinical trials for amyotrophic lateral sclerosis. *Clinical Epidemiology* **10**, 333–341.
52. Nieboer, D., Tomer, A., Rizopoulos, D., Roobol, M., Steyerberg, E. (2018). Active surveillance: a review of risk-based, dynamic monitoring. *Translational Andrology and Urology* **7**, 106–115.
53. Rizopoulos, D., Molenberghs, G. and Lesaffre, E. (2017). Dynamic Predictions with Time-Dependent Covariates in Survival Analysis using Joint Modeling and Landmarking. *Biometrical Journal* **59**, 1261–1276.
54. Bianconcini, S., Cagnone, S. and Rizopoulos, D. (2017). Approximate likelihood inference in generalized linear latent variable models based on the dimension-wise quadrature. *Electronic Journal of Statistics* **11**, 4404–4423.

55. Mauff, K., Steyerberg, E.W., Nijpels, G., van der Heijden, A. and Rizopoulos, D. (2017). Extension of the association structure in joint models to include weighted cumulative effects. *Statistics in Medicine* **36**, 3746–3759.
56. Kanters, T.A., van der Ploeg, A.T., Kruijshaar, M.E., Rizopoulos, D., Redekop, W.K., Rutten-van Molken, M.P.M.H. and Hakkaart-van Roijen, L. (2017). Cost-effectiveness of enzyme replacement therapy with alglucosidase alfa in adult patients with Pompe disease. *Orphanet Journal of Rare Diseases* **12**, 179.
57. Gotink, R., Younge, J., Wery, M., Utens, E., Michels, M., Rizopoulos, D., van Rossum, L., Roos-Hesselink, J. and Hunink, M. (2017). Online mindfulness as a promising method to improve exercise capacity in heart disease: 12-month follow-up of a randomized controlled trial. *PLoS One*, 12(5), art. no. e0175923.
58. Kuperus, E., Kruijshaar, M.E., Wens, S.C.A., de Vries, J.M., Favejee, M.M., van der Meijden, J.C., Rizopoulos, D., Brusse, E., van Doorn, P.A., van der Ploeg, A.T. and van der Beek, V. (2017). Long-term benefit of enzyme replacement therapy in pompe disease: A 5-year prospective study. *Neurology* **89**, 2365–2373.
59. Andrinopoulou, E.R., Rizopoulos, D., Takkenberg, J.J.M. and Lesaffre, E. (2017). Combined dynamic predictions using joint models of two longitudinal outcomes and competing risk data. *Statistical Methods in Medical Research* **26**, 1787–1801.
60. Bryan, S., Eiler, P., van Rosmalen, J., Rizopoulos, D., Vermeer, K., Lemij, H. and Lesaffre, E. (2017). Bayesian hierarchical modeling of longitudinal glaucomatous visual fields using a two-stage approach. *Statistics in Medicine* **36**, 1735–1753.
61. Chaker, L., Korevaar, T., Rizopoulos, D., Collet, T., Volzke, H., Hofman, A., Rodondi, N., Cappola, A., Peeters, R. and Franco, O. (2017). Defining optimal health range for thyroid function based on the risk of cardiovascular disease. *The Journal of Clinical Endocrinology & Metabolism* **102**, 2853–2861.
62. van Boven, N., Akkerhuis, K.M., Anroedh, S.S., Rizopoulos, D., Pinto, Y., Battes, L.C., Hillege, H.L., Caliskan, K.C., Germans, T., Manintveld, O.C., Cornel, J.-H., Constantinescu, A.A., Boersma, E., Umans, V.A. and Kardys, I. (2017). Serially measured circulating miR-22-3p is a biomarker for adverse clinical outcome in patients with chronic heart failure: The Bio-SHiFT study. *International Journal of Cardiology* **235**, 124–132.
63. Wolters, F.J., Rizopoulos, D., Ikram, M.A. (2017). Dementia and death: Separate sides of the atrial fibrillation coin? *International Journal of Cardiology* **227**, 189–189.
64. de Vries, J., Kuperus, E., Hoogeveen-Westerveld, M., Kroos, M., Wens, S., Stok, M., van der Beek, N., Kruijshaar, M., Rizopoulos, D., van Doorn, P., van der Ploeg, A. and Pijnappel, W. (2017). Pompe disease in adulthood: Effects of antibody formation on enzyme replacement therapy. *Genetic Medicine* **19**, 90–97.



65. Schreijenberg, M., Luijsterburg, P.A., Van Trier, Y.D., Rizopoulos, D., Koopmanschap, M.A., Voogt, L., Maher, C.G. and Koes, B.W. (2017). Efficacy of paracetamol, diclofenac and advice for acute low back pain in general practice: design of a randomized controlled trial (PACE Plus). *BMC Musculoskelet Disorder* **18**, 56.
66. Cornette J., Laker, S., Jeffery, B., Lombaard, H., Alberts, A., Rizopoulos, D., Roos-Hesselink, J. and Pattinson, R. (2017). Validation of maternal cardiac output assessed by transthoracic echocardiography against pulmonary artery catheters in severely ill pregnant women. A prospective comparative study and systematic review. *Ultrasound in Obstetrics & Gynecology* **49**, 25–31.
67. Nunez, J., Nunez, E., Bayes-Genis, A., Fonarow, G.C., Minana, G., Bodi, V., Pascual-Figal, D., Santas, E., Garcia-Blas, S., Chorro, F.J., Rizopoulos, D. and Sanchis J. (2017). Long-term serial kinetics of N-terminal pro B-type natriuretic peptide and carbohydrate antigen 125 for mortality risk prediction following acute heart failure. *European Heart Journal: Acute Cardiovascular Care* **6**, 685–696.
68. Rizopoulos, D., Taylor, J.M.G., van Rosmalen, J., Steyerberg, E.W. and Takkenberg, J.J.M. (2016). Personalized screening intervals for biomarkers using joint models for longitudinal and survival data. *Biostatistics* **17**, 149–164.
69. Rizopoulos, D. (2016). The R package JMBayes for fitting joint models for longitudinal and time-to-event data using MCMC. *Journal of Statistical Software* **72**(7), 1–45.
70. Andrinopoulou, E.R. and Rizopoulos, D. (2016). Bayesian shrinkage approach for a joint model of longitudinal and survival outcomes assuming different association structures. *Statistics in Medicine* **35**, 4813–4823.
71. Erler, N., Rizopoulos, D., van Rosmalen, J., Jaddoe, V., Franco, O. and Lesaffre, E. (2016). Dealing with missing covariates in epidemiologic studies: A comparison between multiple imputation and a full Bayesian approach. *Statistics in Medicine* **35**, 2955–2974.
72. Njeru Njagi, E.N., Molenberghs, G., Rizopoulos, D., Verbeke, G., Kenward, M., Dendale, P. and Willekens, K. (2016). A flexible joint modelling framework for longitudinal and time-to-event data with overdispersion. *Statistical Methods in Medical Research* **25**, 1661–1676.
73. Nasserinejad, K., van Rosmalen, J., de Kort, W., Rizopoulos, D. and Lesaffre, E. (2016). Prediction of hemoglobin in blood donors using a latent class mixed-effects transition model. *Statistics in Medicine* **35**, 581–594.
74. Overwater, I., Rietman, A., Bindels-de Heus, K., Looman, C., Rizopoulos, D., Sibindi, T., Cherian, P., Jansen, F., Moll, H., Elgersma, Y. and de Wit, M. (2016). Sirolimus for epilepsy in children with tuberous sclerosis complex: A randomized controlled trial. *Neurology* **87**, 1011–1018.
75. Cornelissen, M., Ottelander, B., Rizopoulos, D., van der Hulst, R., Mink van der Molen, A., van der Horst, C., Delye, H., van Veelen, M., Bonsel,

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◇ Book Chapters

1. Rizopoulos, D. (2014). Joint Modeling of Longitudinal and Time-to-Event Data. In: *Handbook of Missing Data* by Fitzmaurice, G., Kenward, M., Molenberghs, G., Tsiatis, A. and Verbeke, G. Boca Raton: Chapman and Hall/CRC.
2. Rizopoulos, D., Molenberghs, G. and Verbeke, G. (2014). Model Diagnostics and Incomplete Data. In: *Handbook of Missing Data* by Fitzmaurice, G., Kenward, M., Molenberghs, G., Tsiatis, A. and Verbeke, G. Boca Raton: Chapman and Hall/CRC.
3. Rizopoulos, D. (2013). Joint Modeling of Longitudinal and Time-to-Event Data: Challenges and Future Directions. In: *Advances in Theoretical and Applied Statistics* by Torelli, N. and Pesarin, F.
4. Verbeke, G., Molenberghs, G. and Rizopoulos, D. (2010). Random Effects Models for Longitudinal Data. In: *Longitudinal Research with Latent Variables* by van Montfort, K., Oud, J. and Satorra, A. Heidelberg: Springer-Verlag.

STATISTICAL SOFTWARE ◇ packages developed for the R programming language – publicly available via CRAN

- **GLMMadaptive** package: Fits generalized linear mixed models for a single grouping factor under maximum likelihood approximating the integrals over the random effects with an adaptive Gaussian quadrature rule. More info available at: <http://cran.r-project.org/package=GLMMadaptive>.
- **JMbayes** package: Fits joint models for continuous longitudinal responses and time-to-event data under the Bayesian approach. More info available at: <http://cran.r-project.org/package=JMbayes>.



- **JM** package: Fits joint models for continuous longitudinal responses and time-to-event data. More info available at: <http://cran.r-project.org/package=JM>.
- **cvGEE** package: Calculates predictions from generalized estimating equations and internally cross-validates them using the logarithmic, quadratic and spherical proper scoring rules. More info available at: <http://cran.r-project.org/package=cvGEE>.
- **ltm** package: Latent trait models for Item Response Theory analyses. More info available at: <http://cran.r-project.org/package=ltm>.
- **bootStepAIC** package: Bootstraps a stepwise algorithm that uses the AIC for model selection. More info available at: <http://cran.r-project.org/package=bootStepAIC>.
- **grouped** package: Regression models for grouped or coarse data. It includes also functions for power and sample size calculations. More info available at: <http://cran.r-project.org/package=grouped>.

SEMINARS & ◇ Invited

CONFERENCE  
PRESENTATIONS

1. 2019 May: Lifetime Data Science Conference, Pittsburgh, USA, ‘Using Joint Models for Personalized Optimal Scheduling of Invasive Procedures’.
2. 2019 January: 2nd Workshop on Statistics in Cancer, Bordeaux, France, ‘Using Joint Models for Personalized Optimal Scheduling of Invasive Procedures’.
3. 2018 December: East Mediterranean Region, International Biometric Society, biannual Conference, Jerusalem, Israel, ‘Individualized Dynamic Predictions of Survival with Intermediate Events’.
4. 2018 March: ENAR Spring Meeting, Atlanta, USA, ‘Personalized schedules for prostate biopsies during active surveillance’.
5. 2017 November: CISNET Prostate Cancer NIH Workshop, Rockville, USA, ‘Personalized schedules for prostate biopsies during active surveillance’.
6. 2017 August: CEN-ISBS, Vienna, Austria, ‘Modern use of Shared Parameter Models for Dropout’.
7. 2017 July: Joint Statistical Meetings, Baltimore, USA, ‘Improving Dynamic Predictions from Joint Models using Time-Varying Effects’.
8. 2016 August: Joint Statistical Meetings, Chicago, USA, ‘Personalized Screening Intervals for Biomarkers using Joint Models for Longitudinal and Survival Data’.
9. 2015 August: 36th Conference of the International Society for Clinical Biostatistics, Utrecht, the Netherlands, ‘Personalized Screening Intervals for Biomarkers using Joint Models for Longitudinal and Survival Data’.

10. 2015 August: Joint Statistical Meetings, Seattle, USA, ‘Fitting Joint Models in R using Packages JM and JMBayes’.
11. 2015 July: Keynote speaker, Workshop on Flexible Models for Longitudinal and Survival Data with Applications in Biostatistics, Warwick, UK.
12. 2015 June: GdR Statistique & Sante, Paris, France, ‘Personalized Screening Intervals for Biomarkers using Joint Models for Longitudinal and Survival Data’.
13. 2015 May: East Mediterranean Region, International Biometric Society, biannual Conference, Cappadocia, Turkey, ‘Optimal Screening Intervals for Biomarkers using Joint Models for Longitudinal and Survival Data’.
14. 2015 April: 5th Channel Network Conference, International Biometric Society, Nijmegen, the Netherlands, ‘Personalized Screening Intervals for Biomarkers using Joint Models for Longitudinal and Survival Data’.
15. 2014 July: 2nd Workshop on The Statistical Analysis of Multi-Outcome Data, Cambridge University, UK, ‘Weighted Cumulative Effects and Optimal Timing of Visits in Joint Models for Longitudinal and Survival Data’.
16. 2014 April: Keynote speaker, 3rd Conference on Survival Analysis for Junior Researchers, Warwick, UK, ‘Joint Models for Longitudinal and Event Time Data’.
17. 2013 December: Keynote speaker, Workshop on the celebration of 25 years of the Leuven Statistics Research Centre, Leuven, Belgium, ‘Optimizing Personalized Predictions using Joint Models’.
18. 2013 October: Workshop on Dynamic Predictions for Repeated Markers and Repeated Events, Bordeaux, France, ‘Joint modeling crash course’.
19. 2013 August: Joint Statistical Meetings, roundtable, ‘Recent advances in joint models for longitudinal and time-to-event data’.
20. 2013 June: European Organization for Research and Treatment of Cancer, Courses on Clinical Trial Statistics for Non Statisticians, ‘Prognostic factor models’.
21. 2013 April: 7th Meeting of the East Mediterranean Region of the IBS, ‘Combining joint models with different association structures using Bayesian model averaging’.
22. 2012 November: Workshop on Statistical Challenges in Risk Prediction, Cambridge University, ‘Enhancing risk prediction models using longitudinal measures of risk factors’.
23. 2012 July: Workshop on The Statistical Analysis of Multi-Outcome Data, Université Pierre et Marie Curie – Paris VI, ‘Dynamic predictions using joint models for longitudinal and time-to-event data: The effect of parameterization’.
24. 2012 June: Event of the PSDM group of the Biometrics Section (BMS) of the Netherlands Society for Statistics and Operations Research, ‘An introduction to the use of R for clinical research’.

25. 2012 June: European Organization for Research and Treatment of Cancer, Courses on Clinical Trial Statistics for Non Statisticians, ‘Prognostic factor models’.
26. 2012 April: Department Methodology and Statistics, University of Maastricht ‘Joint models for longitudinal and survival data, and dynamic predictions’.
27. 2012 April: ENAR Spring Meeting, Washington DC, USA, ‘Different parameterizations for joint models for longitudinal and survival data, and how they affect individualized predictions’.
28. 2011 October: Biometrics Section, Medical University of Vienna, ‘Joint models for longitudinal and event time data, and dynamic predictions’.
29. 2011 October: European Organization for Research and Treatment of Cancer, Biostatistics Seminar, ‘Joint models and dynamic predictions’.
30. 2011 May: Department of Statistics, University of Bologna, ‘Choosing optimal weights when fitting latent variable models with the pairwise likelihood’.
31. 2011 April: 3rd Channel Network Meeting, Bordeaux, ‘Prospective accuracy measures in joint models for longitudinal and time-to-event data’.
32. 2011 February: Department of Medical Statistics and Bioinformatics, Leiden University Medical Center, ‘ROC accuracy measures for joint models for longitudinal and survival data’.
33. 2011 February: Department of Pneumology and Respiratory Reanimation, University of Paris-South, ‘The benefits of using joint models for prognosis in pulmonary arterial hypertension’.
34. 2010 December: XXVth International Biometric Conference, ‘Model assessment tools for joint models of longitudinal and time-to-event data’.
35. 2010 September: Visited Department of Biostatistics, Université Victor Segalen, Bordeaux & gave a Seminar ‘Dynamic predictions and prospective accuracy in joint models for longitudinal and time-to-event data’.
36. 2010 August: ISCB 31, Montpellier, France, ‘Fitting high-dimensional joint models for longitudinal and time-to-event data using Laplace approximations’.
37. 2010 June: Italian Statistical Society Meeting, Padova, ‘Joint modelling of longitudinal and time-to-event data: challenges and future directions’.
38. 2010 June: Department of Statistics, University of Rome, ‘Simple residuals plots for joint models for longitudinal and event time data’.
39. 2010 February: Psychometric Computing Workshop, Munich, ‘Marginal maximum likelihood estimation of item response theory models using package `ltm`’.
40. 2010 January: Visited Department of Statistics and Mathematics, WU Wirtschaftsuniversität Wien & gave two Seminars: (i) Fitting multidimensional latent variable models using an efficient Laplace approximation; (ii) The `ltm` package.

41. 2009 October: Belgian Statistical Society Annual Meeting, ‘Challenges in joint modelling of longitudinal and time-to-event data’.
42. 2008 November: Institut de Statistique, Université catholique de Louvain, ‘Laplace approximations for joint models’.
43. 2008 September: CenStat Special Event, Hasselt University, ‘Joint modelling of longitudinal and time-to-event data using an efficient Laplace approximation’.
44. 2008 April: Center for Statistics, Hasselt University, ‘A new computational approach for the joint modelling of longitudinal and survival data with high-dimensional random effects’.
45. 2007 December: Department of Biostatistics, Erasmus Medical Center, ‘Joint modelling of longitudinal and time-to-event data’.
46. 2007 March: Center for Statistics, Hasselt University, ‘Joint modelling of survival and longitudinal outcomes using copulas’.
47. 2006 December: Department of Statistics, Athens University of Economics and Business, ‘Joint modelling of survival and longitudinal outcomes using copulas’.

◇ Contributed

1. 2018 July: IBC, ‘Joint Models with Multiple Longitudinal Outcomes and a Time-to-Event’
2. 2016 July: IBC, ‘Personalized screening intervals for biomarkers using joint models for longitudinal and survival data’
3. 2012 July: IWSM, ‘A pseudo-adaptive Gaussian quadrature rule for fitting joint models for longitudinal and time-to-event data’.
4. 2011 March: ENAR Spring Meeting, ‘Prospective accuracy measures in joint models for longitudinal and time-to-event data’.
5. 2010 August: Joint Statistical Meetings, ‘Fitting high-dimensional joint models for longitudinal and time-to-event data using Laplace approximations’.
6. 2010 March: ENAR Spring Meeting, ‘Bayesian semiparametric multivariate joint models’.
7. 2009 August: ISCB 30, ‘Residuals for joint models for longitudinal and time-to-event data’.
8. 2009 March: ENAR Spring Meeting, ‘Diagnostic tools for joint models for longitudinal and time-to-event data’.
9. 2008 August: useR! meeting, ‘Item response theory using the `ltm` package’.
10. 2008 March: ENAR Spring Meeting, ‘Fully exponential Laplace approximations for the joint modelling of survival and longitudinal data’.
11. 2007 October: Belgian Statistical Society Meeting, ‘A two-part joint model for the analysis of survival and longitudinal binary data with excess zeros’.

12. 2007 August: ISCB 28, ‘A two-part joint model for the analysis of survival times and longitudinal binary data with excess zeros’.
13. 2007 July: IWSM, ‘Joint modelling of time-to-event and longitudinal binary data with excess zeros’.
14. 2006 October: Belgian Statistical Society Meeting, ‘Misspecification in shared parameter models’.
15. 2006 March: ENAR Spring Meeting, ‘Sensitivity analysis for shared parameter models using copulas’.
16. 2005 August: ISCB 26, ‘Sensitivity analysis in pattern mixture models using the extrapolation method’.

ACADEMIC  
ACTIVITIES

- ◇ co-Editor
  - Biostatistics (January 2016 – present)
- ◇ Associate Editor
  - Biostatistics (October 2011 – December 2015)
  - Biometrics (July 2009 – December 2015)
- ◇ Guest Editor
  - Biometrical Journal, special issue in Joint Modeling Techniques (2017)
  - Statistical Methods in Medical Research, special issue in Joint Modeling Techniques (2013)
- ◇ Board memberships
  - Executive committee member of the International Society for Clinical Biostatistics (Jan. 2019 – present)
  - Conference awards committee member of the International Society for Clinical Biostatistics (Jan. 2011 – present)
  - Dutch section of the International Biometric Society (Jul. 2013 – Jul 2019)
  - Representative Council of the International Biometric Society (Nov. 2014 – present)
  - Scientific committee of the International Biometric Conference 2016, Vancouver, Canada
  - jury member in 35 PhD defences
- ◇ International Short Courses on Joint Modeling
  - 2019 October: SACEMA Centre of Excellence in Epidemiological Modelling and Analysis, Stellenbosch, S. Africa
  - 2019 August: Joint Statistical Meetings, Denver, USA

- 2018 March: East North American Region of the IBS annual conference, Atlanta, USA
- 2018 February: Faculty of Medicine, University of Santiago de Compostela, Spain
- 2018 January: Western Regional Health Authorities, Bergen, Norway
- 2017 August: Joint Conference on Biometrics & Biopharmaceutical Statistics, Vienna, Austria
- 2017 August: Joint Statistical Meetings, Baltimore, USA
- 2017 May: EMR-IBS, Thessaloniki, Greece
- 2016 August: International Society for Clinical Biostatistics annual conference, Birmingham, UK
- 2016 August: Joint Statistical Meetings, Chicago, USA
- 2016 July: XXVIIIth International Biometrics Conference, Victoria, Canada
- 2016 April: Workshop on Joint Modeling & Beyond, Diepenbeek, Belgium
- 2015 October: SACEMA Centre of Excellence in Epidemiological Modelling and Analysis, Stellenbosch, S. Africa
- 2015 February: Flanders Training Network for Methodology and Statistics, University of Gent, Belgium
- 2014 September: Dept. of Mathematical Sciences, University of Essex, UK
- 2014 May: Dept. of Statistics, Rijksinstituut voor Volksgezondheid en Milieu, the Netherlands
- 2014 May: Institute of Statistics, Biostatistics and Actuarial Sciences, Universite Catholique de Louvain, Belgium
- 2013 October: SACEMA Centre of Excellence in Epidemiological Modelling and Analysis, Stellenbosch, S. Africa
- 2013 August: Joint Statistical Meetings, Montreal, Canada
- 2013 June: Erasmus Medical Center, Rotterdam, the Netherlands
- 2013 April: Macquarie University and George Institute, Sydney, Australia
- 2012 August: XXVIth International Biometrics Conference, Kobe, Japan
- 2012 July: International Workshop on Statistical Modelling, Prague, Czech Republic
- 2010 August: Joint Statistical Meetings, Vancouver, Canada

◇ PhD Graduates

- Sara Baart (12/2015 – 10/2019; topic: joint models for longitudinal and survival data for case-cohort designs)
- Nicole Erler (09/2014 – 07/2019; topic: multiple imputation of missing covariates with complex outcomes)

- Eleni-Rosalina Andrinopoulou (09/2010 – 11/2014; topic: survival analysis & joint modeling)
- Magdalena Murawska (11/2009 – 04/2014; topic: multistate models & joint modeling)
- Sara Viviani (visiting student 02/2010 – 07/2010; topic: shared parameter models)

◇ Supervision of PhD Students

- Meng Yuan (09/2018 – present; multivariate mixed effects models)
- Hongchao Qi (09/2018 – present; applications of power priors in clinical trials with longitudinal outcomes)
- Floor van Oudenhoven (01/2017 - present; methodological developments in joint models with applications in Alzheimer)
- Anirudh Tomer (08/2016 – present; personalized screening intervals using joint models)
- Grigorios Papageorgiou (11/2015 – present; joint models with time-varying treatment strategies)
- Katya Mauff (03/2015 – present; new advances in joint models for longitudinal and survival data)

◇ Supervision of MSc Students

- Judith Rijnhart (09/2014 – 06/2015)
- Illary Sbizzera (10/2011 – 03/2012)
- Nathan Touati (04/2010 – 06/2010)

◇ Courses

- 2016 – present: Statistical Analysis of Repeated Measurements Data, NIHES MSc Programs, 1.4 ECTS (course coordinator)
- 2015 – present: Joint Models for Longitudinal and Survival Data, Erasmus Summer Program, 1.4 ECTS (course coordinator)
- 2012 – present: Biostatistics Methods II: Classical Regression Models, NIHES MSc Programs, 4.3 ECTS (course coordinator)
- 2013 – present: Introductory statistics courses for medical students (1st, 2nd and 4th year, Desiderius School)
- 2010 – 2014: Introductory Course for the Quantitative Researcher; NIHES MSc Program, 1.4 ECTS
- 2010 – 2013: Survival Analysis for Clinicians; Erasmus Winter Program 1.9 ECTS (course coordinator)
- 2010 – 2011: A Basic Course in R; MolMed Graduate Courses for PhDs 0.5 ECTS (course coordinator)

- 2009 – 2011: Computational Statistics; Leiden Masters Track Statistical Science Program, 3.0 ECTS (jointly with Prof. dr. P. Eilers)

◇ Professional Affiliations

- American Statistical Association
- International Biometric Society (Dutch region)
- International Society for Clinical Biostatistics
- Netherlands Society for Statistics and Operations Research

◇ Referee for

- Annals of Applied Statistics, Annals of Statistics, Australian & New Zealand Journal of Statistics, Biometrical Journal, Biometrics, Biostatistics, Computational Statistics & Data Analysis, Journal of the American Statistical Association, Journal of Probability and Statistics, Journal of Statistical Software, Psychometrika, Statistical Modelling, Statistics in Biopharmaceutical Research, Statistics in Biosciences, Statistics in Medicine

◇ Other

- Organizer of the Mixed Effects Models Working Group at Erasmus MC
- Organizer of the Spring Symposium in Biostatistics, Erasmus MC for 2011; topic: Joint Modeling Techniques with Applications in Longitudinal Studies

SKILLS

◇ Computer Skills

- Computer languages: fluent in R,  $\text{\LaTeX}$ ; some C++ and HTML
- Statistical packages: SPSS
- MS-Office, MS-Windows, MS-DOS

◇ Languages

- Greek: mother tongue
- English: fluent (spoken & written)
- Dutch: advanced level (spoken & written)
- French: basic skills

WORK  
EXPERIENCE

◇ **CPO consultant**, Dept. Biostatistics, Erasmus University Medical Center (September 2008 – present)

- statistical advice and statistical consulting to members of Erasmus MC



- ◇ **Research assistant**, Leuven Biostatistics and statistical Bioinformatics Centre, Katholieke Universiteit Leuven  
(October 2003 – August 2008)
  - statistical advice to members of the Faculty of Medicine
  - statistical analysis of research projects for members of the Faculty of Medicine
  - statistical analysis for clinical trials