
CURRICULUM VITAE
DR. BIRGIR HRAFNKELSSON
UNIVERSITY OF ICELAND

EDUCATION

- PhD in Statistics, August 1999
Department of Statistics, Texas A&M University
PhD thesis title: Principal Component Time Series and Autoregressive Estimates
PhD advisor: Prof. H. Joseph Newton
- MSc in Mechanical Engineering, June 1995
Department of Mechanical and Industrial Engineering, University of Iceland
MSc thesis title: Estimating Maximum Load in District Heating Systems
Icelandic MSc thesis title: Mat á hámarksálagi í hitaveitukerfum
MSc thesis advisor: Prof. Guðmundur R. Jónsson
- CSc in Mechanical Engineering, June 1993
Department of Mechanical and Industrial Engineering, University of Iceland

AWARDS AND HONORS

- William S. Connor Memorial Award, Department of Statistics, Texas A&M University, May 1999

EXPERIENCE

- Professor of Statistics, Department of Mathematics, Faculty of Physical Sciences at University of Iceland, from July 2016.
- Associate Professor of Statistics, Department of Mathematics, Faculty of Physical Sciences at University of Iceland, from January 2012 - June 2016.
- Research Scholar at the Science Institute, University of Iceland, from January 2008 - December 2011.

- Assistant Professor at the Department of Mechanical and Industrial Engineering, Faculty of Engineering, University of Iceland, from September 2003 - December 2007.
- Part-time teacher at the Department of Mechanical and Industrial Engineering, Faculty of Engineering, University of Iceland, from fall 2001 - August 2003.
- Researcher at deCODE genetics, Reykjavík, Iceland, November 2001 - August 2003.
- Postdoctoral Researcher in the Modeling Department at the Marine Research Institute, Reykjavík, Iceland, 2000 - 2001.
- Part-time teacher at the School of Business, Reykjavík University, spring 2001.
- Part-time teacher at the Department of Mathematics, Faculty of Science, University of Iceland, From September 2000 - August 2003.
- Postdoctoral Researcher in the Program in Spatial Statistics and Environmental Sciences, Department of Statistics, The Ohio State University, 1999 - 2000.
- Teaching Assistant, Department of Statistics, Texas A&M University, 1998-1999.
- Research Assistant, Statistical Analysis of Tides Data and Harvest Data, at the Department of Statistics, Texas A&M University, 1996-1998.
- Research Assistant, Statistical Analysis of NMR Data, at the Department of Chemical Engineering, Texas A&M University, 1995-1996.

CITATIONS

Citations * h-index * i10-index

- <https://scholar.google.com/citations?user=wGD6o0AAAAAJ&hl=en>

RESEARCH

Publications - refereed journals

- Hrafnkelsson, B., Siegert, S., Huser, R., Bakka, H. and Jóhannesson, Á.V. (2021) Max-and-Smooth: A two-step approach for approximate Bayesian inference in latent Gaussian models. *Bayesian Analysis*, **16**(2), 611-638.
- Gopalan, G., Hrafnkelsson, B., Adalgeirsdottir, G. and Palsson, F. (2021) Bayesian Inference of Ice Softness and Basal Sliding Parameters at Langjokull. *Frontiers in Earth Science*, **9**, No. 610069.
- Johannesson, A.V., Siegert, S., Huser, R., Bakka, H. and Hrafnkelsson, B. (2021) Approximate Bayesian inference for analysis of spatio-temporal flood frequency data. To appear in *Annals of Applied Statistics*.

- Sonnemann, T., Halldorsson, B., Hrafnkelsson, B. and Jonsson, S. (2021) Bayesian inference of a physical seismological model for earthquake strong-motion in south Iceland. *Soil Dynamics and Earthquake Engineering*, **138**, No. 106219.
- Eythorsson, E., Asgeirsdottir, T. L., Erlendsdottir, H., Hrafnkelsson, B., Kristinsson, K.G. and Haraldsson, A. (2021) The impact and cost-effectiveness of introducing the 10-valent pneumococcal conjugate vaccine into the paediatric immunisation programme in Iceland-A population-based time series analysis *PLOS ONE*, **16**(4), No. e0249497.
- Geirsson, O.P., Hrafnkelsson, B., Simpson, D. and Sigurdarson, H. (2020) LGM split sampler: An efficient MCMC sampling scheme for latent Gaussian models. *Statistical Science*, **35**(2), 218-233.
- Kowsari, M., Sonnemann, T., Halldorsson, B., Hrafnkelsson, B. Snaebjornsson, J.P. and Jónsson, S. (2020) Bayesian inference of empirical ground motion models to pseudo-spectral accelerations of south Iceland seismic zone earthquakes based on informative priors. *Soil Dynamics and Earthquake Engineering* **132**, No. 106075.
- Sigurdsson, S. Eythorsson, E., Erlendsdottir, H., Hrafnkelsson, B., Kristinsson, K.G. and Haraldsson, A. (2020) Impact of the 10-valent pneumococcal conjugate vaccine on hospital admissions in children under three years of age in Iceland. *Vaccine*, **38**(12), 2707-2714.
- Gopalan, G., Hrafnkelsson, B., Wikle, C. K., Rue, H., Adalgeirsdottir, G., Jarosch, A. H. and Palsson, F. (2019) A hierarchical spatio-temporal statistical model motivated by glaciology. *Journal of Agricultural, Biological and Environmental Statistics*, **24**(4), 669-692.
Note: Giri Gopalan received the Laplace Award from the American Statistical Association, Section on Bayesian Statistical Science (ASA SBSS) for this paper.
- Kowsari, M., Halldorsson, B., Hrafnkelsson, B., Snaebjornsson, J. and Jónsson, S. (2019) Calibration of ground motion models to Icelandic peak ground acceleration data using Bayesian Markov chain Monte Carlo simulation. *Bulletin of Earthquake Engineering*, **17**(6), 2841-2870.
- Rahpeyma, S., Halldorsson, B., Hrafnkelsson, B., Green, R. A. and Jónsson, S. (2019). Site effect estimation on two Icelandic strong-motion arrays using a Bayesian hierarchical model of spatial distribution of earthquake peak ground acceleration. *Soil Dynamics and Earthquake Engineering*, **120**, 369-385.
- Kowsari, M., Halldorsson, B., Hrafnkelsson, B. and Jónsson, S. (2019) Selection of earthquake ground motion models using the deviance information criterion. *Soil Dynamics and Earthquake Engineering*, **117**, 288-299.
- Palsson, M., Einarsson, P. and Hrafnkelsson, B. (2019) Variation in b-value of caldera earthquakes during recent activity of the Bardarbunga Volcano in Iceland. *Jökull*, **69**, 71-82.

- Scott, S.W., Covell, C., Júlíusson, E., Valfells, Á., Newson, J., Hrafnkelsson, B., PÁalsson, H. and Guðrúnjónsdóttir, M. (2019) A probabilistic geologic model of the Krafla geothermal system constrained by gravimetric data *Geothermal Energy* **7**(1), 1-30.
- Quirk, S. J., Haraldsson, G., Hjalmarsdóttir, M. A., van Tonder, A. J., Hrafnkelsson, B., Bentley, S. D., Haraldsson, A., Erlendsdóttir, H., Brueggemann, A. B. and Kristinsson, K. G. (2019) Vaccination of Icelandic children with the 10-valent pneumococcal vaccine leads to a significant herd effect among adults in Iceland. *Journal of Clinical Microbiology*, **57**(4), , No. UNSP e01766-18.
- Frater, P.N., Hrafnkelsson, B., Elvarsson, B.T. and Stefansson, G. (2019) Drivers of growth for Atlantic cod (*Gadus morhua* L.) in Icelandic waters - a Bayesian approach to determine spatiotemporal variation and its causes. *Journal of Fish Biology* **95**(2), 401-410.
- Sveinsdóttir, H., Björnsdóttir, J.B., Erlendsdóttir, H., Hjálmsdóttir, M.Á., Hrafnkelsson, B., Haraldsson, Á., Kristinsson, K.G. and Haraldsson, G. (2019) The effect of the 10-Valent pneumococcal nontypeable *Haemophilus influenzae* Protein D conjugate vaccine on *H. influenzae* in healthy carriers and middle ear infections in Iceland. *Journal of Clinical Microbiology* **57**(7), No. UNSP e00116-19.
- Eythorsson, E., Sigurdsson, S., Erlendsdóttir, H., Hrafnkelsson, B., Kristinsson, K.G. and Haraldsson, A. (2019) Increase in tympanostomy tube placements despite pneumococcal vaccination, a population-based study. *Acta Paediatrica* **108**(8), 1527-1534.
- Gopalan, G., Hrafnkelsson, B., Adalgeirsdóttir, G., Jarosch, A. H. and Palsson, F. (2018) A Bayesian hierarchical model for glacial dynamics based on the shallow ice approximation and its evaluation using analytical solutions. *Cryosphere*, **12**(7), 2229-2248.
- Rahpeyma, S., Halldorsson, B., Hrafnkelsson, B. and Jónsson, S. (2018) Bayesian hierarchical model for variations in earthquake peak ground acceleration within small-aperture arrays. *Environmetrics*, **29**(3), No. e2497.
Note: This paper was selected to appear in the virtual issue Bayesian Environmetrics.
- Eythorsson, D., Gardarson, S.M., Gunnarsson, A. and Hrafnkelsson, B. (2018) Statistical summer mass-balance forecast model with application to Bruarjokull glacier, southeast Iceland. *Journal of Glaciology*, **64**(244), 311-320.
- Eythorsson, E., Hrafnkelsson, B., Erlendsdóttir, H., Gudmundsson, S. A., Kristinsson, K. G. and Haraldsson, A. (2018) Decreased acute otitis media with treatment failure after introduction of the ten-valent pneumococcal *Haemophilus influenzae* protein D conjugate vaccine. *Pediatric Infectious Disease Journal*, **37**(4), 361-366.

- Eythorsson, E., Sigurdsson, S., Hrafnkelsson, B., Erlendsdottir, H., Haraldsson, A. and Kristinsson, K. G. (2018) Impact of the 10-valent pneumococcal conjugate vaccine on antimicrobial prescriptions in young children: a whole population study *BMC Infectious Disease*, **18**, No. 505.
- Sigurdsson, S., Eythorsson, E., Hrafnkelsson, B., Erlendsdottir, H., Kristinsson, K. G. and Haraldsson, A. (2018) Reduction in all-cause acute otitis media in children < 3 years of age in primary care following vaccination with 10-valent pneumococcal Haemophilus influenzae protein-D conjugate vaccine: A whole-population study. *Clinical Infectious Diseases*, **67**(8), 1213-1219.
- Quirk, S. J., Haraldsson, G., Erlendsdottir, H., Hjalmarsdottir, M. A., van Tonder, A. J., Hrafnkelsson, B., Sigurdsson, S., Bentley, S. D., Haraldsson, A., Bruggemann, A. B. and Kristinsson, K. G. (2018) Effect of vaccination on pneumococci isolated from the nasopharynx of healthy children and the middle ear of children with otitis media in Iceland. *Journal of Clinical Microbiology*, **56**(12), No. UNSP e01046-18.
- Sigurdsson, S., Erlendsdottir, H., Quirk, S. J., Kristjansson, J., Hauksson, K., Andresdottir, B. D. I., Jonsson, A. J., Halldorsson, K. H., Saemundsson, A., Olason, O. H., Hrafnkelsson, B., Kristinsson, K. G. and Haraldsson, A. (2017) Pneumococcal vaccination: Direct and herd effect on carriage of vaccine types and antibiotic resistance in Icelandic children. *Vaccine*, **35**(39), 5242-5248.
- Sigurdarson, A.N. and Hrafnkelsson, B. (2016) Bayesian prediction of monthly precipitation on a fine grid using covariates based on a regional meteorological model output. *Environmetrics*, **27**(1), 27-41.
- Olafsdottir, T., Hrafnkelsson, B., Thorgeirsson, G. and Asgeirsdottir, T.L. (2016) The tax-free year in Iceland: A natural experiment to explore the impact of a short-term increase in labor supply on the risk of heart attacks. *Journal of Health Economics*, **49**, 14-27.
- Hrafnkelsson, B., Oddsson, G.V. and Unnthorsson, R. (2016) A Method for Estimating annual energy production using Monte Carlo wind speed simulation. *Energies*, **9**(4), No. 286.
- Geirsson, O. P., Hrafnkelsson, B. and Simpson, D. (2015) Computationally efficient spatial modeling of annual maximum 24-h precipitation on a fine grid. *Environmetrics*, **26**(5), 339-353.
- Ragnarsson, B.F., Oddsson, G.V., Unnthorsson, R. and Hrafnkelsson, B. (2015) Levelized cost of energy analysis of a wind power generation system at Burfell in Iceland. *Energies*, **8**(9), 9464-9485.
- Olafsdottir, T., Hrafnkelsson, B. and Asgeirsdottir, T.L. (2015) The Icelandic economic collapse, smoking, and the role of labor-market changes. *European Journal of Health Economics*, **16**(4), 391-405.

- Jonsdottir, H., Amundadottir, O.R., Gudmundsson, G., Halldorsdottir, B.S., Hrafnkelsson, B., Ingadottir, T.S., Jonsdottir, R., Jonsson, J.S., Sigurjonsdottir, E. D. and Stefansdottir, I.K. (2015) Effectiveness of a partnership based self-management program for patients with mild and moderate chronic obstructive pulmonary disease: A pragmatic randomized controlled trial. *Journal of Advanced Nursing*, **71**(11), 2634-2649.
- Gudnason, T., Hrafnkelsson, B., Laxdal, B. and Kristinsson, K.G. (2014) Risk factors for nasopharyngeal carriage of *Streptococcus pneumoniae* and effects of a hygiene intervention: repeated cross-sectional cohort study at day care centres. *Scandinavian Journal of Infectious Disease*, **46**(7), 493-501.
- Geirsson, O.P., Gunnarsdottir, O.S., Baldursson, J., Hrafnkelsson, B. and Rafnsson, V. (2013) Risk of repeat visits, hospitalisation and death after uncompleted and completed visits to the emergency department: a prospective observation study. *Emergency Medicine Journal*, **30**(8), 662-668.
- Gudnason, T., Hrafnkelsson, B., Laxdal, B. and Kristinsson, K.G. (2013) Does hygiene intervention at day care centres reduce infectious illnesses in children? An intervention cohort study. *Scandinavian Journal of Infectious Disease*, **45**(5), 397-403.
- Hrafnkelsson, B., Ingimarsson, K.M., Gardarsson, S.M. and Snorrason, A. (2012) Modeling discharge rating curves with Bayesian B-splines. *Stochastic Environmental Research and Risk Assessment*, **26**(1), 1-20.
- Hrafnkelsson, B., Morris, J. and Baladandayuthapani, V. (2012) Spatial modeling of annual minimum and maximum temperatures in Iceland. *Meteorology and Atmospheric Physics*, **116**(1-2), 43-61.
- Carlsen, H.K., Zoega, H., Valdimarsdottir, U., Gislason, T. and Hrafnkelsson, B. (2012) Hydrogen sulfide and urban air pollution levels associated with increased dispensing of anti-asthma drugs in Iceland's capital. *Environmental Research*, **113**, 33-39.
- Gudnason, T., Hrafnkelsson, B., Laxdal, B. and Kristinsson K.G. (2012) Can risk factors of infectious illnesses in children at day care centres be identified? *Scandinavian Journal of Infectious Diseases*, **44**(2), 149-156.
- Georgsdottir, I., Erlingsdottir, G., Hrafnkelsson, B. Haraldsson, A. and Dagbjartsson, A. (2012) Disabilities and health of extremely low birth weight-teenagers - a population based study. *Acta Paediatrica*, **101**(5), 518-523.
- Finnbogadottir, A.F., Ardal, B., Eiriksson, H., Hrafnkelsson, B., Valdimarsson, H., Ludviksson, B. R. and Haraldsson, A. (2012) A long term follow-up of allergic diseases in Iceland. *Pediatric Allergy and Immunology*, **23**(2), 181-185.

- Sveinbjarnardottir, E.K., Svavarsdottir, E.K. and Hrafnkelsson, B. (2012) Psychometric development of the Iceland-family perceived support questionnaire (ICE-FPSQ). *Journal of Family Nursing*, **18**(3), 328-352.
- Sveinbjarnardottir, E.K., Svavarsdottir, E.K. and Hrafnkelsson, B. (2012) Psychometric development of the Iceland-Expressive Family Functioning Questionnaire (ICE-EFFQ). *Journal of Family Nursing*, **18**(3), 353-377.
- Hrafnkelsson, B., Helgason, A., Jonsson, G.F., Gudbjartsson, D.F., Jonsson, T., Thorvaldsson, S., Stefansson, H., Steinthorsdottir, V., Vidarsdottir, N., Middleton, D., Petersen, H.S., Martinez, C., Snaedal, J., Jonsson, P.V., Bjornsson, S., Gulcher, J.R. and Stefansson, K. (2010) Evaluating differences in linkage disequilibrium between populations. *Annals of Human Genetics*, **74**(3), 233-247.
- Margeirsson, S., Hrafnkelsson, B., Jonsson, G.R., Jensson, P. and Arason, S. (2010) Utilization of data recording in the cod industry for decision making based on statistical analysis of value chain data, *Journal of Food Engineering*, **99**(2), 151-158
- Zoega, H., Baldursson, G., Hrafnkelsson, B., Almarsdottir, A.B., Valdimarsdottir, U. and Halldorsson, M. (2009) Psychotropic drug use among Icelandic children: a nationwide population-based study. *Journal of Child and Adolescent Psychopharmacology*, **19**(6), 757-764.
- Zoega, H., Baldursson, G., Hrafnkelsson, B., Almarsdottir, A.B., Valdimarsdottir, U. and Halldorsson, M. (2009) Extensive psychotropic drug use among Icelandic children: A nationwide population based study. *Pharmacoepidemiology and Drug Safety*, **18**, S203-S203.
- Babak, O., Hrafnkelsson, B. and Palsson, O.P. (2007) Estimation of the length distribution of marine populations in the Gaussian-multinomial setting using the method of moments. *Journal of Applied Statistics*, **34**(8), 985-995.
- Helgason, A., Palsson, S., Lalueza-Fox, C., Ghosh, S., Sigurdardottir, S., Baker, A., Hrafnkelsson, B., Arnadottir, L., Thorsteinsdottir, U. and Stefansson, K. (2007) A statistical approach to identify ancient template DNA. *Journal of Molecular Evolution*, **65**(1), 92-102
- Helgason, A., Yngvadottir, B., Hrafnkelsson, B., Gulcher, J. R. and Stefansson, K. (2005) An Icelandic example of the impact of population structure on association studies. *Nature Genetics*, **37**(1), 90-95
- Hrafnkelsson, B. and Stefansson, G. (2004) A model for categorical length data from groundfish surveys. *Canadian Journal of Fisheries and Aquatic Sciences*, **61**(7), 1135-1142.

- Helgason, A., Hrafnkelsson, B., Gulcher, J. R., Ward, R. and Stefansson, K. (2003) A population-wide coalescent analysis of Icelandic matrilineal and patrilineal genealogies: Determining the evolutionary rates of mtDNA and Y-chromosome lineages. *The American Journal of Human Genetics*, **72**(6), 1370-1388.
- Hrafnkelsson, B. and Cressie, N. (2003) Hierarchical modeling of count data with application to nuclear fall-out. *Environmental and Ecological Statistics*, **10**(2), 179-200.
- Hrafnkelsson, B. and Newton, H.J. (2000) Asymptotic simultaneous confidence bands for vector autoregressive spectra. *Biometrika*, **87**(1), 173-182.
- Jonsson, G.R., Jonsson, V.K., Pálsson, O.P. and Hrafnkelsson, B. (1998) Estimation of extreme mass flowrate in district heating systems. Proceedings of the Institution of Mechanical Engineers, Part A, *Journal of Power and Energy*, **212**(A2), 125-133.

Publications - submitted to arXiv

- Hrafnkelsson, B., Sigurdarson, H., Rögnvaldsson, S., Jansson, A.Ö., Vias, R.D. and Gardarsson, S.M. (2021) Generalization of the power-law rating curve using hydrodynamic theory and Bayesian hierarchical modeling. *arXiv preprint arXiv:2010.04769v2*

Publications - refereed Icelandic journals

- Birgir Hrafnkelsson og Gunnar Stefánsson. (2003) Mat á lengdardreifingum. *Tímarit um raunvísindi og stærðfræði*, 1. árg. 2. hefti, 45-55.
- Snorri Árnason, Birgir Hrafnkelsson og Ólafur P. Pálsson (2005) Mat á rennslislyklum og rennslu með bayesískri tölfræði. *Árbók VFÍ 2005*, 209-217.

Publications - book chapters

- Margeirsson, S., Jonsson, G., R., Arason, S., Thorkelsson, G., Sigurgisladóttir, S., Hrafnkelsson, B. and Jensson, P. (2007) Food Engineering Trends - Icelandic View. In the book: *Food Engineering Research Developments*. Edited by Terrance P. Klening. Hauppauge NY, Nova Science Publishers Inc. pp. 1-24.

Publications - refereed conference papers

- Rahpeyma, S., Halldorsson, B., and Hrafnkelsson, B. (2020). Velocity Profile Estimation in the Presence of Multiple Strong Velocity Reversals. *17th World Conference on Earthquake on Earthquake Engineering (17WCEE)* (p. Paper No. 3950). 13-18 September 2020, Sendai, Japan.
- Rahpeyma, S., Halldórsson, B., Hrafnkelsson, B. and Jónsson, S. (2019) Site effect estimation on two Icelandic strong-motion arrays using a Bayesian multi-level model for the spatial distribution of earthquake ground motion amplitudes. *NORTHQUAKE 2019 - The 3rd International Workshop on Earthquakes in North Iceland* (Þekkingarnet Þingeyinga), Húsavík, North Iceland, 21-24 May 2019 .

- Sonnemann, T., Halldorsson, B., Hrafnkelsson, B., Jónsson, S. and Snæbjörnsson, J.Þ. (2019) Earthquake source modeling and ground motion simulation in north Iceland. *NORTHQUAKE 2019 - The 3rd International Workshop on Earthquakes in North Iceland* (Þekkingarnet Þingeyinga), Húsavík, North Iceland, 21-24 May 2019.
- Halldórsson, B., Sonnemann, T. Kowsari, M. Rahpeyma, S., Hrafnkelsson, B. and Jónsson, S. (2019) On the scaling of earthquake strong-motion in north Iceland. *NORTHQUAKE 2019 - The 3rd International Workshop on Earthquakes in North Iceland* (Þekkingarnet Þingeyinga), Húsavík, North Iceland, 21-24 May 2019.
- Kowsari, M., Sonnemann, T., Halldorsson, B., Hrafnkelsson, B. (2018) Exploratory Bayesian analysis of Ground-motion models for spectral accelerations in Iceland. *16th European Conference on Earthquake Engineering (16ECEE)*, (the European Association for Earthquake Engineering (EAEE)), Thessaloniki, Greece, 18-21 June 2018, p Paper No. 11784.
- Rahpeyma, S., Halldorsson, B., Hrafnkelsson, B., Polat, O. (2018) Shear-wave velocity modeling by inversion of microseismic horizontal-to-vertical spectral ratio. *16th European Conference on Earthquake Engineering (16ECEE)*, (the European Association for Earthquake Engineering (EAEE)), Thessaloniki, Greece, 18-21 June 2018, p Paper No. 11620.
- Sonnemann, T., Halldorsson, B., Hrafnkelsson, B. and Papageorgiou, A. S. (2017) Local stress drop estimates of strong earthquakes in the south Iceland seismic zone. *16th World Conference on Earthquake Engineering* (the International Association for Earthquake Engineering, IAEE), Santiago, Chile, 9-13 January 2017. Paper No. 2771.
- Kowsari, M., Halldorsson, B., Hrafnkelsson, B., Snæbjörnsson, J. T., Olafsson, S. and Rupakhety, R. (2017) On the Selection of Ground-Motion Prediction Equations for Seismic Hazard Assessment in the South Iceland Seismic Zone. *16th World Conference on Earthquake Engineering* (the International Association for Earthquake Engineering, IAEE), Santiago, Chile, 9-13 January 2017. Paper No. 2809.
- Ingimarsson, K. M., Hrafnkelsson, B., Gardarsson, S. M. and Snorrason, A. (2008) Bayesian estimation of discharge rating curves. *XXV Nordic Hydrological Conference*, pp. 308-317. Nordic Association for Hydrology. Reykjavik, August 11-13, 2008.

Publications - unrefereed conference papers

- Rahpeyma, S., Halldorsson, B. and Hrafnkelsson, B. (2017). Bayesian hierarchical model of peak ground acceleration for the Icelandic strong-motion arrays. *International Conference on Earthquake Engineering and Structural Dynamics* (the Earthquake Engineering Research Centre of the University of Iceland), 12-16 June 2017, Reykjavik, Iceland.

- Cressie, N., Wendt, D. A., Johannesson, G., Mugglin, A. S. and Hrafnkelsson, B. (2003) A spatio-temporal statistical approach to problems in command and control. *Proceedings of the Sixth Annual U.S. Army Conference on Applied Statistics*, Houston 18-20 October 2000. Editors Bodt, B. and Wegman, E. Army Research Laboratory, MD, pp. 170-190.

TEACHING AND ADVISING OF GRADUATE STUDENTS

PhD students

- Dr. Sveinn Margeirsson. 2008. Title: Processing forecast of cod. Decision making in the cod industry based on recording and analysis of value chain data. Faculty of Engineering, University of Iceland. BH was co-advisor.
- Dr. Eydís K. Sveinbjarnardóttir 2012. Title: Family systems nursing interventions in acute psychiatry: Implementation and evaluation. Faculty of Nursing, University of Iceland. BH was co-advisor.
- Dr. Þórólfur Guðnason 2013. Title: Infectious illnesses and pneumococcal carriage among preschool children at Icelandic day care centers: Epidemiology, risk factors and intervention. Faculty of Medicine, University of Iceland. BH was co-advisor.
- Dr. Narayan Soorya Venkataraman 2014. Title: Random parameter analysis of geometric effects on freeway crash occurrence. Faculty of Civil and Environmental Engineering, University of Iceland. BH was co-advisor.
- Dr. Óli Páll Geirsson. 2015. Title: Computationally efficient Bayesian statistical modeling and inference for latent Gaussian models with an application to spatial extremes. Faculty of Physical Sciences, University of Iceland. BH was main-advisor.
- Dr. Sigríður Sigurðardóttir. 2016. Title: Modelling and Simulation for Fisheries Management. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science University of Iceland. BH was co-advisor.
- Dr. Þórhildur Ólafsdóttir. 2016. Title: Health and health behavior responses to macroeconomic shocks. Faculty of Economics, University of Iceland. BH was co-advisor.
- Dr. Saharalsadat Rahpeyma. 2018. Title: Analysis and modeling of earthquake strong-motion site effects on Icelandic arrays for earthquake engineering applications. Faculty of Civil and Environmental Engineering, University of Iceland. BH was co-advisor.
- Dr. Samúel Sigurðarson. 2018. Title: The impact of vaccination with conjugated pneumococcal vaccine on pneumococcal carriage and disease caused by pneumococci in Icelandic children. Faculty of Medicine, University of Iceland. BH was co-advisor.

- Dr. Milad Kowsari. 2019. Title: Bayesian inference of empirical ground motion models to Icelandic strong-motions and implications for seismic hazard assessment. Faculty of Civil and Environmental Engineering, University of Iceland. BH was co-advisor.
- Dr. Elías Eyþórsson. 2019. Title: The population impact and cost-effectiveness of the 10-valent pneumococcal conjugate vaccine in Iceland. Faculty of Medicine, University of Iceland. BH was co-advisor.
- Dr. Tim Sonnemann. 2019. Title: Earthquake Source Modelling and Broadband Ground Motion Simulation in South Iceland for Earthquake Engineering Applications. Faculty of Civil and Environmental Engineering, University of Iceland. BH was co-advisor.
- Dr. Giri Gopalan. 2019. Title: Spatio-temporal statistical models for glaciology. Faculty of Physical Sciences, University of Iceland. BH was main-advisor.
- Darri Eyþórsson. From 2016. Topic: Modeling of run-off from glaciers. Anticipated graduation in 2020. Faculty of Civil and Environmental Engineering, University of Iceland. BH is co-advisor.
- Andri Gunnarsson. From 2016. Topic: Analysis of remote sensing data from glaciers. Anticipated graduation in 2020. Faculty of Civil and Environmental Engineering, University of Iceland. BH is co-advisor.
- Farnaz Bayat. From 2019. Topic: Analysis of earthquake data. Anticipated graduation in 2022. Faculty of Civil and Environmental Engineering, University of Iceland. BH is co-advisor.
- Rohit Goswami. From 2021. Topic: Magnetic interactions of itinerant electrons modelled using Bayesian machine learning. Anticipated graduation in 2024. Faculty of Physical Sciences, University of Iceland. BH is co-advisor.

MSc students

- Olena Babak. 2005. Title: Methods for parameter estimation in the Gaussian-multinomial model. Faculty of Engineering, University of Iceland. BH was main-advisor.
- Snorri Árnason. 2005. Title: Estimating nonlinear hydrological rating curves and discharge using the Bayesian approach. Faculty of Engineering, University of Iceland. BH was main-advisor.
- Stefán Þór Þórsson. 2006. Title: Economic optimization of heavy maintenance-check time intervals for ITS. Faculty of Engineering, University of Iceland. BH was main-advisor.

- Björn Björnsson. 2006. Title: Modeling loss distributions with Bayesian mixture models. Faculty of Engineering, University of Iceland. BH was main-advisor.
- Kristinn M. Ingimarsson. 2008. Title: Discharge rating Curves using Bayesian statistics. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was main-advisor.
- Ásta Heiðrún Gylfadóttir. 2009. Title: Áhrif lána, launa og auðsáhrifa á neyslu landsmanna. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was main-advisor.
- Hanne Krage Carlsen. 2010. Title: Air pollution in Reykjavík and use of drugs for obstructive airway diseases. Faculty of Medicine, University of Iceland. BH was co-advisor.
- Rafn Sigurðsson. 2010. Title: Verðlagning langlífisáhattu. Faculty of Economics, University of Iceland. BH was co-advisor.
- Erna Sigurgeirsdóttir. 2010. Title: Analysis of claim frequency and claim size using the Bayesian approach. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was main-advisor.
- Þórkatla Hauksdóttir. 2010. Title: The effects of changes in prices and income on car and fuel demand in Iceland. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was main-advisor.
- Linghao Yi, 2010. Title: The Pricing of Options with Jump Diffusion and Stochastic Volatility. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was co-advisor.
- Jón Árni Helgason. 2011. Title: Fasteignamat með tímaleiðréttu margvíðu aðhvarfslíkani. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was main-advisor.
- Garðar Hólm Kjartansson. 2012. Title: The Solvency II influence on the Icelandic insurance market and the economic benefits of internal models. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was main-advisor.
- Fjalarr Páll Mánason. 2012. Title: Bayesian flood analysis with added uncertainty in extreme discharge measurements. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was main-advisor.
- Snæbjörn Helgi Emilsson. 2012. Title: A Bayesian Hierarchical Model for Daily Average Temperature. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was main-advisor.

- Tryggvi Hjörvar. 2012. Title: CEDER. Catch, Effort and Discard Estimation in Real-time. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was co-advisor.
- Atli Norðmann Sigurðarson. 2013. Title: Bayesian modeling of monthly precipitation via integration of measurements and meteorological model output. Faculty of Physical Sciences, University of Iceland. BH was main-advisor.
- Helgi Sigurðarson. 2014. Title: Bayesian Generalized Rating Curves. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was main-advisor.
- Hjörtur Þór Daðason. 2014. Title: Tölfræðileg greining á áhrifum vinds á tjón. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was co-advisor.
- Birgir Freyr Ragnarsson. 2014. Title: Wind energy potential assessment and cost analysis of a wind power generation system at Búrfell. Faculty of Industrial Engineering, Mechanical Engineering and Computer Science, University of Iceland. BH was co-advisor.
- Ólafur Birgir Davíðsson. 2016. Title: Bayesian flood frequency analysis using monthly maxima. Faculty of Physical Sciences, University of Iceland. BH was main-advisor.
- Árni Víðir Jóhannesson. 2018. Title: A spatial Bayesian hierarchical model for flood frequency analysis. Faculty of Physical Sciences, University of Iceland. BH was main-advisor.
- Brynjólfur Gauti Jónsson. 2020. Title: Continuous Categories and Age-Specific Mortality Rates: An application of Gaussian process priors to the Lee-Carter model. Faculty of Physical Sciences, University of Iceland. BH is main-advisor.
- Marta Björgvinsdóttir. From 2020. Topic: Analysis of glaciological data. Anticipated graduation in 2022. Faculty of Physical Sciences, University of Iceland. BH is main-advisor. BH is co-advisor.
- Sólveig Daðadóttir. From 2020. Topic: Analysis of fishmarket data. Anticipated graduation in 2022. Faculty of Physical Sciences, University of Iceland. BH is co-advisor.

MAS students

- Agnar Darri Lárusson. 2018. Title: Estimation of real estate prices using state space modeling and Kalman filtering. Faculty of Physical Sciences, University of Iceland. BH was main-advisor.

Courses taught at University of Iceland

- Introduction to Probability and Statistics for Engineers and Scientists.
Undergraduate course for engineering, mathematics and physics students.
- Mathematical Analysis IV.
Undergraduate course for engineering, mathematics and physics students on partial differential equations.
- Bayesian Data Analysis.
Graduate course and third year undergraduate course for statistics and mathematics students.
Open for students with appropriate background.
- Applied Statistical Linear Models.
Graduate course and third year undergraduate course for statistics and mathematics students.
Open for students with appropriate background.
- Random Effects Models.
Graduate course for statistics and mathematics students.
Open for graduate students with appropriate background.
- Industrial Statistics II.
Graduate course for engineering students.
Open for graduate students with appropriate background.
- Introduction to Random Signals and Applied Kalman Filtering.
Graduate course for engineering students.
Open for graduate students with appropriate background.
- System Reliability.
Graduate course for engineering students.
Open for graduate students with appropriate background.
- Biostatistics I.
Graduate course for public health students and an undergraduate course for medicine and dentistry students.
- Biostatistics II.
Graduate course for public health students and an undergraduate course for medicine and dentistry students.