

Dr. Simon Bonner

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Academic Employment

Assistant Professor, University of Kentucky	Jan 2011 – Present
Post-Doctoral Fellow, University of British Columbia Supervisor: Dr. Nancy Heckman	Jan 2009 – Dec 2010

Education

Ph.D. Statistics, Simon Fraser University Thesis: Heterogeneity in Capture-Recapture: Bayesian Methods to Balance Realism and Model Complexity Supervisor: Dr. Carl Schwarz	Sep 2004 – Dec 2008
Visiting Scholar, University of Kent at Canterbury Topic: Comparison of Methods for Incorporating Time-Dependent Covariates in Capture-Recapture Models Supervisor: Dr. Byron Morgan	Jan 2006 – Apr 2006
M.Sc. Statistics, Simon Fraser University Thesis: Continuous, Individual, Time-Dependent Covariates in the Cormack-Jolly-Seber Model Supervisor: Dr. Carl Schwarz	Sep 2001 – Apr 2003
B.Sc. (Hons.) Mathematics, McGill University Thesis: Detection of Changes in Brain Morphology using Multiple MRI Supervisors: Dr. Keith Worsley and Dr. D. Louis Collins	Sep 1997 – Apr 2001

Awards

NSERC Post-Doctoral Fellowship	Jan 2009
PIMS Post-Doctoral Fellowship (Declined)	Jan 2009
SSC 2008 Student Presentation Award	May 2008
Accelerate BC Internship Award of Excellence	Nov 2007
SFU PhD Research Stipend (PhD)	Sep 2007
NSERC Canadian Graduate Scholarship (PhD)	Apr 2005 – Apr 2007
Scott Paper Ltd Graduate Entrance Fellowship (PhD)	Sep 2004 – Sep 2005
Special Graduate Entrance Scholarship (PhD)	Sep 2004 – Sep 2005

Research Funding

Funding Received

National Science Foundation and KY Council on Postsecondary Education Jan 2011 – Jul 2013

- Rodney Andrews, Simon Bonner, J Brill, Gang Cao, Yang-Tse Cheng, L DeLong, Eric Grulke, Beth Guiton, Jeffrey Hastings, Bruce Hinds, Jerzy Jaromczyk, Ribhu Kaul, Kwokwai Ng, Abhijit Patwardhan, Christopher Schardl, Matthew Schofield, Seo Sung Seok H Shin
- Title: Transforming Kentucky's New Economy with EPSCoR
 - Role: Co-Principal Investigator
 - Funds: \$2,531,000.00 over three years

University of Kentucky Jan 2011 – Jul 2013

- Title: Startup Funding
- Funds: \$75,000 over three years

Pending Applications

NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases Jul 2013

- Hartmut Malluche, David Pienkowski, Mark Hanson, and Simon Bonner
- Title: Bisphosphonate Use and Bone Quality
 - Role: Co-Investigator
 - Funds: Requested \$200,000 for one year

Applications Under Revision

NSF – Statistics Program Due Nov 2013

- Simon Bonner, Matthew Schofield, and Ruriko Yoshida
- Title: Markov Bases and MCMC Sampling for Mark-Recapture Models with Misidentification
 - Role: Principal Investigator
 - Funds: Requesting \$608,189 for three years

Publications

Peer Reviewed Articles

Bonner, S.J. and Schofield, M. (2013). MC(MC)MC: Exploring Monte Carlo integration within MCMC for mark-recapture models with individual covariates. *Methods in Ecology and Evolution*, In press.

Bonner, S.J. and Holmberg, J.A. (2013). Mark-recapture with multiple non-invasive marks. *Biometrics*. In press.

Bonner, S.J., Newlands, N., and Heckman, N.E. (2013). Modeling regional impacts of climate teleconnections using functional data analysis. *Environmental and Ecological Statistics*. In press.

Bonner, S.J. (2013). Response to: A new method for estimating animal abundance with two sources of data in capture-recapture studies. *Methods in Ecology and Evolution*, 4(6):585–588.

- Chamberlain, J.L., Ness, G., Small, C.J., Bonner, S.J., and Hieber, E.B. (2013). Modeling below-ground biomass to improve sustainable management of *actaea racemosa*, a globally important medicinal forest product. *Forest Ecology and Management*, 293(1):1–8.
- Bonner, S.J. (2013). Implementing the trinomial mark-recapture-recovery model in Program MARK. *Methods in Ecology and Evolution*, 4(1):95–98.
- Bonner, S.J. and Schwarz, C.J. (2011). Smoothing population size estimates for time-stratified mark-recapture experiments using Bayesian p-splines. *Biometrics*, 67(4):1498–1507.
- Bonner, S.J., Morgan, B.J.T., and King, R. (2010). Continuous, time-varying covariates in mark-recapture-recovery analyses: A comparison of methods. *Biometrics*, 65(4):1256–1265.
- Calvert, A., Bonner, S.J., Jonsen, I., Flemming, J., Walde, S., and Taylor, P. (2009). A hierarchical Bayesian approach to multi-state mark-recapture: Simulations and applications. *Journal of Applied Ecology*, 46:610–620.
- Bonner, S.J., Thomson, D.L., and Schwarz, C.J. (2008). Time-varying covariates and semi-parametric regression in capture-recapture: An adaptive spline approach. In D.L. Thomson, E.G. Cooch, and M.J. Conroy (eds.), *Modelling Demographic Processes in Marked Populations*, vol. 3 of *Environmental and Ecological Statistics*, pp. 657–676. Springer, New York. Proceedings of the 8th EURING Technical Meeting.
- Gimenez, O., Bonner, S.J., King, R., Parker, R.A., Brooks, S.P., Jamieson, L.E., Grosbois, V., Morgan, B.J.T., and Thomas, L. (2008). WinBUGS for population ecologists: Bayesian modeling using Markov chain Monte Carlo methods. In D.L. Thomson, E.G. Cooch, and M.J. Conroy (eds.), *Modelling Demographic Processes in Marked Populations*, vol. 3 of *Environmental and Ecological Statistics*, pp. 883–916. Springer, New York. Proceedings of the 8th EURING Technical Meeting.
- Lampinen, T.M., Bonner, S.J., Rusch, M., and Hogg, R.S. (2007). High prevalence of smoking among urban-dwelling Canadian men who have sex with men. *Journal of Urban Health*, 83(6):1143–1150.
- Bonner, S.J. and Schwarz, C.J. (2006). An extension of the Cormack-Jolly-Seber model for continuous covariates with application to *Microtus pennsylvanicus*. *Biometrics*, 62(1):142–149.
- Hogg, R.S., Bangsberg, D.R., Lima, V.D., Alexander, C., Bonner, S., Yip, B., Wood, E., Dong, W.W., Montaner, J.S.G., and Harrigan, P.R. (2006). Emergence of drug resistance is associated with an increased risk of death among patients first starting HAART. *PLoS Medicine*, 3(9):e356.
- Bonner, S.J. and Schwarz, C.J. (2004). Continuous time-dependent individual covariates and the Cormack-Jolly-Seber model. In J.C. Senar, A. Dhont, and M.J. Conroy (eds.), *Animal Biodiversity and Conservation*, vol. 27. Proceedings of the 7th EURING Technical Meeting.
- Wood, E., Hogg, R.S., Bonner, S., Kerr, T., Li, K., Palepu, A., Guillemi, S., Schechter, M.T., and Montaner, J.S.G. (2004). Staging for anti-retroviral therapy among HIV-infected drug users. *Journal of the American Medical Association*, 292:1175a–1177a.

Book Reviews

Bonner, S.J. (2011). Review of *Bayesian Analysis for Population Ecology* by King, R., Morgan, B.J.T., Gimenez, O., and Brooks, S. *Biometrics*, 67(4):1675–1676.

Non Refereed Publications

Zala, C., Alexander, C.S., Ochoa, C., Guillemi, S., Ting, L.S., Bonner, S., Cahn, P., Harrigan, P.R., and Montaner, J.S.G. (2005). Comparable pharmacokinetics of generic Indinavir (Inhibisam) versus brand Indinavir (Crixivan) when boosted with Ritonavir. *Journal of Acquired Immune Deficiency Syndromes*, 38(1):363–364. Letter to the Editor.

Technical Reports

Ness, G. and Bonner, S.J. (2012). Modeling the relationship between below ground and above ground biomass of black cohosh. Technical report, Dr. Jim Chamberlain, U.S. Forest Service.

Bonner, S.J. and Schwarz, C.J. (2011). A spline-based capture-mark-recapture model applied to estimating the number of Steelhead within the Bulkley River passing the Moricetown canyon in 2001-2010. Technical report, BC Ministry of Environment.

Bonner, S.J. (2010). Functional data analysis of the trends and predictors of climate in British Columbia. Technical report, Agriculture and Agri-Food Canada.

Bonner, S.J. (2008). The stratified-Petersen experiment: Effects of heterogeneity by strata on the estimate of run size and its variance. Technical report, BC Hydro.

Bonner, S.J. and Schwarz, C.J. (2008). Analysis of variability in water quality, sediment quality, and abundance of benthic organisms in two lakes of the Koala watershed. Technical report, Rescan Environmental Services Ltd.

Bonner, S.J. (2006). Analysis of the effects of 11 chemicals on wireworm mortality. Technical report, Pacific Agri-Food Research Centre.

Presentations and Posters

Invited Presentations

Bonner, S.J. and Schofield, M.R. (2013). MC(MC)MC: Inference for heterogeneous populations via MC within MCMC. *EURING Analytical Meeting & Workshop*. Athens, GA.

Bonner, S.J. and Holmberg, J.A. (2012). Mark-recapture of whale sharks with multiple non-invasive marks: a Bayesian approach. *University of Toronto*. Toronto, ON.

Bonner, S.J. and Holmberg, J.A. (2012). Mark-recapture of whale sharks with multiple, natural marks. *University of Louisville*. Louisville, KY.

- Bonner, S.J. and Holmberg, J.A. (2012). Mark-recapture of whale sharks with multiple, natural marks. *International Biometrics Conference*. Kobe, Japan.
- Bonner, S.J. and Schwarz, C.J. (2011). Bayesian estimation of abundance for open populations with covariate dependent capture probabilities. *Dalhousie University*. Halifax, NS.
- Ness, G., Bonner, S.J., and Chamberlain, J. (2011). Modeling the relationship between below ground and above ground biomass of black cohosh. *Radford University*. Radford, VA (Presented by G Ness).
- Bonner, S.J. and Schwarz, C.J. (2011). Advances in modelling time-stratified mark-recapture data from salmon outmigrations via Bayesian p-splines. *39th Annual Meeting of the Statistical Society of Canada*. Wolfville, NS.
- Bonner, S.J., Newlands, N., and Heckman, N. (2010). Functional data modelling of climate trends in British Columbia. *Functional Data Analysis: Future Directions*. Banff, AB.
- Bonner, S.J. and Schwarz, C.J. (2009). Bayesian estimation of abundance for open populations with covariate dependent capture and survival probabilities. *University of Victoria*. Victoria, BC.
- Bonner, S.J. and Schwarz, C.J. (2008). Application of Bayesian p-splines to the stratified two-stage capture-recapture study. *University of British Columbia*. Vancouver, BC.

Conference Presentations

- Bonner, S. and Holmberg, J. (2013). Application of the latent multinomial model to data from multiple non-invasive marks. *ENAR Spring Meeting*. Orlando, FL.
- Bonner, S., Newlands, N., Qian, B., and Heckman, N. (2010). Functional data analysis of the trends and predictors of climate in British Columbia. *Joint Statistical Meetings*. Vancouver, British Columbia.
- Bonner, S., Newlands, N., Qian, B., and Heckman, N. (2010). Functional data analysis of the trends and predictors of climate in British Columbia. *IMS New Researchers Conference*. Vancouver, British Columbia.
- Bonner, S.J. and Schwarz, C.J. (2009). Bayesian estimation of abundance for open populations with covariate dependent capture and survival probabilities. *9th EURING Technical Meeting*. Pescara, Italy.
- Bonner, S.J. and Schwarz, C.J. (2008). Hierarchical Bayesian modelling of two-stage capture-recapture experiments. *Joint Meeting of the Statistical Society of Canada and the Société Française de Statistique*. Ottawa, Ontario.
- Bonner, S.J. and Schwarz, C.J. (2007). Bayesian smoothing of the stratified-Petersen model. *WNAR/IMS Annual Meeting*. Irvine, California.
- Bonner, S.J., Thomson, D.T., and Schwarz, C.J. (2007). Time-varying covariates and semi-parametric regression in capture-recapture: an adaptive spline approach. *8th EURING Technical Meeting*. Dunedin, New Zealand.

Bonner, S.J. and Schwarz, C.J. (2003). Continuous individual time-dependent covariates in the Cormack-Jolly-Seber model. *7th EURING Technical Meeting*. Radolfzell, Germany.

Posters

Augustine, B.C., Tredick, C.A., and Bonner, S.J. (2013). Accounting for behavioral variation in closed population models with missing data. *EURING Analytical Meeting & Workshop*. Athens, GA.

Ness, G., Chamberlain, J., Bonner, S., and Small, C. (2011). Modeling the relationship between below ground and above ground biomass of black cohosh. *2nd Annual University of Kentucky Environmental Research Showcase*. Lexington, Kentucky, USA.

Bonner, S.J., King, R., and Morgan, B.J.T. (2007). Comparison of methods for incorporating covariates in mark-recapture-recovery analysis. *8th EURING Technical Meeting*. Dunedin, New Zealand.

Bonner, S., Rusch, M., Lampinen, T.M., Miller, M.L., Devlin, B., and Hogg, R.S. (2004). Smoking behaviour among men who have sex with men. *13th Annual Canadian AIDS/HIV Research Conference*. Montreal, Quebec.

Bonner, S.J., Hogg, R.S., Geller, J., Yip, B., Gataric, N., and Montaner, J.S. (2004). Concordance between two measures of adherence to anti-retroviral therapy. *13th Annual Canadian AIDS/HIV Research Conference*. Montreal, Quebec.

Guillemi, S., Alexander, C.S., Bonner, S., Ting, L., Harris, M., Harrigan, P.R., and Montaner, J.S. (2004). Lopinavir trough concentration remains consistent for adult patients regardless of age. *13th Annual Canadian AIDS/HIV Research Conference*. Montreal, Quebec.

Harris, M., Alexander, C., Bonner, S., Ting, L., McNabb, K., Harrigan, P.R., and Montaner, J.S.G. (2004). Soft gel and hard gel formulations offer similar exposure to Saquinavir in Ritonavir-boosted regimens. *5th International Workshop on Clinical Pharmacology of HIV Therapy*. Rome, Italy.

Harris, M., Zalunardo, N., Bonner, S., Werb, R., Valyi, M., and Montaner, J.S. (2004). Use of estimated glomerular filtration rate (GFR) to predict renal toxicity in patients receiving Tenofovir DF (TDF). *11th Conference on Retroviruses and Opportunistic Infections*. San Francisco, California.

Research and Consulting Experience

Statistical Consultant Cheakamus River Outmigration Assessment BC Hydro, Vancouver, BC	Jan 2011 – June 2011
Statistical Consultant Trinity River Restoration Program BC Hydro, Vancouver, BC	Jan 2009 – Oct 2009
Junior Analyst Northern Spotted Owl Monitoring Workshop Northwest Forest Plan/Interagency Regional Monitoring Program, Corvallis OR	Jan 2009
Accelerate BC Graduate Research Intern Rescan Environmental Services Ltd., Vancouver BC	Mar – Jul 2007
Statistical Consultant Statistical Consulting Service Simon Fraser University, Burnaby BC	Jan 2005 – Aug 2006
Statistical Analyst BC Centre for Excellence in HIV/AIDS St. Paul's Hospital, Vancouver BC	Sep 2003 – Aug 2004
Research Assistant Department of Statistics and Actuarial Science Simon Fraser University, Burnaby BC	Apr – Aug 2003
Research Assistant Brain Imaging Centre Montreal Neurological Institute, Montreal QC	Sep 2000 – Aug 2001

Other Research Activities

Session Organizer and Co-chair Bayesian Methods for Modeling Mark-Recapture Data with Non-Invasive Marks ENAR Spring Meeting, Orlando, FL	March 2013
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Teaching Experience

Assistant Professor, University of Kentucky

STA 665: Categorical Data Analysis	Spring 2013
STA 695: Ecological Statistics	Fall 2012
STA 607: Theory of Statistical Inference	Fall 2011/2012
STA 671: Correlation and Regression	Spring 2011/2012
STA 672: Design and Analysis of Experiments	Spring 2011/2012

Workshop on Out-Migration Population Estimation

Oct 2009

Trinity River Restoration Program/US Fish and Wildlife Service, Arcata, Calif.

Sessional Instructor, Simon Fraser University

STAT450: Statistical Theory	Fall 2005
STAT101: Introduction to Statistics	Summer 2003

Instructional Development

Certificate Program in University Teaching and Learning

Sep 2004 – Apr 2005

Learning and Instructional Development Centre, Simon Fraser University

Instructional Skills Workshop

Apr 2003

Learning and Instructional Development Centre, Simon Fraser University

Student Supervision

MSc Students

Ben Augustine May 2012-Present
Accounting for Behavioral Variation in Closed Population Models with Missing Data

Gabrielle Ness May 2011-May 2012
Modeling the Relationship between Below Ground and Above Ground Biomass of Black Cohosh

Research Assistants

Yinglei Li May – Aug 2012
Application of LASSO Model Selection to Mark-Recapture

PhD Committees

Zhang, Xiang (Statistics) – Defended June 2013
Ewing, Bob (Accounting) – Current
Lueker, Dustin (Statistics) – Current
Moldoff, David (Biology) – Current
Tzu, Yu (Accounting) – Current

External Examiner

Nikutta, Robert (Physics) Jul 2012
Zhi, Weifeng (Mathematics) Aug 2011

Service Activities

Secretary – KY Chapter American Statistical Association	Oct 2012 – Present
Computing Committee Co-Chair Department of Statistics, University of Kentucky	Sep 2011 – Present
Department Picnic Committee Co-Chair Department of Statistics, University of Kentucky	Summer 2011
IMS New Researchers Conference 2010 On-site Coordinator Institute of Mathematical Statistics	Jul 2010
SSC New Researchers Dinner 2009 On-site Organizer Statistical Society of Canada Annual Meeting	Jun 2009

Refereeing

I have reviewed articles for the following publications:

- *Annals of Applied Statistics*
- *Biometrical Journal*
- *Biometrics*
- *Canadian Journal of Statistics*
- *Encyclopedia of Environmetrics*
- *Environmental and Ecological Statistics*
- *Ecology*
- *Journal of Agricultural, Biological, and Environmental Statistics*
- *Journal of Applied Ecology*
- *Journal of Field Ornithology*
- *Journal of Ornithology*
- *Journal of Statistical Software*
- *Journal of Wildlife Management*
- *Marine Biology*
- *Methods in Ecology and Evolution*
- *Modelling Demographic Processes in Marked Populations*
(Proceedings of the 2007 EURING Technical Meeting)
- *North American Journal of Fisheries Management*

Professional Society Memberships

I am a member of the following organizations:

- American Statistical Association
- Statistical Society of Canada
- International Biometrics Society (Eastern North American Region)
- National Centre for Statistical Ecology (United Kingdom – International Member)

Workshops and Courses Attended

Write Winning Grants Grant Writers Seminars and Workshops, University of Kentucky	May 2013
Science – Becoming the Messenger National Science Foundation, University of Louisville	March 2013
Program MARK Advanced Workshop Department of Fish, Wildlife, and Conservation Biology, Colorado State University	Aug 2011
Managing Projects Workshop MITACS Skills Enhancement Program, MITACS	Apr 2009
Survival Skills for Post Docs: The People Side of Achieving Success Continuing Studies Life and Career Centre, University of British Columbia	Mar 2009
Graduate Institute on Modeling Environmental Space-Time Processes Pacific Institute of Mathematics, University of Washington	Jul 2007
Causal Inference in Experiments and Observational Studies 2007 WNAR/IMS Meeting, University of California, Irvine	Jun 2007
Program MARK Workshop Department of Fishery and Wildlife, Colorado State University	Jun 2005