Kyle Chezik

Curriculum Vitae

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Education

Ph.D Simon Fraser University (Burnaby, BC) – Dept. of Biological Sciences *Expected December 2018*
Thesis title: (TBD)
Advisor: Dr. Jonathan Moore

M.Sc. University of Minnesota (Twin Cities) – Dept. of Fisheries, Wildlife and Conservation Biology 2013
Thesis title: Fish growth and degree-days: Advice for selecting base temperatures in both within- and among-lake studies.
Advisor: Dr. Paul Venturelli

B.A. St. Olaf College (Northfield, Minnesota) 2009
Advisors: Dr. John Schade & Dr. Patrick Ceas
Major: Biology (Environmental Studies Concentration)

Personal Statement

I am interested in the impacts of human activities on systems and using data driven methods to understand complex interactions and predict potential outcomes of management with the aim of facilitating knowledge driven decisions in the face of uncertainty. My graduate work has focused primarily on the impacts of climate change on physical and biological processes, but I've also been interested in developing methods to mitigate bias in statistical models and automate data quality control through unsupervised machine learning. For instance, some of my work described how the arborescent structure of river networks dampens climate driven shifts in river flow by aggregating a diverse climate portfolio. I've also described how the spatial structure of climate, conveyed to the river network, has varied impacts on salmon populations inhabiting different locations on the network. These research questions required large volumes of data, advanced statistical techniques and technical knowledge of computing software, hardware and languages. Process challenges associated with research have made me keenly interested in developing tools that reduce the labor associated with 'big data', leading me to build a Hidden Morkov Model, an unsupervised machine learning method, to probabilistically identify errors in stream temperature data. Ultimately, my passion is uncovering patterns in data and displaying these relationships in clever ways that are beautiful and intuitive, in order to convey knowledge in a digestible way that can reach those in positions to make important decisions.

Experience

Graduate Research Assistant, SFU (Moore lab), Burnaby, BC Canada	2013-Present
Graduate Research Assistant, UMN (Venturelli lab), St. Paul, MN	2011-2013
Associate MDR Specialist, Medtronic Inc., Mounds View, MN.	2011
Data Specialist/CSSC II, Kelly Scientific Services St. Louis Park, MN.	2009-2010
Field Research Assistant, St. Olaf Collaborative Undergraduate Research and Inquiry (CURI) Program. Northfield, MN. (Ceas Lab)	2008-2009

Teaching Experience

Workshops:		
Skeena Fisheries Commission: Intro. to R	Prince Rupert, BC	2016
Teaching Assistant:		
Analysis of Populations	University of Minnesota	2013
Fisheries Population Analysis (Lab Instructor)	University of Minnesota	2011
Evolution and Diversity	St. Olaf College	2009
Tutor:		
Intermediate Genetics	St. Olaf College	2008

Publications

Chezik, K.A., Moore, J.W. (In Prep). Cleaning Ecological Data in the Era of Big Data. Target Journal: Methods in Ecology.

Chezik, K.A., Wilson, S.M., Moore, J.W. (In Prep). Spatial structuring of climate match-mismatch in a migratory fish. Target Journal: Global Change Biology.

Chezik, K.A., Anderson, S.C., Moore, J.W. 2017. River networks dampen long-term hydrological signals of climate change. Geophysical Research Letters 44: 7256-7264

Chezik, K.A., Nigel L.P., Venturelli, P.A. 2014. Fish growth and degree-days I: Selecting a base temperature for a within-population study. Canadian Journal of Fisheries and Aquatic Sciences 71(1): 47-55.

Chezik, K.A., Nigel L.P., Venturelli, P.A. 2014. Fish growth and degree-days II: Selecting a base temperature for an among-population study. Canadian Journal of Fisheries and Aquatic Sciences 71(1): 1303-1311.

Chezik, K.A. 2013. Travel Grant Report, Fisheries Society of the British Isles Newsletter (Winter) pg. 7

Conference Presentations

Chezik, K.A., S.W., Wilson, Moore, J.W. 2018. Spatial Patterns of Phenological Match-Mismatch in Pink Salmon. Association for the Sciences of Limnology and Oceanography. Victoria, BC. (Oral)

Chezik, K.A., Anderson, S.C., Moore, J.W. 2017. River Networks Dampen Long-Term Hydrological Signals of Climate Change. Canadian Society of Ecology and Evolution. Victoria, BC. (Oral)

Chezik, K.A., Anderson, S.C., Moore, J.W. 2017. River Networks Dampen Long-Term Hydrological Signals of Climate Change. American Water Resources Association. Salt Lake City, UT. (Invited-Oral)

Chezik, K.A., Anderson, S.C., Moore, J.W. 2015. River Networks: River Networks Attenuate Climate-Induced Flow Trends. American Fisheries Society. Portland, OR. (Oral)

Chezik, K.A., Nigel L.P., Venturelli, P.A. 2013. The first steps towards a standardized approach to using degree-days in fish science. Ecological Society of America Annual Meeting. Minneapolis Minnesota. (Oral)

Chezik, K.A., Nigel L.P., Venturelli, P.A. 2013. Degree-days in Fish Science: An argument for the Standardization of Base Temperatures. Symposium for European Freshwater Sciences. Münster Germany. (Oral)

Chezik, K.A., Nigel L.P., Venturelli, P.A. 2012. Degree-Day Thresholds: Towards a standardized approach to using degree-days in fish science. American Fisheries Society. St. Paul MN. (Oral)

Fernanda A., Chezik, K.A., Loppnow, G., Venturelli, P.A. 2012. Using degree-days to predict when eggs will hatch in the field. American Fisheries Society. St. Paul MN. (Poster)

Chezik, K.A. Nigel L.P., Venturelli, P.A. 2012. Degree-Day Thresholds: Towards a standardized approach to using degree-days in fish science. International Congress on the Biology of Fish. Madison, WI. (Oral)

Other Presentations

Chezik, K.A., S.W., Wilson, Moore, J.W. 2018. Spatial Structuring of Match-Mismatch. IDEAS Symposium. Burnaby, BC. (Oral)

Chezik, K.A., Moore, J.W. 2015. River Networks: A climate portfolio. IDEAS Symposium. Burnaby, BC. (Oral)

Chezik, K.A., Nigel L.P., Venturelli, P.A. 2013. Degree-Day Thresholds: Towards a standardized approach to using degree-days in fish science. UMN Conservation Biology Spring Seminar. University of Minnesota Twin Cities Campus, St. Paul, MN. (Oral)

Chezik, K.A., Nigel L.P., Venturelli, P.A. 2012. Degree-Day Thresholds: Towards a standardized approach to using degree-days in fish science. Fall Minnesota Department of Natural Resources Research Meeting. Itasca Biological Station and Laboratories, South Clearwater, MN. (Oral)

Chezik, K.A., Nigel L.P., Venturelli, P.A. 2012. Degree-Day Thresholds: Towards a standardized approach to using degree-days in fish science. Summer Minnesota Department of Natural Resources Research Meeting. Eagle Bluff Environmental Learning Center, Lanesboro, MN. (Oral)

Chezik, K.A., Porterfield, J.C., Ceas, P.A. 2009. Habitat requirement and genetic variation of the Northern Longear sunfish (*Lepomis megalotis peltastes*). St. Olaf Student Independent Research Symposium. Northfield, MN. (Oral/Poster)

Funding/Awards

KEY Big Data Graduate Scholarship	($6500 CAD)	SFU Biological Sciences	2018
BISC Travel & Minor Research Award	($500 CAD)	SFU Biological Sciences	2018
BISC Graduate Fellowship Award	($6500 CAD)	SFU Biological Sciences	2017
BISC Travel & Minor Research Award	($400 CAD)	SFU Biological Sciences	2017
BISC Graduate Fellowship Award	($6500 CAD)	SFU Biological Sciences	2016
BISC Travel & Minor Research Award	($650 CAD)	SFU Biological Sciences	2016
BISC Travel & Minor Research Award	($405 CAD)	SFU Biological Sciences	2015
FWCB Travel Grant	($400 USD)	Fisheries Wildlife and Conservation Biology	2013
FSBI Travel Grant	(£1,000)	The Fisheries Society of the British Isles	2013
Conservation Biology Block Grant	($4,500 USD)	UMN, Conservation Biology Program	2012
Behrent's Grant	($200 USD)	St. Olaf College	2009
Volunteer Network: Program of the Year Award		St. Olaf College	2009

Contract Work

Pacific Salmon Foundation (ESSA Inc.)	Stream Network Temperature Modeling for British Columbia	2016

Activities/Volunteer

Member, Association for the Sciences of Limnology and Oceanography	2018-Present
Member, Canadian Society for Ecology and Evolution (CSEE)	2016-Present
Member, American Water Resources Association (AWRA)	2016-Present
Member, The Fisheries Society of The British Isles (FSBI)	2012-Present
Member, American Fisheries Society (AFS)	2011-Present
Coordinator, Conservation Biology Bike Relay Fundraiser, UMN, Conservation Biology Program	2011-2012
Volunteer Buddy, Laura Baker Services Buddy Program	2009

Skills

Writing: Proposals, technical reports, manuscripts, etc.,
Field: Backpack/barge electrofishing, seining, gill netting, scaling, tissue sampling, external/internal tagging, D.O. measurements, turbidity/discharge measurements, temperature sampling, etc.
Lab: Water Nutrient Analysis (N/P), PCR, DNA Extraction/Isolation, Polyacrylamide Gel Electrophoresis, and Genotype Analysis.
Computer:

Languages: R, Python, Mac Linux Command Line, Stan, HTML, CSS, C, Regex, C++, Java, Ruby, (by proficiency)
Database Management: Relational – (SQL, MS Access, …) Conventional – (Excel, CSV, RDS, …)
GIS: ArcGIS, QGIS, SAGA, Whitebox, OSGEO, GDAL, …
Statistics: Generally proficient at frequentist, maximum likelihood and Bayesian methodologies, with specific experience building Hidden Markov Models, Linear Regressions, Generalized Additive Models, Mixed Effect Models, ARMA, ARIMA and GARCH models, State Space Models, Spatial/Temporal Autocorrelation models, …

References

Dr. Jonathan Moore, Assistant Professor
Liber Ero Chair of Aquatic Ecology and Conservation
Simon Fraser University, Department of Biological Sciences
Phone: (778) 782-9246, Email: jwmoore@sfu.ca

Dr. Paul Venturelli, Assistant Professor of Fisheries
Ball State, Department of Biology
Phone: (765) 285-8812, Email: paventurelli@bsu.edu

Dr. Patrick Ceas, Chemical Hygiene Officer
St. Olaf College
Phone: (507) 786-3560, Email: ceas@stolaf.edu

Additional references available upon request.