Ridouan Bani

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Education

2014-2019: **Ph.D**, Biology. McGill University. Thesis title: Marine dynamic connectivity: interplays between pelagic traits, ocean currents, and climate change and application to marine protected areas network.

2012-2013: **Master of Science,** Mathematics. Northeastern Illinois University. Thesis title: Methods for understanding Complex Epidemiological systems.

2010-2012: **Bachelor of Arts**, Interdisciplinary studies & Mathematics. Northeastern Illinois University Chicago IL.

2005-2008: **Agrégation de Mathématiques**. Ecole Normal Superieure, Marrakech, Morocco.

2001-2003: **Mathematiques & Physiques** (MP). Classes Préparatoires aux Grandes Ecoles d'Ingenieures, Meknes, Morocco.

Teaching Assistantships (McGill University)

Bio 111: Principles: Organismal Biology. (Fall 2015-16-17)
Bio 112: Cell & Molecular Biology. (Winter 2014-15-16-17-18)
Bio 308: Ecological Dynamics. (Fall 2014)
Bio 309: Mathematical models in Biology. (Fall 2014)

Publications and Research projects

- Ridouan Bani, Marie-Josee Fortin, Remi Daigle, Frederic Guichard. Climate change and marine protected areas: Revisiting the problem of size and distance. (in preparation)
- Ridouan Bani, Marie-Josee Fortin, Remi Daigle, Frederic Guichard. Can dispersal plasticity mitigate negative effects of climate change at local level and allow marine species to persist at regional level. (submitted)
- Bani, R., Fortin, M. J., Daigle, R. M., & Guichard, F, 2018. Dispersal traits interact with dynamic connectivity to affect metapopulation growth and stability. Theoretical Ecology, 1-17
- Bani, R., Hameed, R., Szymanowski, S., Greenwood, P., Kribs-Zaleta, C., & Mubayi, A. (2013). Influence of environmental factors on college alcohol drinking patterns. Mathematical biosciences and engineering, 10(5-6), 1281-1300.
- Ridouan Bani, Anna D. Broido, Andrew F. Brouwer, Shih-Han Chang, Kihoon Jang,Qianqian Ma, and Jiani Yin (2013). Burden of Chlamydia in the United States Trend Analysis of Incidence Rates. IMSM. 10.13140.

Workshops

- The 2013 Industrial Mathematical and Statistical Modeling Workshop for Graduate Students, North Carolina State University, July 15-23, 2013.

- Stochastic Modeling of Biological Processes. Institute for Mathematics and its Applications (IMA), University of Minnesota, May 12-17, 2013.
- SAMSI-SAVI workshop on environmental statistics, March 4-6, 2013. 1st
- Workshop on mathematical & statistical modeling with application in epidemiology and finance, Northeastern Illinois University, December 14-16, 2012.

Presentations (Oral & Poster)

- Quebec Centre for Biodiversity Science (QCBS) annual meeting Dec 12-13, 2018. Title: Can stochasticity dispersal mitigate negative effects of climate change at local level and allow marine species to persist at regional level.
- Ecological Society of America (ESA) 102st annual meeting August 6-11, 2017.Title: Trait-dependent effects of spatiotemporal heterogeneity in larval dispersal on marine metapopulations.
- Quebec Centre for Biodiversity Science (QCBS) annual meeting Dec 14-16, 2016. Title: Trait-dependent effects of spatiotemporal heterogeneity in larval dispersal on marine metapopulations.
- Ecological Society of America (ESA) 101st annual meeting August 7-12, 2016. Title: Trait-dependent effects of spatiotemporal heterogeneity in larval dispersal on marine metapopulations.
- Center for Applied Mathematics in Bioscience and Medicine (CAMBAM)5th Annual End of Year Meeting April 28, 2015. Title: The interplay of biotic and abiotic variabilities in shaping the ecosystems.
- Center for Applied Mathematics in Bioscience and Medicine (CAMBAM) seminar, March 5th, 2015. Title: Spatio-temporal connectivity: Implications for metapopulation, metacommunity and application in marine reserves.
- The SIAM Annual Meeting (AN13), San Diego, July 8-13, 2013. Title: Role of climate factors in predicting leishmaniasis incidence.
- The SMB annual meeting, Arizona state University, June 9-13, 2013. Title: Lymphatic filariasis: transmission dynamics and diagnostics during Mass Drug Administration.
- SAMSI-SAVI workshop on environmental statistics March 4-6, 2013. Title: Influence of environmental factors and intervention programs on control of college alcohol drinking patterns.

Awards

- Graduate Excellence Fellowship 2014-15
- Molson and Hilton Hart Fellowships in Science 2015
- Writing-year award 2015
- Biology department at McGill: Research & Great travel awards
- QCBS Excellence award & intensive course award

Skills

Operating systems: Windows, MacOS, Linux
Languages: MatLab, R, MiniTab , Python (Pandas, SQLAlchemy, Flask), C++, LeTex, distributed computing.

Statistical Modeling: Sampling, Inference, Multivariate linear regression Models, mixed-effects regression, correlation, Covariance, ANOVA, ANCOVA, Principal components, Factor analysis, Canonical correlation analysis, Discrimination and classification, Clustering methods, Bootstrap resampling, Bayesian analysis, MCMC analysis.
Mathematical Modeling: deterministic, scholastic, and probabilistic modeling and associated analysis, sensitivity and uncertainty analysis, parameter estimation, data fitting methods.
Financial Mathematics: rates, return, risk, and portfolio analysis, volatility analysis, options pricing modeling

Languages

English: Proficient in spoken and written
French: Proficient in spoken and written
Tamazight: native speaker
Arabic: proficient in spoken and written