Nicholas Kullman

Quantitative Ecology & Resource Management

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Summary of Qualifications

- Experienced in OR – vehicle-routing internship, thesis in multi-objective optimization
- Strong quantitative skills – B.S. in Physics (3.98 GPA), finishing M.S. in QERM
- Excelled in IND E classes to date – 3.9+ GPA in IND E 512, 513; MATH 514; SEFS 540
- Effective communicator – invited by advisors to TA in both physics and SEFS
- Computer programming – Java, Python, D3, CPLEX, JavaScript, ArcGIS, HTML, R

Education

University of Washington – M.S. Quantitative Ecology & Resource Management (2016)

Advisor: Sándor F. Tóth
Thesis title: *Effects of Climate Change on Tradeoffs Among Forest Ecosystem Services*

University of Missouri – B.S. Physics (2011)

Graduated Phi Beta Kappa with departmental and Latin honors (summa cum laude, 3.98 GPA). Minor in mathematics. Semester abroad: Barcelona, Spain. Foreign language: Spanish

Academic and Professional Experience

Graduate Research Assistant – University of Washington (2013-present)

Quantified risk of climate change destabilizing tradeoff relationships between ecosystem services in the Deschutes National Forest using multi-objective mixed-integer programs.
Developed user-friendly software to solve multi-objective optimization problems using IBM's CPLEX optimizer and its Java Concert Technology.
Designed interactive visualizations of optimization results using Javascript library D3.

Research Intern – Electric Vehicle Routing Optimization, Polytech Tours (Winter 2016)

Optimized routing for electric vehicles using stochastic dynamic programming.
Formulated model and model assumptions and simulated queuing processes.
Developed and maintained project's Java codebase on GitHub.

Graduate Teaching Assistant – University of Washington (Spring 2016)

Created and taught labs for SEFS 540 - *Optimization Techniques for Natural Resources*.

Telecom Design Engineer – Sprint (2011-2013)

Served as subject matter expert on the use of bi-directional amplifiers in LTE networks.
Designed and led product testing for site-level telecom equipment.
Mitigated threats from intermodulation by computing unsafe frequency combinations.

Undergraduate Teaching Assistant – University of Missouri (Autumns 2009, 2010)

Led problem solving and discussion sections for undergraduate physics sequence.

NSF REU Research Assistant – University of California, Davis (Summer 2010)

Determined the non-existence of exoplanets around 40 type-M dwarf stars through analysis of photometric variations in astronomical imagery.

Selected Patents

US Pat. 8,896,497: Communications-tower antenna mount

US Pat. 8,897,383: Enhanced multipath environments for MIMO wireless networks

US Pat. 20,140,321,367: Wireless communication system with multiple Device-to-Device (D2D) communication configurations

COMMUNITY INVOLVEMENT	**Uptown Alliance** - Transportation committee, Parks committee
	USDOT Beyond Traffic Forum - volunteer
	Queen Anne Greenways - volunteer