MICHAEL FRANCE NELSON

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SUMMARY/OBJECTIVE

I wear many hats: GIS practitioner, educator, ecologist, botanist, researcher, programmer, and life-long learner. Most of all, I am a professional who uses my skills and experience to excel in new and challenging roles.

My goal is to leverage my experience and skills, which I've developed primarily in academic settings, in a more hands-on environment. My ideal organization is one that values my technical abilities, my eagerness to learn, and ability to work independently, as a team member, and as a leader.

PROFESSIONAL EXPERIENCE

University Lecturer – New Jersey Institute of Technology **2024 – present**
Department of Biology

- Teaching courses in genetics, conservation biology, and evolution.
- Mentorship of undergraduate students in the Urban Ecology Lab

Lecturer - University of Massachusetts, Amherst **2019 – 2023**
Department of Environmental Conservation

- Designed and taught graduate and undergraduate courses in statistics, quantitative ecology, geographic information systems (GIS), and spatial analysis.
- Served as administrative lead on the department's Quantitative Sciences Group (QSG), a consulting body which advised students and faculty on all aspects of the research process from experimental design, to modeling and interpretation of statistical analyses.
- Served on the leadership team of the Northeast Regional Invasive Species and Climate Change network (RISCC), coordinating various projects and leading presentations and publications focused on translational ecology, the practice of transforming ecological research into actionable science.
- Advised Master's, Ph.D., and undergraduate students as their primary advisor and served as a committee member for numerous dissertation and thesis committees.
- Collaborated with the UMass Cranberry Bog to secure funding for two research grants and provided data analysis support to funded projects.
- Published, as primary and secondary author, numerous peer-reviewed articles and outreach materials.

Postdoctoral Research Associate – University of Oregon **2014 – 2019**
Institute for Sustainable Environment Ecosystem Workforce Program and the Department of Geography.

- Taught undergraduate and graduate courses in spatial analysis and agent-based modeling.
- Created agent-based models of mountain pine beetle (MPB) population dynamics and forest succession using the R and Java programming languages.
- Conducted and published research using agent-based models and spatial analyses of the Sudden Oak Death pathogen, forest fire, and forest pest dynamics.

Graduate Research and Teaching Assistant – University of Minnesota **2008 – 2014**
Plant Biological Sciences Program, Department of Horticultural Science

- Conducted laboratory, greenhouse, field, and simulation studies of ecophysiology and population genetics of the invasive reed canarygrass (*P. arundinacea*).
- Received numerous scholarships and fellowships including the UMN graduate school fellowship, William H. Alderman Memorial Graduate Award, Horticultural Science departmental fellowship, and the National Science Foundation's Integrative Graduate Education and Research Traineeship in Risk Analysis for Introduced Species and Genotypes (ISG-IGERT)

Microbiologist, LexaMed Inc., Toledo OH **2006 – 2008**

- Conducted microbiological techniques including sterility testing, bacterial and fungal culturing and identification, mammal tissue culture, and microscopy.
- Designed and executed large-scale tests of a novel medical device sterilization technique.

TECHNICAL AND SOFTWARE SKILLS

R, RStudio, RMarkdown: Advanced knowledge and experience in using the R programming language for statistical analysis, data visualization, network analysis, and as a Geographic Information System (GIS). Experience teaching students to use R for coursework in spatial and general statistics.

ESRI: Used ArcGIS Pro and ArcMap for teaching Introduction to GIS courses and for research collaborations with students and faculty at UMass Amherst.

Java: Used the Java language to build agent-based models of bark beetles, forest growth and succession, forest management, and for processing large climate data sets.

Cluster Computing: Experienced with staging and executing large-scale simulation studies using cluster computer facilities at the universities of Oregon and Minnesota and Argonne National Laboratory.

Research Design: Designed and executed laboratory, field, and greenhouse experiments in industry and educational settings. Completed formal coursework in experimental design.

Statistical and Spatial Analyses: Highly experienced with selecting, implementing, and interpreting simple to complex statistical models in both Frequentist and Simulation contexts. Experienced with using spatial statistics, spatially aware regression, and other spatial modeling techniques.

Plant Identification and Preservation: Experienced using numerous tools for identification such as dichotomous keys and online/electronic tools, and skilled in creating herbarium specimens.

EDUCATION

Master of Applied Geospatial Information Systems and Technologies **Expected 2026**
University of California, Los Angeles

Doctor of Philosophy **2014**
Plant Biological Sciences, **University of Minnesota Twin Cities**, Saint Paul MN

Bachelor of Science **2006**
Biology, **Bowling Green State University**, Bowling Green OH