**STATEMENT OF RESEARCH OBJECTIVES**

I am writing about my desire to pursue my master’s degree in the College of Forestry at Oregon State University. My long term plan is to become a tenure track Professor engaged in innovative and meaningful research. One of the reasons I am applying to the College of Forestry is the exciting variety of research available in the College and the innovative techniques being utilized to conduct this research.

**Goals**

I have a number of goals that I hope to accomplish during pursuit of my master’s degree. The first is to more clearly define my research interests. I hope that my research will open up opportunity to continue this work in pursuit of my PhD. The second is I hope to be active in the College getting to know faculty, staff and other students. Third I hope to pursue research that has the opportunity to be published. Fourth, I hope that I can begin to pursue and bring in funding. As a Professor I would want to have a research lab where I am able to bring in funding and create opportunity for graduate and undergraduates students to work with. To accomplish these goals I need to be focused and prepared.

**Skills**

My background has a skill set that I see as containing both strengths and weaknesses to me becoming a graduate student in the College of Forestry. I feel that my intellectual curiosity, enthusiasm and desire to become a Professor will really help me to do well as a graduate student in the College of Forestry. The strengths I bring include research skills gained while a master’s student in the College of Engineering.

**Research Interests**

**My Background**

**FORESTRY**

**Please provide a short paragraph (limit 100 words) describing the characteristics that suit you to graduate school. \***

There are a number of reasons I feel that I would be suited for graduate school. One of the major reasons is that I have successfully completed a graduate level master’s degree in the College of Engineering and also my MBA. I also have experience working as a teaching assistant and instructor at OSU and LBCC. Another major reason is that my goal is to become a professor and I would bring the desire to do well academically, find my research focus, publish, attend conferences and become an active and engaged member of the College of Forestry.

**Please provide a description of any research experience you've had, your responsibilities in that research and the skills and knowledge you gained from that experience. \***

The primary research experience I gained was while pursuing my master’s degree in the College of Engineering. My research involved developing radiation detection software and was funded through the Nuclear Regulatory Commission. It was during this time that I gained my passion for research, software and innovation that I hope to bring to the College of Forestry.

The first major responsibility of my research included working in a lab collecting data from a number of radiogenic isotopes. I utilized this data and existing research to develop algorithms for the decay that could be modeled visually as a function of input parameters. The second major component of my research was developing the actual digital radiation detection software.

I understand the nature of this research has some differences to research I would pursue as in the College of Forestry but I am confident a lot of the skills and knowledge would transfer over. I hope to continue to have a focus on utilizing computational methods throughout my academic career. Some specific skills include my experience and work in a scientific lab setting gathering data and analyzing it. My research required learning about and utilizing complex scientific equipment in a safe and careful manner. I also became a Teaching Assistant for a number of undergraduate and graduate classes that utilized this lab. My software skills included a range of languages, databases, frameworks and tools including Python, Java, R and JavaScript.

The next major component of my research experience came during pursuit of my MBA. I worked with a team to develop a business plan for Coyle Design. He developed unique wood products including bicycle helmets. During this time the skills I learned were more related to team work, project management and innovation. I also took a number of research based courses including Statistics 511, Statistics 512 and a number of graduate level research methodology courses.

**Please provide a description of any paid or volunteer work experiences you've completed. Describe your responsibilities, the skills or knowledge you gained through the experiences and how they contribute to your preparation for graduate school. \***

There are three main work experiences I have had since graduating that have prepared me for graduate school including working as an Instructor at OSU and LBCC, a Programmer Analyst at OSU and as a Software Developer at Cambia Health Solutions.

**Instructor**

I have worked as a Teaching Assistant and Instructor at both OSU and LBCC. My responsibilities included designing all the course curriculum and instructing courses. Coming into graduate school I would be able to bring in this experience while continuing to learn. Another major skill that I feel will really help me is that I have learned the ability to think more deeply about subject matter. When I would prepare for each class I began to think more about the complexities of subject matter, challenges to this knowledge and to pursue a far greater and deeper understanding. Coming back as a researcher and student I feel that these skills will help me to do better academically and also to be a far more effective researcher.

**Business Analyst**

I also worked at OSU in the Office of Student Life in the role of a business and programmer analyst. I worked directly with the Dean of Student Life on a major assessment of the Career Development Center. The Department had kept little track of their demographic and financial records and I was tasked with developing a report of the past five years of this data. I gathered all of the scattered data into a relational database and then utilized Java and Python to process and analyze it. I gained a lot of skills working with and simplifying large data sets. I feel this role helped me really develop my love and ability to understand and work with complex and giant databases.

**Cambia Software Developer**

I currently work as a software engineer at Cambia Health Solutions. My responsibility is working in an Agile Development Environment where I am helping to migrate extensive legacy code into smaller components. I also handle tickets from business users for errors found in the software. I have gained a lot of knowledge from this position. The first is being more comfortable working on massive code bases and troubleshooting it. I have also gained experience managing and planning a large scale project that involves multiple teams. There are a number of skills I feel would translate from this position to my ability to be successful as a graduate student in the College of Forestry. The first would be the ability to bring in computational methods to my research and to the team I am working on. I feel comfortable utilizing C, Python, Java and R for scientific research.

All three of these jobs have also strengthened my ability to work independently and with teams. I also have strengthened my ability to work directly with a busy graduate adviser. For instance, I have gotten better at sifting out what are important questions and milestones to bring up with my adviser.

**Please provide a description of the research areas that interest you and any ideas for specific research that you have formulated (seehttp://fes.forestry.oregonstate.edu/research).**

My goal is to pursue a master’s degree in the Forest Ecosystems and Society Track. I am particularly interested in Forest, Wildlife and Landscape Ecology; Integrated Social and Ecological Systems and the Social Science, Policy and Natural Resources focuses. I am particularly interested in research with an ecological focus. I will briefly discuss some of the research being conducted by faculty that I find fascinating and how I feel my background could be utilized in their research.

I am interested in the research conducted in the Integrated Social and Ecological Systems focus. I am drawn to the complex intersection of human behavior and natural ecological systems and the meaningful and important nature of the research. I also am really drawn due the complexity of this intersection and how important developing new computational and statistical methods and tools can be.

One of the Labs that stand out to me conducting this type of research is the Betts Forest Landscape Ecology Lab led by Professor Betts. I am drawn to the use of computation and statistical models to understand complex ecological systems. For instance, the research looking at species distribution as a function of both climate change and land use change is both meaningful and complex. If I were to work with him future research I would be interested in expanding upon this research, utilizing new computational methods and creating new ways to make these methods easier to utilize for other future research.

I am also interested in the research being conducted by the Forests, Livelihoods, Institutions, and Governance (FoLIAGe) Research Group led by Professor Hajjar. This research has a stronger focus on the financial impacts of these social and ecological interactions. What draws me is during my MBA my research had a strong focus on innovation and entrepreneurship. This included working as an Instructor in the College of Business and the College of Agriculture Science focusing on small businesses and entrepreneurship. These are just two examples but I find a lot of research conducted by faculty to be very fascinating and listed them below.

OLD

I do however, have a strong focus on the research tools and methodologies I hope to integrate into my research.

One of the reasons I am applying at the master’s level even though I am interested in pursuing a PhD is that I want more time to define my research goals.

**Please provide a list of any awards or recognition you've received.**

**Achievement Rewards for College Scientists**  2010

**Fellow**

* Nominated by Faculty and Selected for ARCS Fellowship providing $6,000 per year fellowship

**Grant Winner for Digital Radiation Software Design** 2008

* $8,000 dollar grant for software design

**Nuclear Regulatory Commission Research Grant** 2008-2010

* Full tuition and .49 Salary

**National Science Foundation**  2008

* Honorable Mention for original Thesis Proposal which changed

**Legacy Health System Scholar** 2005

* Nominated by faculty and selected for Legacy Health System Scholarship

**Dosimetry Group Project Manager** 2008

* Graduate representative of Dosimetry Project for NE/RHP Dosimetry 490/590

**US Department of Energy Scholarship for Nuclear Engineering/Radiation Health Physics** 2005

* Interviewed and was chosen for an undergraduate scholarship

**Mortar Board National Honor Society**  2004

* Nominated for and selected to be involved in Mortar Board National Honor Society

**Please provide a list of potential major professors in our program with whom you have communicated (e.g., in person, by phone, or by email) and describe any agreements you have come to with them. See http://fes.forestry.oregonstate.edu/graduate-programs/your-major-professor. If you have not communicated with any potential major professors please indicate that as well.**

Currently I am speaking with both Professor John Simonsen and Professor John Nairn. We will be meeting the first week of January to discuss their research and my interests. I am excited to meet with them both and would love to work with them but am not sure if my background in chemistry is strong enough for the research they are currently engaged in. I am planning to reach out to more faculty during Winter Term.

**Please provide a list of potential major professors with whom you would like to work. See** [**http://fes.forestry.oregonstate.edu/people/major-advisors**](http://fes.forestry.oregonstate.edu/people/major-advisors)

**Labs**

Forest and Rangeland Ecosystem Science Center (FRESC)

* Heavy data and computer focus
* Perakis, Steven

Forest Animal Ecology Lab

* Jim Rivers

**Forest Landscape and Landscape Ecology**

**Labs**

* TERRA – PNW
* LARSE
* H.J. Andrews Experimental Forest and Long-Term Ecological Research Site
* Forest Animal Ecology Lab
* Betts Forest Landscape Ecology Lab
* Forests, Livelihoods, Institutions, and Governance (FoLIAGe) Research Group

**Bailey, John**

**Meg Krawchuk**

**Chris Still**

**Mark Harmon**

**Barb Lachenbruch**

**Steven Perakis**

**Jim Rivers**

**Dana Warren**

**Steve Strauss**

**Ashley D'Antonio**

**Integrated Social and Ecological Systems**

**Matthew G. Betts**

I am interested in working with Professor Betts. What draws me to his research is his use of computer science and mathematics to understand and explore ecological systems.

**Lisa Ganio**

I am interested in Professor Ganio’s work utilizing quantitative and data driven methods to solve ecological problems.

**Reem Hajjar**

**Michael Paul Nelson**

**Badege Bishaw**

**Ian Munanura**

**Emily Jane Davis** \*I don’t think she takes students