

**FLSA Status:** Exempt

**Reports To:** Director of Engineering

**Location:** WDS Headquarters, Bozeman, MT

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### **Purpose and Scope of Position**

The Fire Scientist at Wildfire Defense Systems (WDS) is a member of the Engineering Services Division, Fire Science Department. This is an entry-level to early career position, appropriate for someone with a fire-science related degree and an proficiency with fire growth models such as FARSITE and FlamMap. This role requires education, knowledge and training in wildfire behavior and wildfire growth modeling. The person may also possess a rudimentary understanding of wildfire weather monitoring and modeling. This person will utilize their skills to support WDS Field Operations and the wildfire consulting division. This position requires a technologically savvy individual with sufficient education, training and experience to successfully integrate wildfire modeling into the field operations portion of the company. This person will also use fire growth models to assess the probability of ignition of structures due to wildfire, ultimately helping WDS protect communities impacted by wildfire around the US.

### **Organizational Relationship**

- This position reports to the Director of Engineering
- This position will be an individual contributor
- This position will work closely with Field Operations, Data Science, Wildfire Protection Engineering (WPE), and other departments as needed

### **Duties and Responsibilities**

- Fire Behavior Model Implementation [50%]
  - Utilize existing fire growth modeling software to develop workflows that incorporate information from fire growth models into the decision-making of Field Operations throughout the fire season.
  - Use GIS software and Google Earth to map fire perimeters and compare actual fire perimeters to those produced by the fire growth model.
- Operations Optimization [35-45%]
  - Work with Field Operations, WPE and other departments as needed to evaluate the effectiveness of home protection actions to reduce wildfire risk to properties.
  - Work with Field Operations, WPE, and other departments as needed to optimize existing strategies and/or develop new strategies or operational procedures to mitigate wildfire risk on properties.
- Fire Science Consulting [5-15%]
  - Work closely with the Data Science team to contribute to the development of models of

wildfire risk factors related to structure ignition. Assist Data Science with an understanding of input variables for the development of wildfire growth model.

- Act as a consultant on various company projects when other departments require a fire science Subject Matter Expert (SME).
- Act as a consultant and provide expertise on fire behavior as well as produce fire growth models for external clients to assist with wildfire mitigation planning reports for client properties.

**Basic Qualifications (i.e. education, certifications, years of experience, etc.)**

- Completion of a Master of Science degree or higher in fire science, fire management, forestry, physics, or other fire-related field of study.
- Preferred: At least two (2) years of specialized experience in wildfire growth modeling, wildfire management, fuels management, wildfire dynamics, and/or spatial wildfire analysis.
- Experience with the use of fire growth models to predict rate of spread and direction of spread of wildfires. Must be experienced in the utilization of FARSITE and/or FlamMap fire growth models. Experience with WindNinja is desirable.
- Knowledge of fire behavior in a variety of types of fuels, and how factors such as weather, terrain and forest management activities influence wildfire behavior.
- Preferred: Experience with prescribed burns, either actual field implementation of prescribed burns or fire growth modeling of prescribed burns.
- Preferred: Previous wildland firefighting experience and completion of NWCG qualifications for Firefighter Type 1 or higher.
- Competency in the standard suite of Microsoft Office products (i.e., MS Office Suite, Excel, Word). Experience with Microsoft Power BI is desirable.
- Preferred: Experience in the use of Python, R, and/or C++ in the development of custom models, statistical analysis, and other custom applications. Expert knowledge of these programming languages is not necessary.
- Experience in the acquisition and use of spatial information and data sets. Experience with ArcGIS and associated tools.
- Experience with data collection, data analysis and statistical analysis methods.
- Ability to speak effectively before groups of employees, prospective clients, and company executives.

**Knowledge, Skills, Abilities, & Personality Characteristics**

- Analytical Skills
  - The ability to observe, evaluate, summarize, and apply meaningful data in the problem-solving process. The level of logical reasoning necessary to connect required actions to desired outcomes. The ability to forecast events based upon current situations. Demonstrated skill in generating alternative solutions to problems.
- Innovation

- The ability to adapt to fast-changing environments. Willingness to take risks and to consider new approaches to improve the organization's competitive position.
- Attention to Detail
  - The level at which tasks are performed carefully, accurately, and in accordance with specific instructions. Consistency of work quality and compliance with standards, requirements, and expectations. The tracking of numerical data and detailed organizational information, and the careful application of grammar, spelling, and punctuation rules.
- Decision-Making/Judgment
  - The ability to make prudent decisions that are timely, well-researched, and reflect awareness of impact.
- Initiative
  - The ability to perform job responsibilities independently and responsibly. The ability to proactively complete tasks, solve problems, improve processes, enhance products, and/or extend services within assigned range of authority.
- Written Communication
  - Ability to write memos, letters, agendas, e-mails, proposals, and documents that communicate ideas clearly, accurately, and with proper grammar. The level at which written documents support effective operations and reflect the company's professional image.
- Organizational Relations
  - The degree to which the employee collaboratively works with other internal departments, agencies, and/or outside organizations. The level of response to customer requests, both internally and externally. Anticipation and control of obstacles.

*This job description should not be construed as an exhaustive statement of duties, responsibilities, or requirements, but a general description of the job. Nothing contained herein restricts WDS rights to assign or reassign duties and responsibilities to this job at any time.*

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**Employee:**

Print: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**Supervisor:**

Print: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**Department Head or Executive:**

Print: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_