# Eagle Behavior and Risk Modeling for Wind Energy
## March 29, 2022
### Note: All times in Mountain Standard Time

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| **9:00 am** | Project overview (5 min) – Raphel Tisch / Joy Page, DOE<br>Project team introductions (5 min)<br>Overview of behavioral modeling framework (5 min) — Eliot Quon |

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| **9:15 am** | **Mesoscale Modeling**<br>● Wind Integration National Dataset (WIND) Tool Kit<br>● Atmospheric data retrieval example<br>**Speaker: Caroline Draxl, NREL** |
| **9:25 am** | **High-Fidelity Microscale Modeling of the Atmosphere**<br>● Real flow modeling across landscape–facility scales of Top of the World<br>● Idealized flow modeling: orographic updrafts vs. thermal updrafts<br>● Development and validation of improved updraft models<br>**Speaker: Regis Thedin, NREL** |
| **9:35 am** | **Simulation-Based Model for Facility-Scale Eagle Presence Mapping**<br>● Stochastic Soaring Raptor Simulator (SSRS) theory<br>● SSRS model validation at Top of the World<br>● Demo to follow in interactive session<br>**Speaker: Rimple Sandhu, NREL** |
| **9:50 am** | **Heuristic Improvements to SSRS**<br>● Heuristic-SSRS approach<br>● H-SSRS model validation in Appalachia<br>● Demo to follow in interactive session<br>**Speaker: David Brandes, Lafayette College** |
| **10:00 am** | **Data-Driven Probabilistic Model for Facility-Scale Eagle Simulation**<br>● Overview of GPS data<br>● Bayesian modeling theory |

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| | ● Model development and calibration<br>● Track simulation<br>**Speaker: Rimple Sandhu, NREL** |
| **10:20 am** | **Near-Turbine Eagle Tracking**<br>● Overview of IdentiFlight data<br>● Data processing approach<br>● Analysis of movements around wind turbines<br>**Speaker: Chris Farmer, Western EcoSystems Technology, Inc.** |
| **10:30 am** | **Application Example: Siting**<br>● FLOw Redirection In Steady state (FLORIS) design tool<br>● SSRS + FLORIS example<br>**Speaker: Eliot Quon, NREL** |
| **10:40 am** | **Break** |

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| | **Open Q&A with Project Team** |
| **10:45 am** | **We welcome questions and comments regarding:**<br>● Technical approach<br>● Expected project outcomes<br>● Recommendations for next steps |

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| | **Hands-On Code Exploration** |
| **11:15 am** | **GitHub Overview**<br>● Code organization<br>● Installation instructions and resources<br>**Facilitator: Rimple Sandhu, NREL** |
| **11:30 am** | **SSRS**<br>● Overview of model inputs/outputs<br>● Demonstration<br>● Exploratory period<br>**Facilitator: Rimple Sandhu, NREL** |
| **11:45 am** | **Heuristics-based SSRS**<br>● Overview of model inputs/outputs<br>● Demonstration<br>● Exploratory period<br>**Facilitator: David Brandes, Lafayette College** |
| **12:00 pm** | **Open feedback**<br>**Extra time for code exploration** |
| **12:30 pm** | **Adjourn** |