



Mitigating Bias in Retail AI Hiring Tools: A Human-Centered H-A-I-R-E Governance Framework for Low-Wage Hires

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Abstract

Retail companies increasingly use AI hiring tools to improve efficiency in high-volume recruitment for low-wage and entry-level positions. These tools support tasks such as screening, shortlisting, video interviews, and offer roll-out. While such systems can reduce turnaround time, prior research suggests that their routine use may introduce bias, particularly when hiring decisions rely heavily on automated outputs. As a result, organizations face a growing need for reliable and consistent governance frameworks to guide the use of AI in hiring. This study is framed as exploratory qualitative research and incorporates human intervention to examine how AI hiring systems are designed, governed, and implemented. Data were collected through semi-structured interviews and surveys with HR managers, frontline or customer-facing workers, and supervisors, along with an inspection of the algorithm-based hiring system and associated recruitment processes.

The analysis identified gaps in governance related to transparency, accountability, and human oversight in AI-supported hiring. Based on these findings, the H-A-I-R-E framework (Human Oversight, Accountability, Inclusivity, Responsibility, and Ethics) was developed to support organizations in maintaining human review, conducting audits, ensuring inclusive data practices, and promoting ethical hiring decisions.

Keywords: H-A-I-R-E Engineering Framework, Human-Centered Recruitment, Ethical Recruitment, Bias, Fairness

Literature Review

AI In High-Volume Retail Hiring

The technology in recruitment has improved the hiring system in the retail sector for low-wage hires. It enhances decision-making by automating repetitive work and increasing efficiency. AI helps in matching resumes with the job description based on the skills and speeds up the hiring process [1].

Algorithmic Bias In Recruitment Systems

One major issue in recruitment systems is algorithmic bias, where AI systems improvise based on the historical data and past hiring patterns, and provide unfair results. This is a concern that AI tools may unintentionally exclude potential candidates from the hiring process [2]. Moreover, without transparency in AI decision-making processes has raised concerns about accountability, responsibility, ethics, and fairness as the management may not be fully aware of the decision-making [3].

Governance and Ethical AI Frameworks

In existing research, the AI ethics framework emphasizes values like transparency, accountability, fairness, and explainability. AI systems become smarter, independent, and take decision which may create prejudiced or harmful behavior, and managers don't know how to apply ethics in decision-making [4].

Implication For Engineering Design And Education

AI hiring tools are not HR or operational tools, these are engineering products. These products adopt responsible AI design, where human intervention, accountability, inclusivity, responsibility, and ethics are treated as core design requirements. The design of ethical architecture plays an important role as it detects historical and automation bias through audits and keeps signaling HR professionals or hiring managers for intervention, and AI decisions override.

Methodology

Research Design

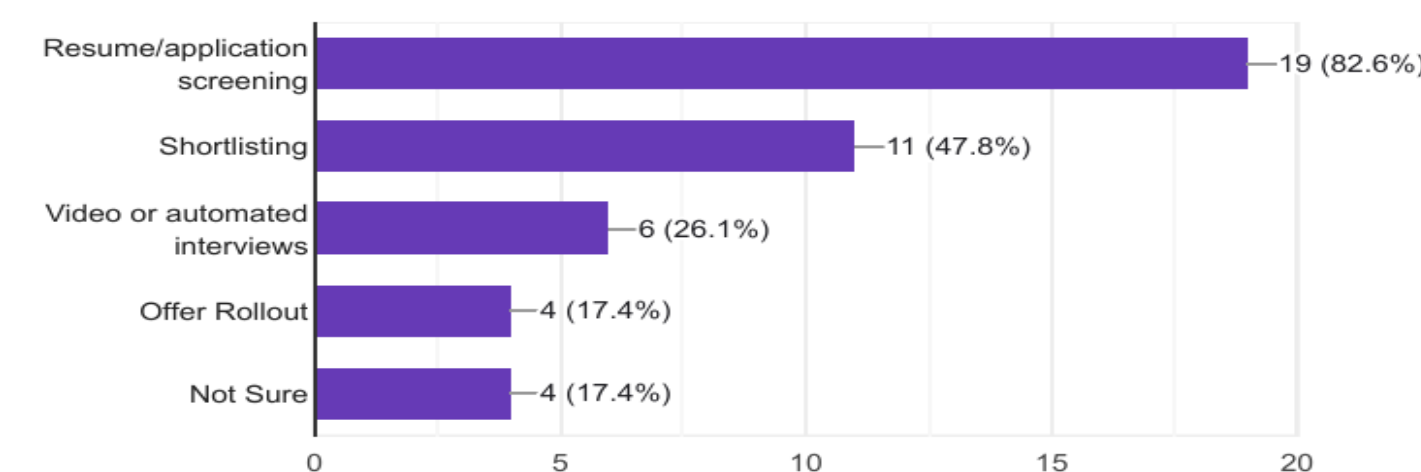
This study uses an exploratory qualitative research design to evaluate bias, governance gaps, and human oversight challenges in the AI hiring system used for low-wage hires in the retail sector. The survey responses from all the stakeholders are captured, which is aligned with prior human-centered AI and ethical governance frameworks.

Qualitative Survey

The research instrument was designed briefly to capture every stakeholder's perception about AI governance and ethical hiring. A total **sample size of n=23** responses were received from multiple stakeholders, i.e., HR & Recruitment managers, Store or Frontline managers, customer-facing employees, and entry-level workers.

Low Transparency Of An AI hiring tool

Usage for an AI recruitment tool for low-wage or entry-level hires is high. The majority of organizations are using AI tools to evaluate applications at the resume **screening (82.6%)** and **shortlisting (47.8%)** stage, and lesser usage of conducting video **interviews (26.1%)** and **offer roll-out (17.4%)**.



Concern About AI Fairness And Bias

The analyzed data show that candidates have raised concerns about unfair AI practices related to wage, immigration status, gender, age, and color. **21.7%** mention **“Yes”**, and **52.2%** indicate **“Not Sure”** due to lack of awareness or clarity, and **26.1%** say **“No”**.

Inconsistent Human Oversight

Job seekers always want human oversight when their profiles are in the hiring process, and they don't trust the outcome if oversight is missing in the hiring process. The study says that **only 17.4%** believe that HR managers double-check the resumes that are rejected by the recruitment tools, but **34.8%** state **“Yes, in some cases”**, **34.8%** mention **“No”**, and **13%** **“Not Sure”**.

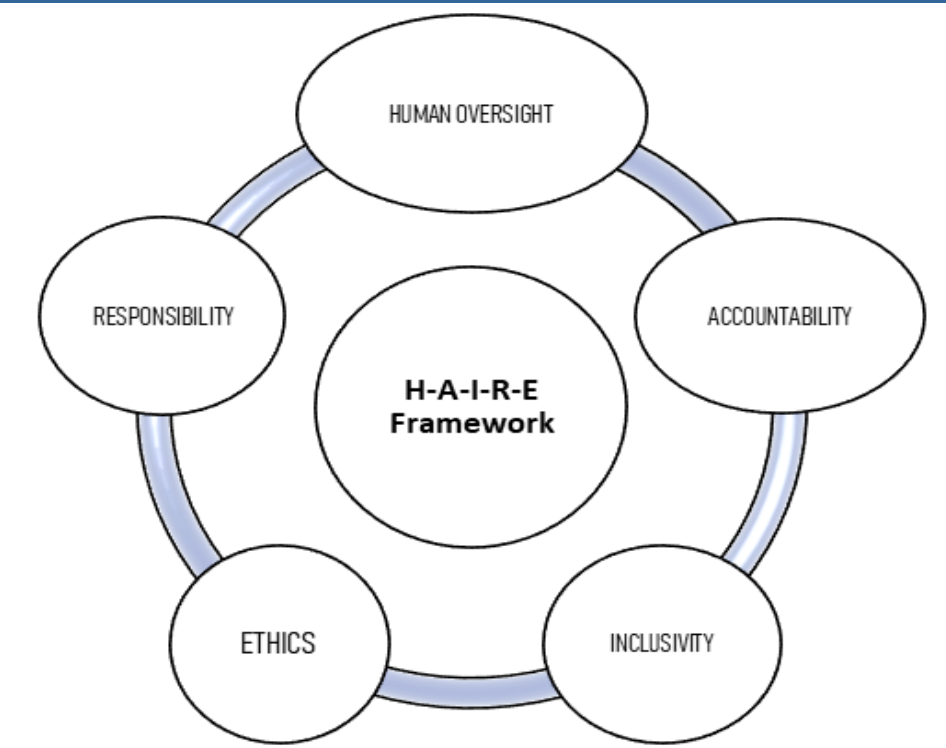
Accountability And Governance Gaps

For the existing governance framework, 43.5% believe a structured AI governance framework is in place, but 43.5% say **“Maybe”**, 13% indicate **“No”**. As per the participants' opinion, 26.1% mention regular audits happen, 17.4% **“No”** audit takes place, and 56.5% are **“Not Sure”**. Regular and timely assessments guarantee the recruitment tool fairly chooses or rejects candidate profiles.

H-A-I-R-E Framework

The proposal of the **H-A-I-R-E Engineering Framework** consists of five characteristics. Together, these five characteristics develop a human-centered framework

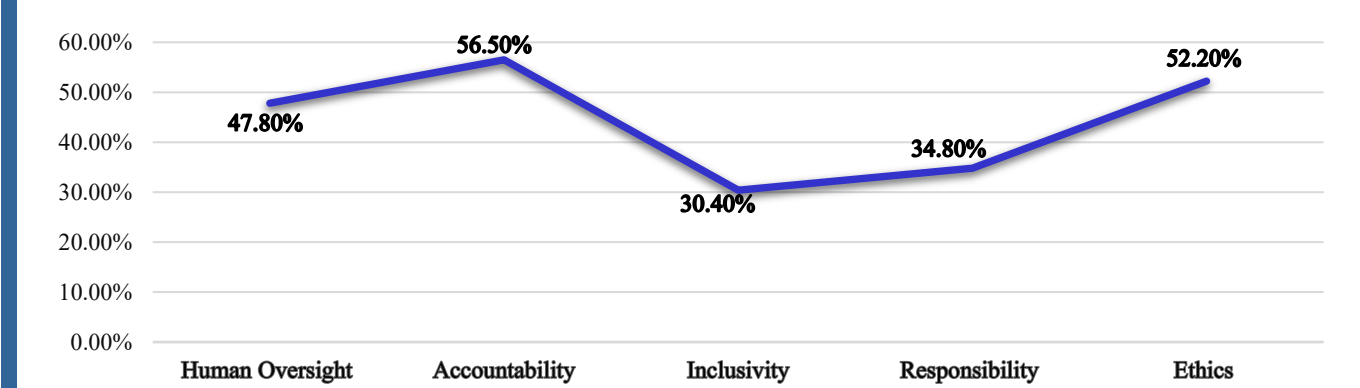
- **Human Oversight:** Human intervention at all the critical decision points, especially for rejected profiles
- **Accountability:** Take ownership of all AI based decision within the company
- **Inclusivity:** Use diverse datasets irrespective of gender, age, race, or immigration status
- **Responsibility:** Commitment to correct the bias or unfair data noticed
- **Ethics:** Align with ethical recruitments, conduct timely audits, and bring fairness



Need Of Structured AI Governance Framework

Ethical guidelines are important to aspirants at each stage of hiring. A majority of research instrument data recommends that it creates trust, fairness, and reduces bias amongst job seekers. The study acknowledges that **65.2%** participants state **“Strongly Agree”**, **26.1%** mention **“Agree”**, and **4.3%** say **“Somewhat Agree”** with the mandate of ethical guidelines in AI hiring tools. A substantial proportion of the stakeholders highlight ethical governance framework reduces bias in low-wage retail hiring.

In the study, the respondent's highlights an importance of the **H-A-I-R-E Framework Characteristics**



Conclusion

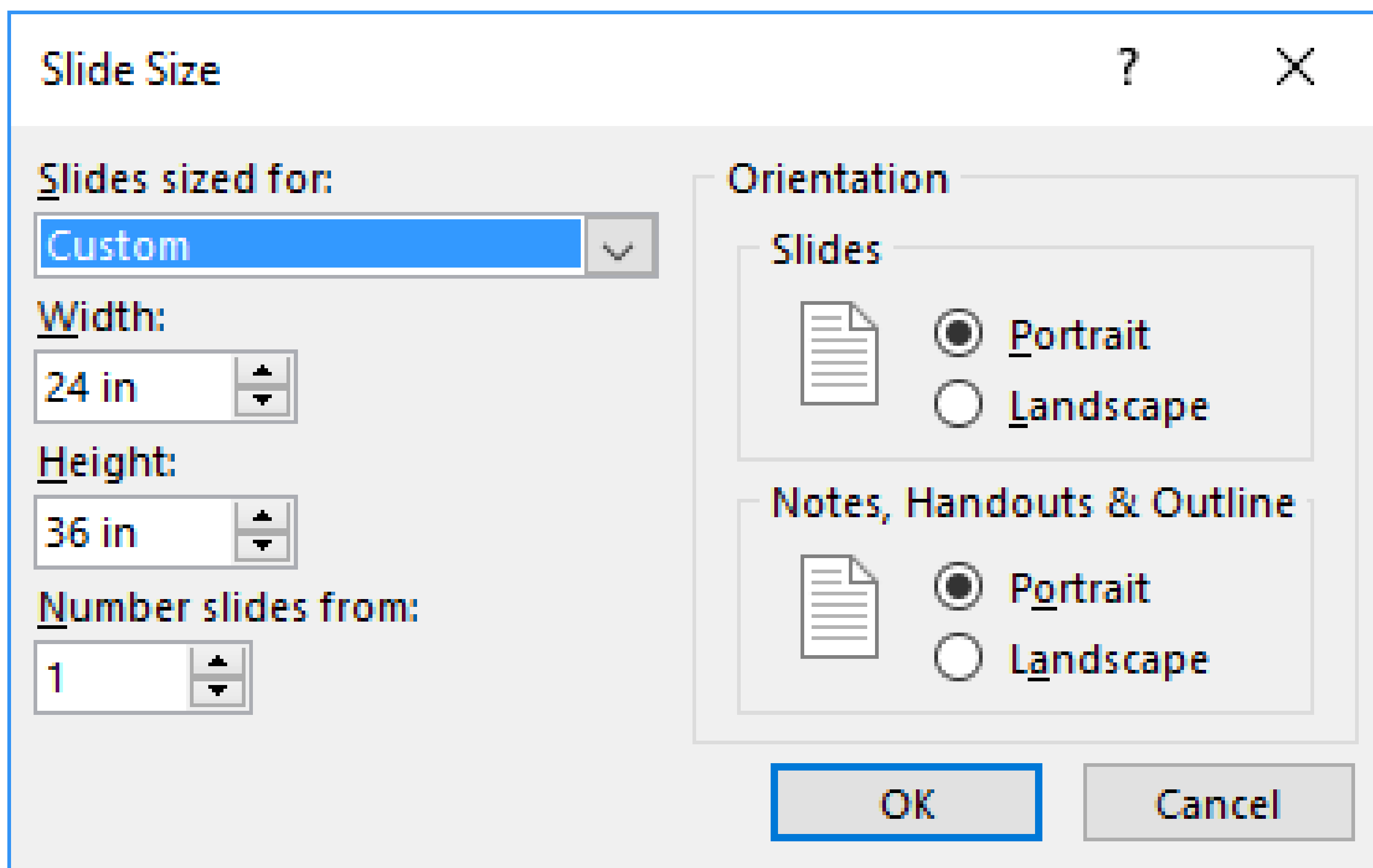
The study highlights ethical and governance challenges in AI tools for low-wage and entry-level hires. Findings also show that limited human oversight, opaque transparency, accountability, and trust in automation tools may cause unfair outcomes. As the AI hiring tool becomes an essential part of the recruitment process in retail, there is a growing risk of perpetuating bias, compromising fairness, and low transparency. The research shows that the H-A-I-R-E engineering framework may address these challenges by implanting human-centered framework for AI based hiring practice. The new framework oversees the AI activities, brings human involvement, takes ownership and responsibility for outcomes, ensures inclusive data practices, and promotes ethical hiring decisions. The engineering framework provide a perfect ecosystem to practice AI governance. These safety measures ensure that they mitigate the risk of discriminatory outcomes. Overall, this research highlights that AI hiring tool needs an H-A-I-R-E engineering framework, which is an ethical and fair structure design that make ready upcoming students and engineers to build trusted, responsible, and socially accountable AI systems.

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KEY TAKE AWAYS FOR STUDENT COMPETITIVE POSTER SUBMISSION

- Use appropriate font and size (bigger, better)
 - Color and images are acceptable
 - Customize Additional Text Boxes, as needed
 - Review poster for correct spelling, punctuation **before** submitting on-line
 - Poster Slide Size **must** be width **24 in** and height to **36 in**
 - Click “Design -> Slide Size -> Custom Slide Size
- Select all parameters as shown in the image below:



ADDITIONAL REQUIREMENT FOR COMPETITIVE POSTER SUBMISSION

1. Submit a video Zoom link (3-5 minutes) where you address these two questions:

What is its *intellectual merit*?

Explain the potential to advance knowledge and understanding within its own field or across different fields. Explain the extent of how the proposed activities suggest and explore creative, original, or potentially transformative concepts.

What is the broader impact? (If applicable)

Explain the degree to which this project could be used to benefit society and/or contribute to the achievement of specific societal outcomes.

Review the “[How to Record a Zoom Presentation](#)” for instructions.