

Bird Cams Lab: Enabling Online, Co-created Investigations

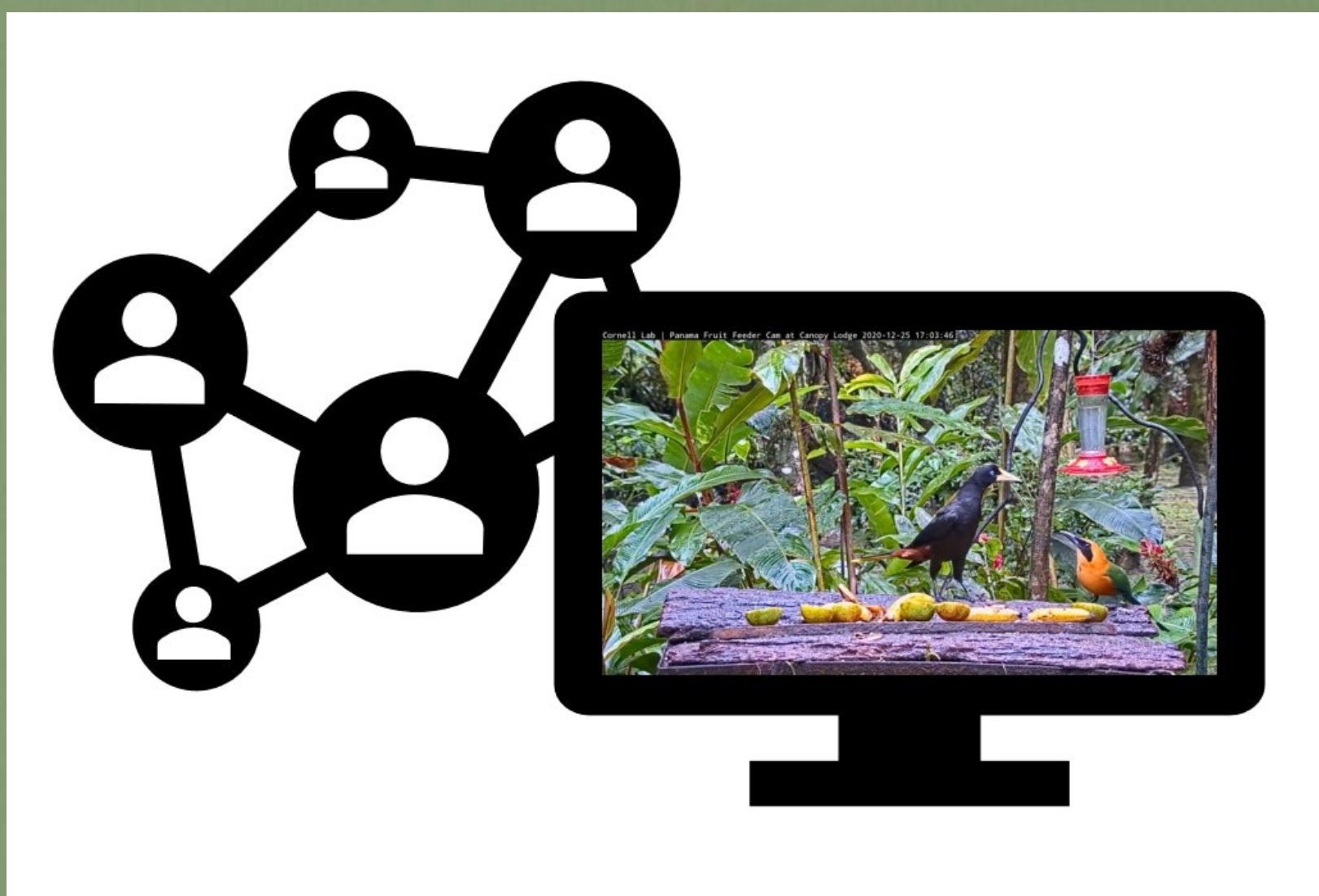
Goals

1. Enable participants to contribute to any or all stages of the scientific process and enhance their learning using an online citizen science platform and live bird cams
2. Generate new scientific knowledge about wildlife
3. Advance the understanding of effective project design for co-created online citizen-science projects at a national scale

"I learned how to craft a question...like what questions to ask...which...is a skill that I've taken into the rest of my life...I have become more practiced in being more aware that other people see things from a totally different perspective...so when I talked to other people...I listened differently...I consider what they find interesting." —Participant

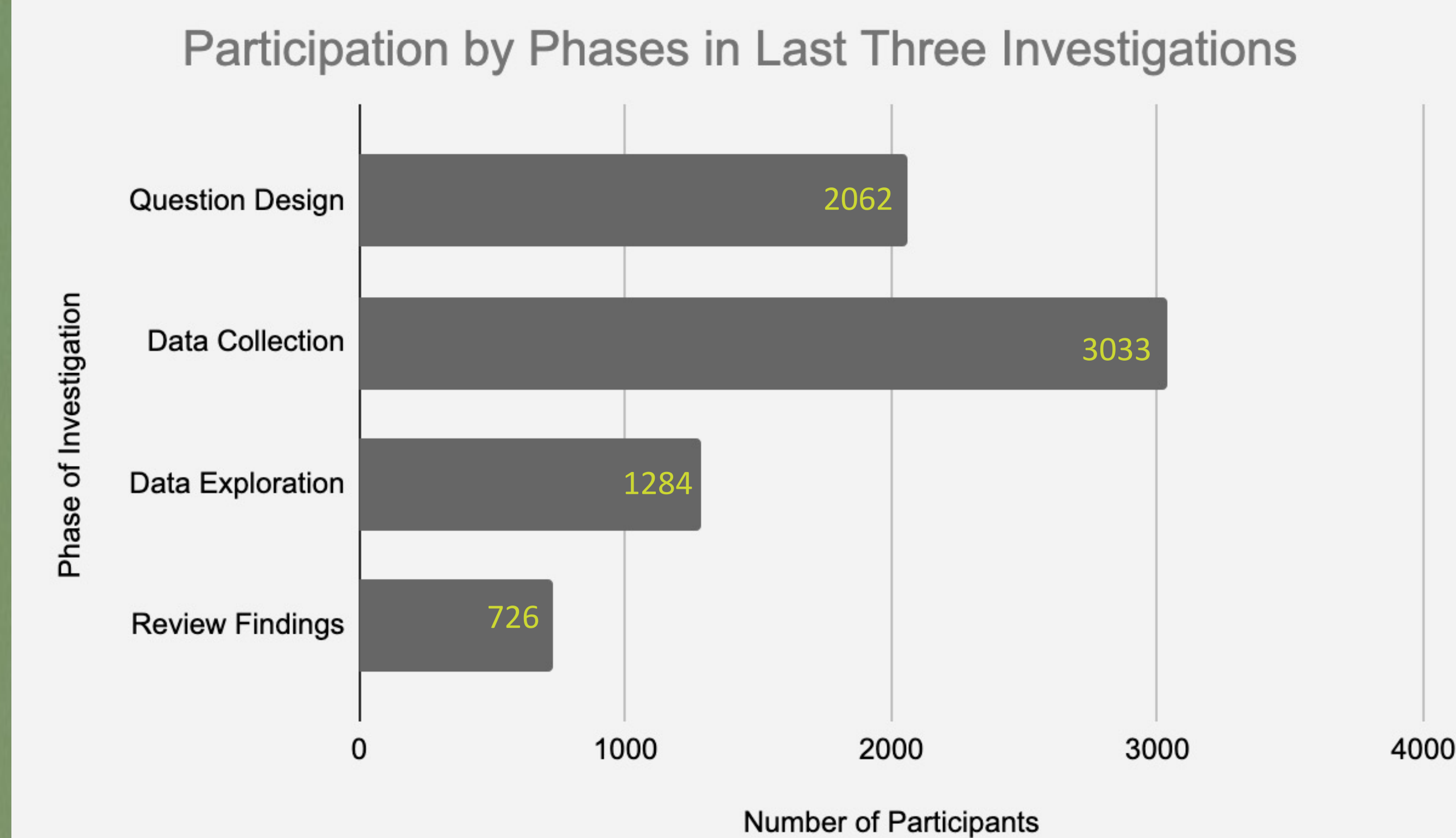
Innovations

- Developed an online system for people to collaborate across the scientific process
- Developed a new tool enabling participants to gather data in real time while watching live streaming cams
- Created interactive data visualizations
- Incorporated live Q&As with scientists
- Participant feedback informed iterative design & practices



Insights

- More than 16,000 people joined the project across six investigations and more than 3,500 actively contributed.
- 82% of contributors joined just one phase, 12% joined two, 5% joined three, and 1% joined four phases
- More than 300,000 cam observations recorded



- Active contributors increased their knowledge and confidence about bird biology and the scientific process, connections to nature, and actions to help birds.
- Engaging the public across all phases of research is beneficial for:
 - ✓ Enhanced learning/behavior change
 - ✓ Inclusivity—inviting people to be a part of the process usually reserved for “experts”
 - ✓ Better/more relevant science inclusive of diverse perspectives

"It is my opinion...when you rely upon one segment of a research project to supply all the questions, you wind up with a jaundiced view of reality. Whereas, if all parties are involved in the process, you will gain a broader range of viewpoints." —Participant

Challenges & Solutions

1) Participants may not feel confident about their contributions as scientific co-creators

- ✓ Provide feedback and learning opportunities to increase confidence (e.g., live Q&A session)
- ✓ Offer a range of activities from passive to active that are inclusive to all
- ✓ Reinforce the value of participants’ contributions in the science process and findings

2) Participants may enter or exit at each phase of an investigation

- ✓ Communicate value of different types of participation
- ✓ Create synchronous and asynchronous activities to foster online community engagement
- ✓ Cater to dynamic participation within and across phases

3) Striking the balance between data quality assurance and participant motivation

- ✓ Determine what are participants’ motivations
- ✓ Simplify research questions such that collecting data is easy and interesting
- ✓ Have multiple participants collect data on the same clips (e.g., Zooniverse); use consensus to increase data quality.



"Although I have pursued a degree in biology, life took me in another path and I have ended up self-educating and availing myself to online resources when possible. I have specific goals and conservation projects in mind that could greatly benefit from professional scientific guidance, but I have been intimidated to ask for help from the scientific community. My recent experience and interactions with the Bird Cams Lab have totally removed that fear and I am more hopeful and confident that I can achieve my goal and make a difference." —Participant

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Principal Investigator Miyoko Chu, Co-PI Tina Phillips and David Bonter (Cornell Lab of Ornithology); Project Staff: Rachael Mady, Charles Eldermire, and Benjamin Waters;

External Evaluators Jennifer Borland and Claire Quimby (Rockman et al); Community Partner: Laura Atwell