

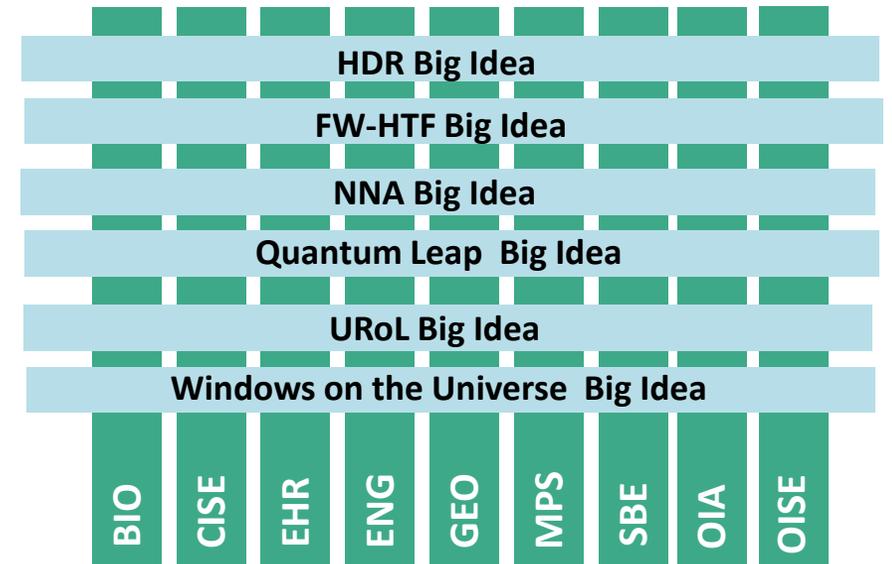
NSB Committee on Strategy Open Session

- FY2018 Outcome (DiGiovanni)
- FY2019 Request (DiGiovanni)
- FY2019 Planning
 - Big Ideas Stewardship Model (Kurose)
 - Convergence Accelerators
 - Córdova (Intro: What is a CA?)
 - Tilbury (How does a CA work? Launching w/workshops in August 2018)
 - Johnson (Partnerships)
 - Next Generation Big Ideas: NSF 2026 (Iacono)
- FY2020: Upcoming June Retreat to frame FY2020 Submission



Stewardship Model: Principles, Philosophy

- “Stewardship”: a new approach to convergence programmatics, crossing disciplinary boundaries
 - Intellectual direction for a Big Idea managed collaboratively, across all participating organizations
 - Each has a multi-directorate AD group, Steering Committee, PD working group
 - Funding for each managed by one unit on behalf of all
- Foundational Research, Big Ideas versus Accelerators – distinct but connected



Convergence Accelerators: A New Model for Research to Innovation



What is a Convergence Accelerator?

- A new organizational structure intended to leverage external partnerships to accelerate convergent and translational activities in an area of national importance
- A home for application-driven basic research
- Advances ideas from concept to deliverables

Key Characteristics

- Fed by basic research & discovery
- Adopts convergent approach
- Cohorts, integrated teams
- Proactively and intentionally managed
- Seed investment, competition
- Intensive education and mentorship
- Attracts partnerships
- Fixed term



How do CAs differ from Foundational Research?

- CAs are intentional in outcomes, more goal-oriented
- CAs foster a range of approaches, solutions
- CAs feed on the tension between top-down strategic direction and bottom-up creative approaches



Why NSF-Sponsored CAs?

- NSF funds basic research; private accelerators target start-ups
 - We want to accelerate the process of convergent research, yet still have deliverables
- NSF is directed toward outcomes that are not niche areas
 - Achieving the goals will push translation farther, faster
- NSF will convene cohorts of teams with unique skill sets around broad national goals



How will the research in a CA be defined?

- NSF will start with a few “Tracks” that define focus areas within the accelerator
- Each track will have specific goals (outcomes, deliverables)
- NSF will host workshops both to form teams and to solicit additional tracks recommended by the community



Example Accelerator “Tracks”: Harnessing the Data Revolution



- Advanced science data infrastructure that is interoperable and has an open architecture (makes it easier to access and link heterogeneous data products)
- Open Knowledge Network – an open semantic information infrastructure to discover new knowledge from multiple disparate knowledge sources

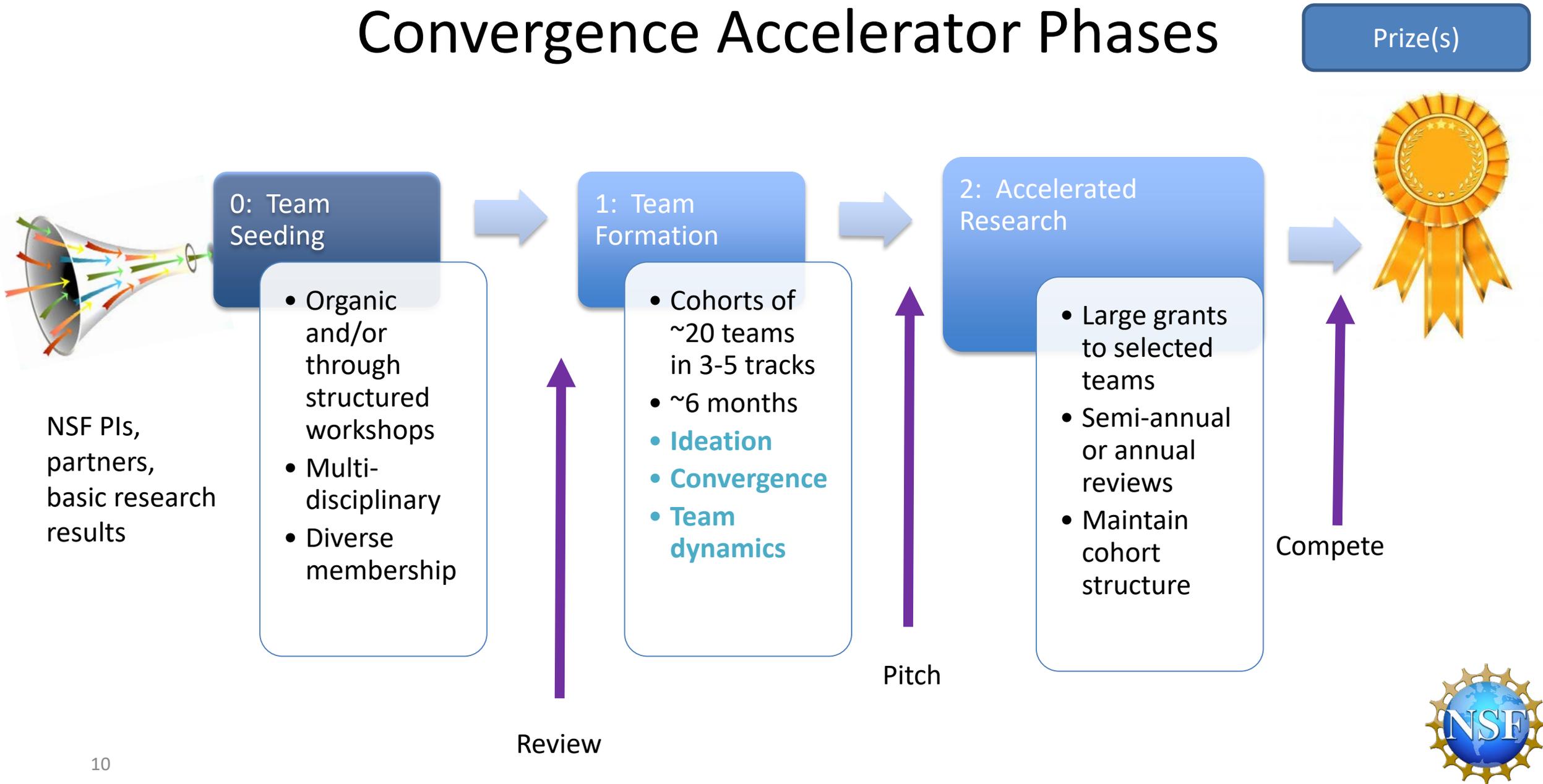


Example Accelerator “Tracks”: Future of Work at the Human-Technology Frontier



- Smart manufacturing environment: Adaptive collaboration between humans and machines using artificial intelligence
- The Instrumented Classroom: Intelligent cognitive assistants in a smart classroom to enhance student learning
- Cybersecurity at scale: Identifying and mitigating vulnerabilities using artificial intelligence

Convergence Accelerator Phases

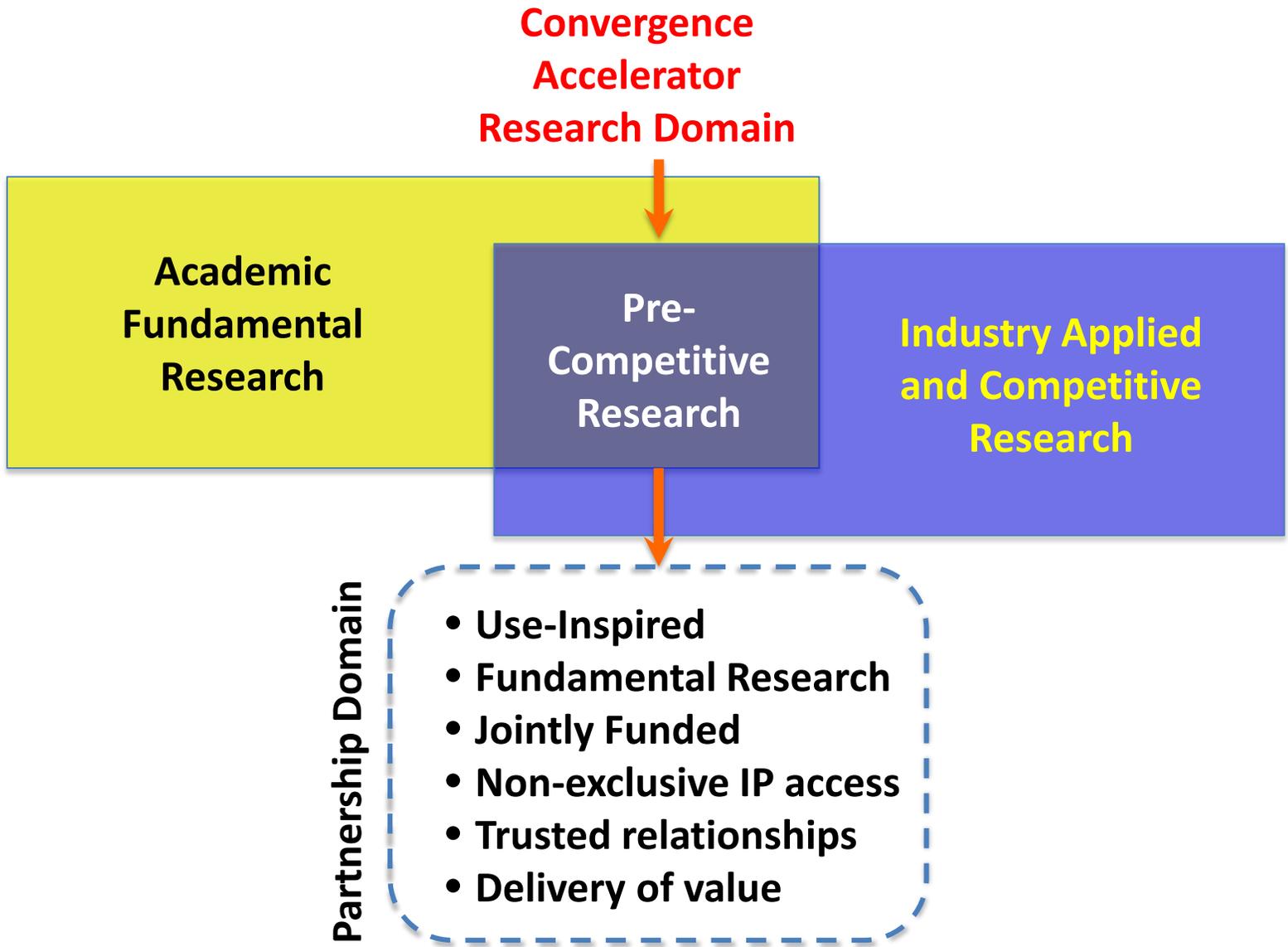


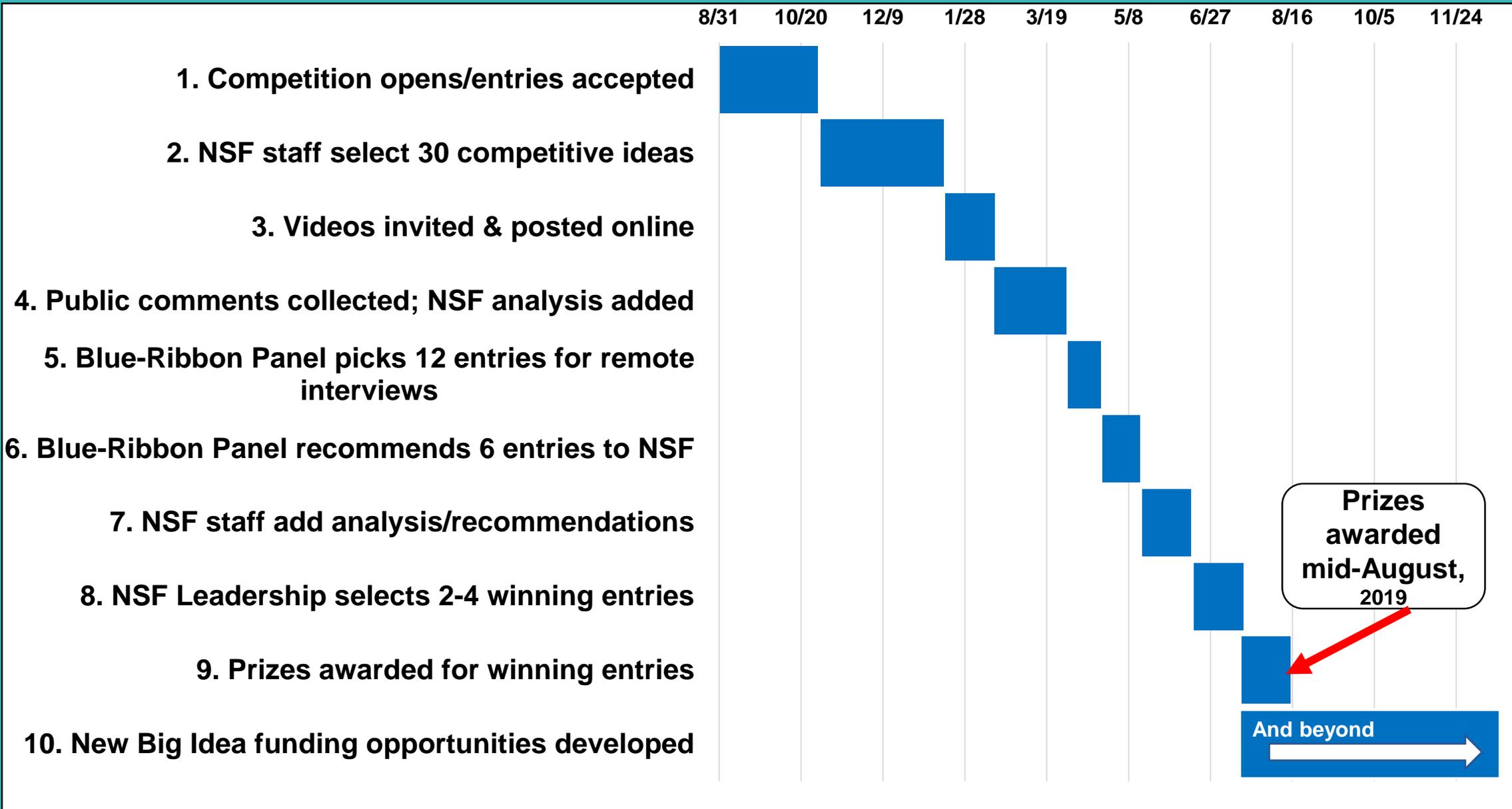
Unique NSF Expertise, combined in new ways, designed to decrease time to discovery

- **Convergence Accelerators build on NSF innovations and best practices**
 - Network model: I-Corps (Teams and Cohorts)
 - Collective Impact: NSF INCLUDES
 - Team Development: Ideas Labs
 - Industry-inspired Workshop on Quantum (Mar. 2018): Industry wants more similar workshops on HDR and FW-HTF topics (and URoL)
- **Convergence Accelerators add new dimensions**
 - Selection by pitch, instead of 15-page research proposal
 - Competition for monetary prizes



Potential Partnership Model for Convergence Accelerators





Prizes awarded mid-August, 2019

And beyond



Backup Slides



Creating Partnerships for Convergence Accelerators

- Define Purpose and Goals of Each Partnership
- Engage Potential Partners
- Create Value Proposition for Each Partner
- Specify Partnership Mechanism (MOU, IAA, Grant, etc.)
- Define Metrics to Assess the Partnership
- Identify Partnership Champion
- Allocate Resources to the Partnership



The Big Ideas Stewardship Model: Implementation

- Shared implementation strategies:
 - Leverage common key components (e.g., education activities)
 - Incorporate evaluation: what will success look like?
 - Employ consistent communications to internal and external stakeholders



- Opportunity to rethink our processes and practices
 - Integrate with Renewing NSF efforts