

High Performance Teams for High Performance Buildings

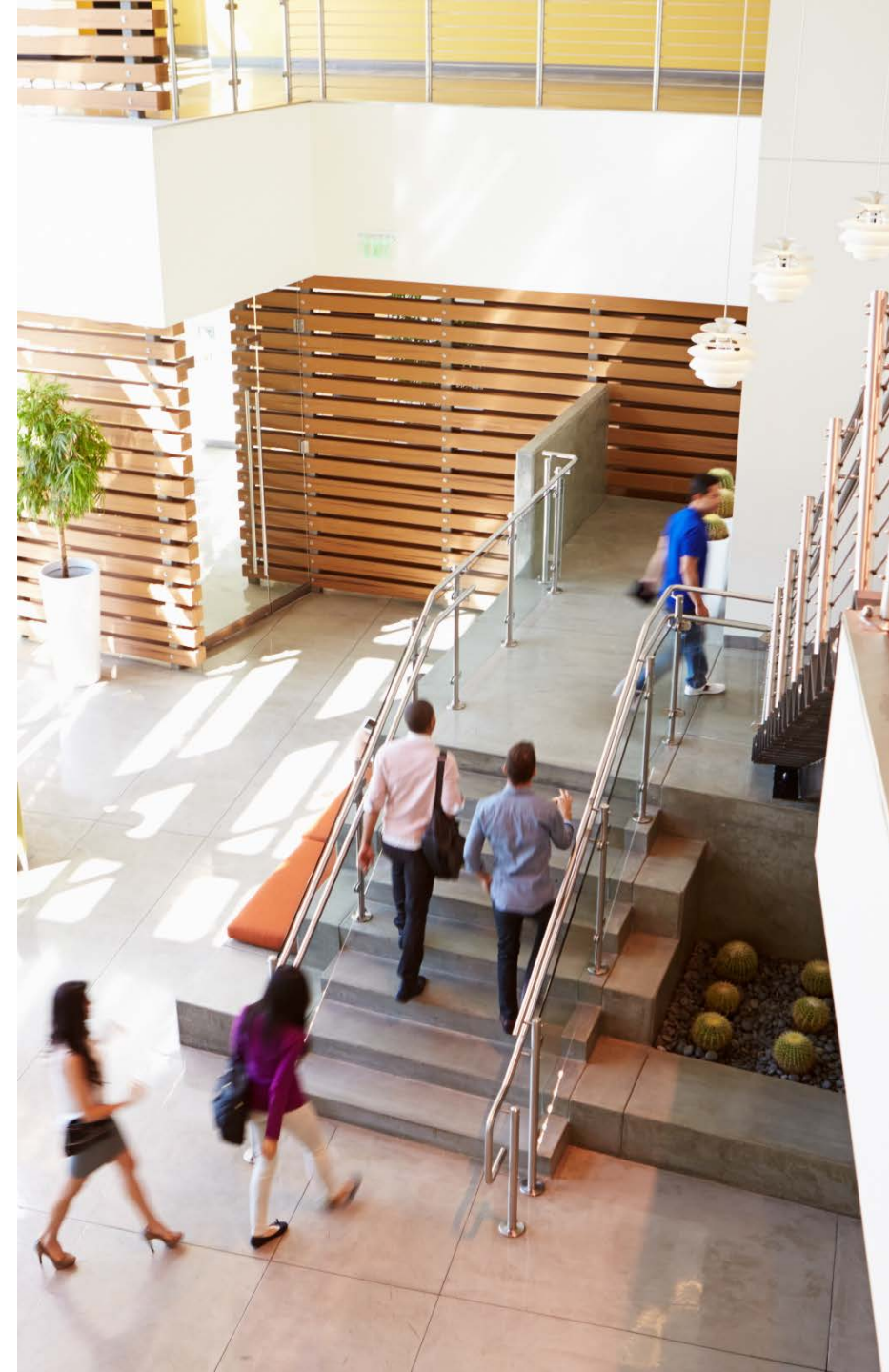
Green Building Lecture Series

10.30.18



**INSTITUTE FOR THE
BUILT ENVIRONMENT**
COLORADO STATE UNIVERSITY

Why do high performance projects so often fall short of their goals?



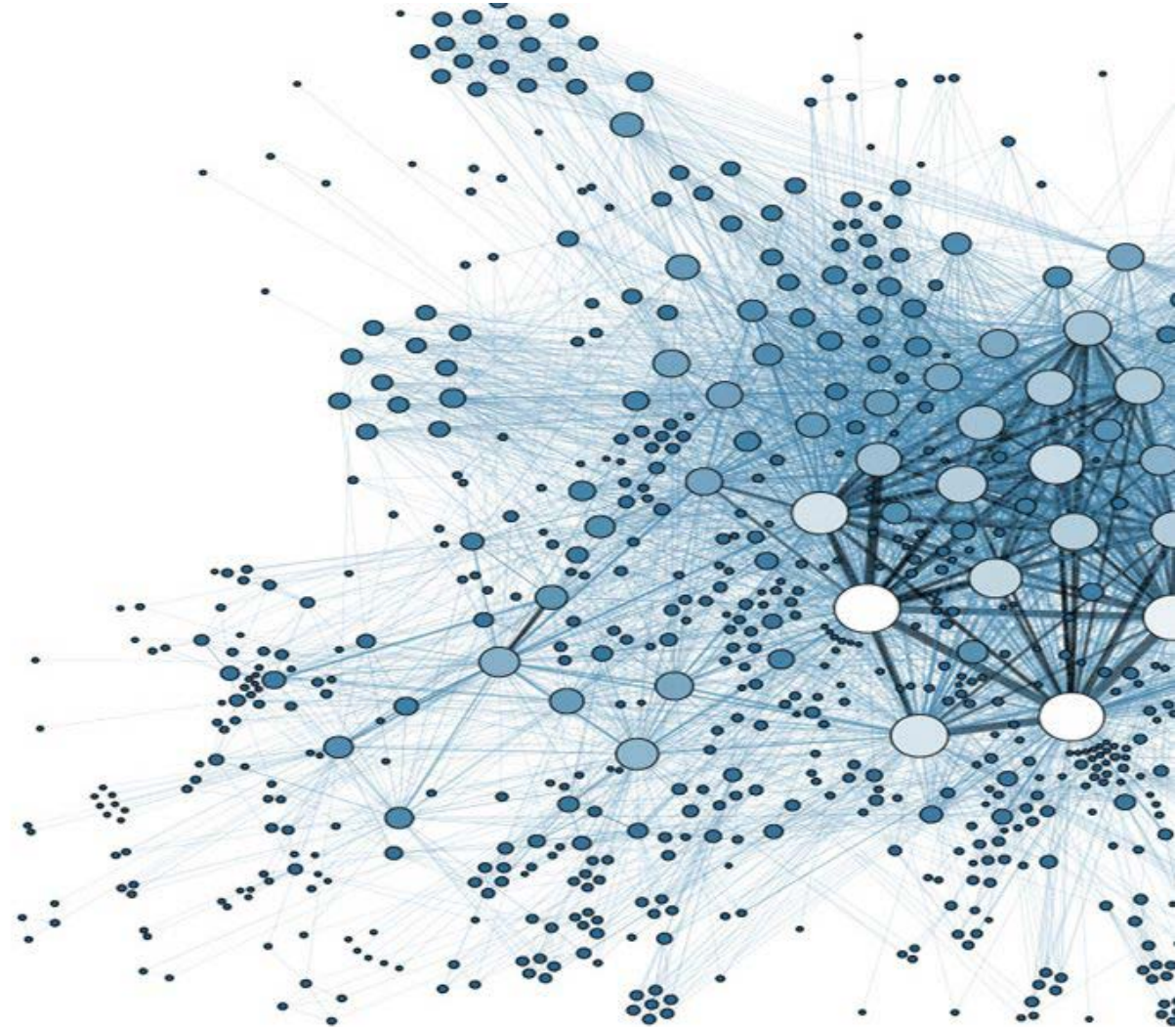
We got tired of watching projects fall short and decided to develop a new approach.



We measured team structure using network science.

Network Science is used to understand

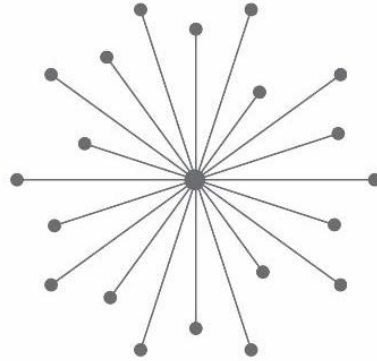
- Social communities
- Professional collaboration
- Power grids
- The Internet
- Epidemics
- Metabolic or cellular processes



Team Network Structures

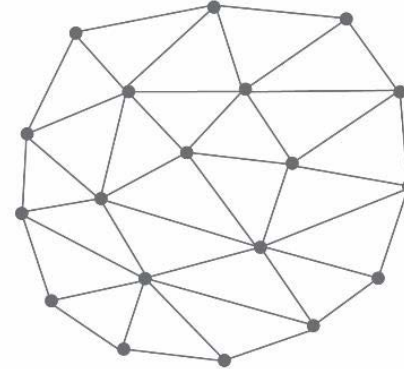
CENTRALIZED NETWORK

Little to no connectivity



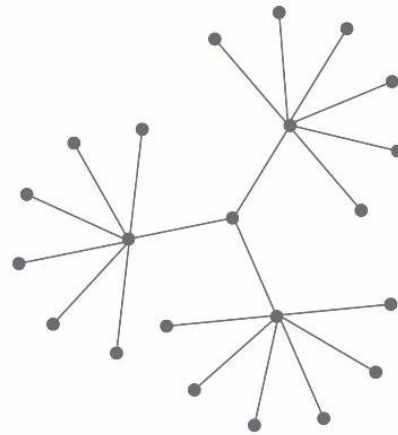
DISTRIBUTED NETWORK

Web in which individual people have multiple connections



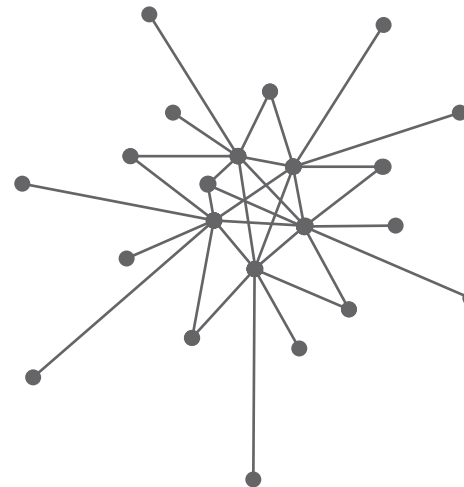
DECENTRALIZED NETWORK

Subgroups connected through central individuals



CORE-PERIPHERY NETWORK

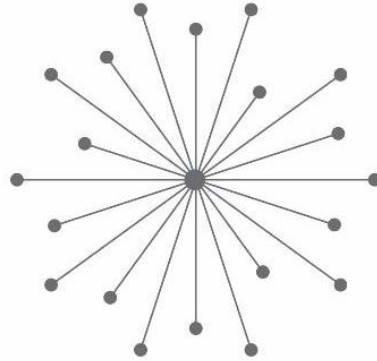
Dense, web-like core connected to tiered, specialized periphery



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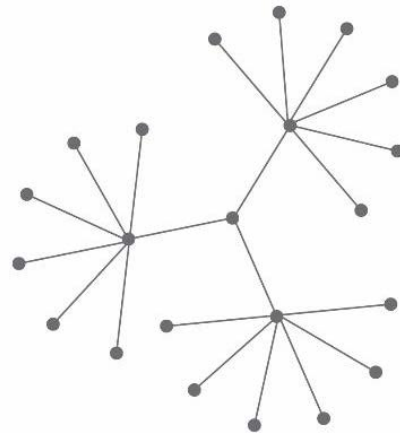
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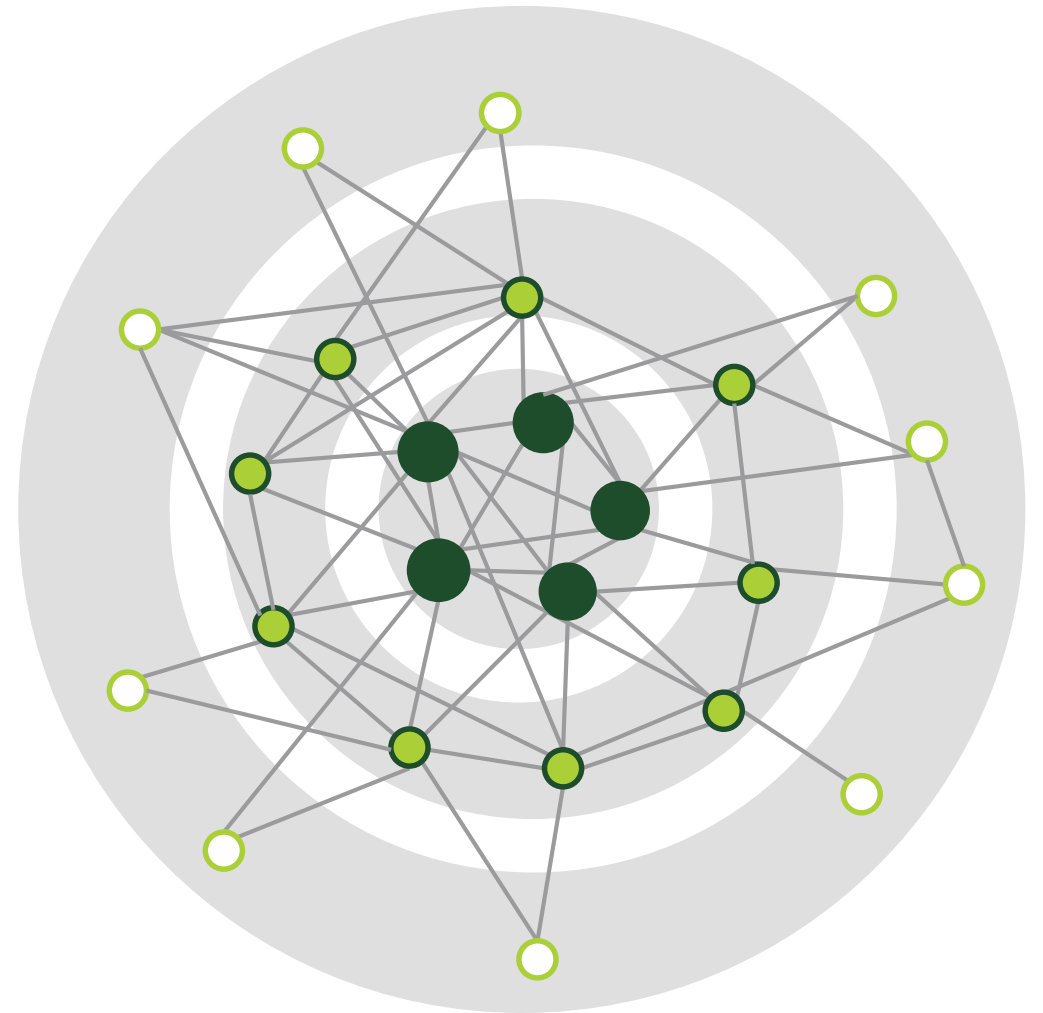


FACT

Innovation happens when new ideas from outside our field or expertise come in and disrupt our standard way of thinking.

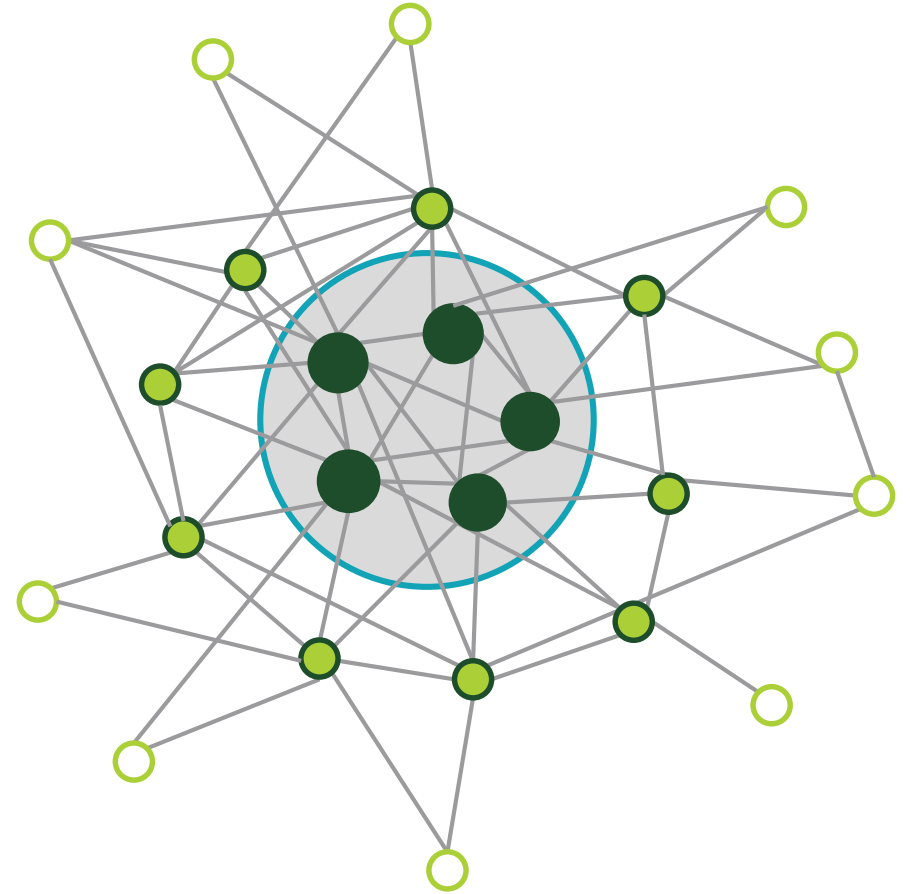
We need connections to diverse team members in order for this to happen.

A project network contains all of the stakeholders involved in a project and organizes them by level of engagement.



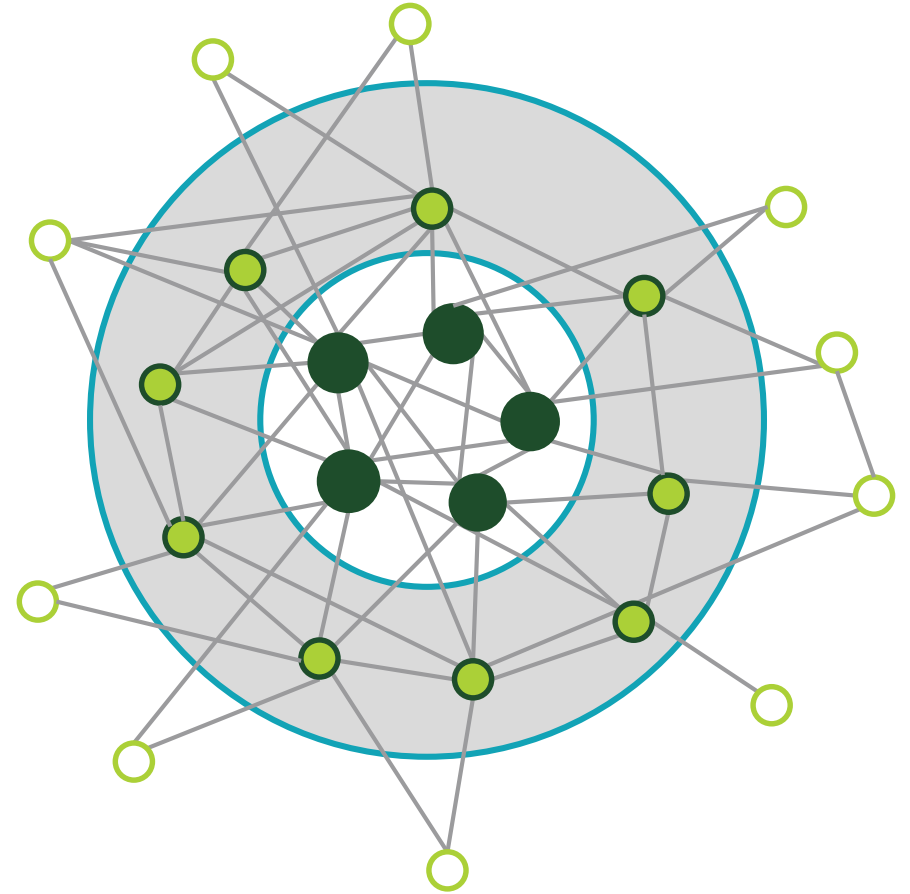
Core Team

- Primary decision makers
- Have authority to make budget spending decisions
- Responsible for project completion



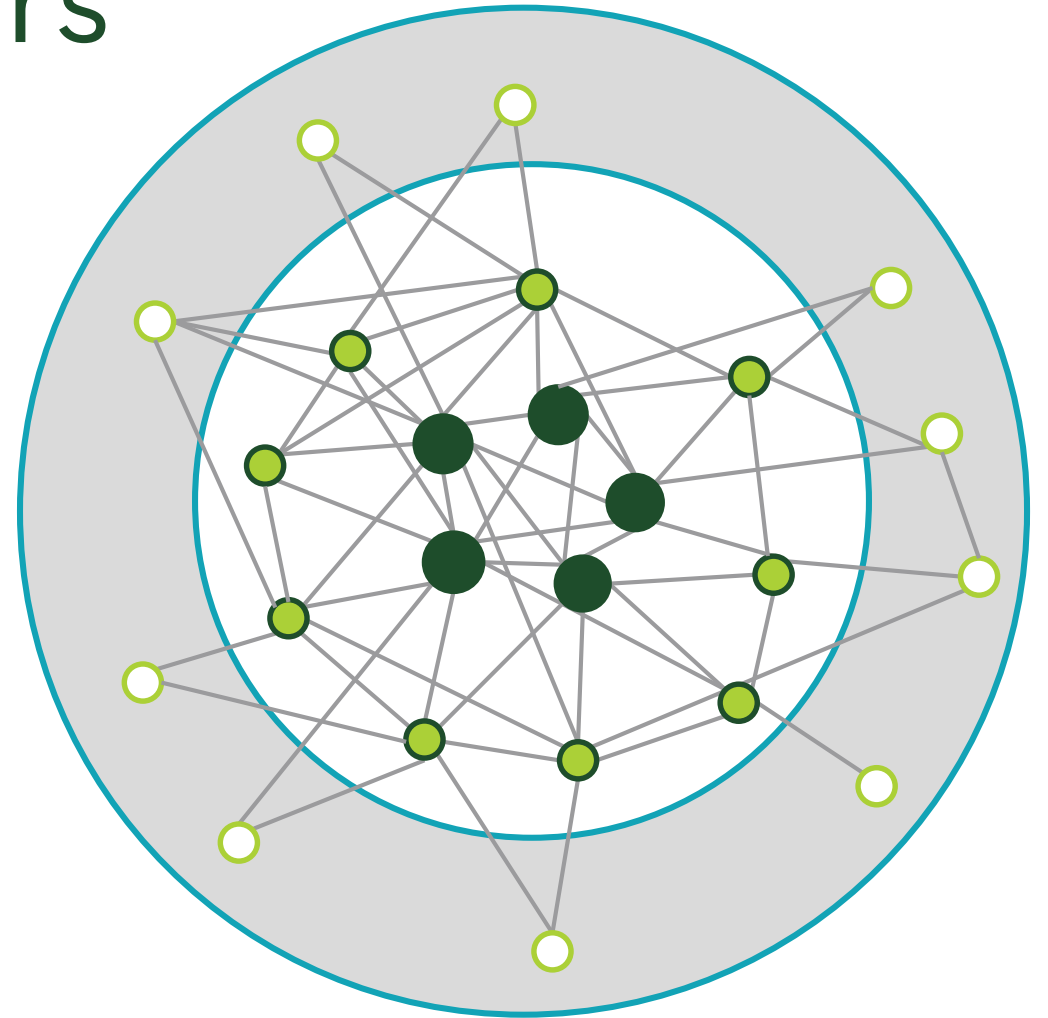
Key Stakeholders

- Input is critical to project success
- If not engaged, something crucial could be missed



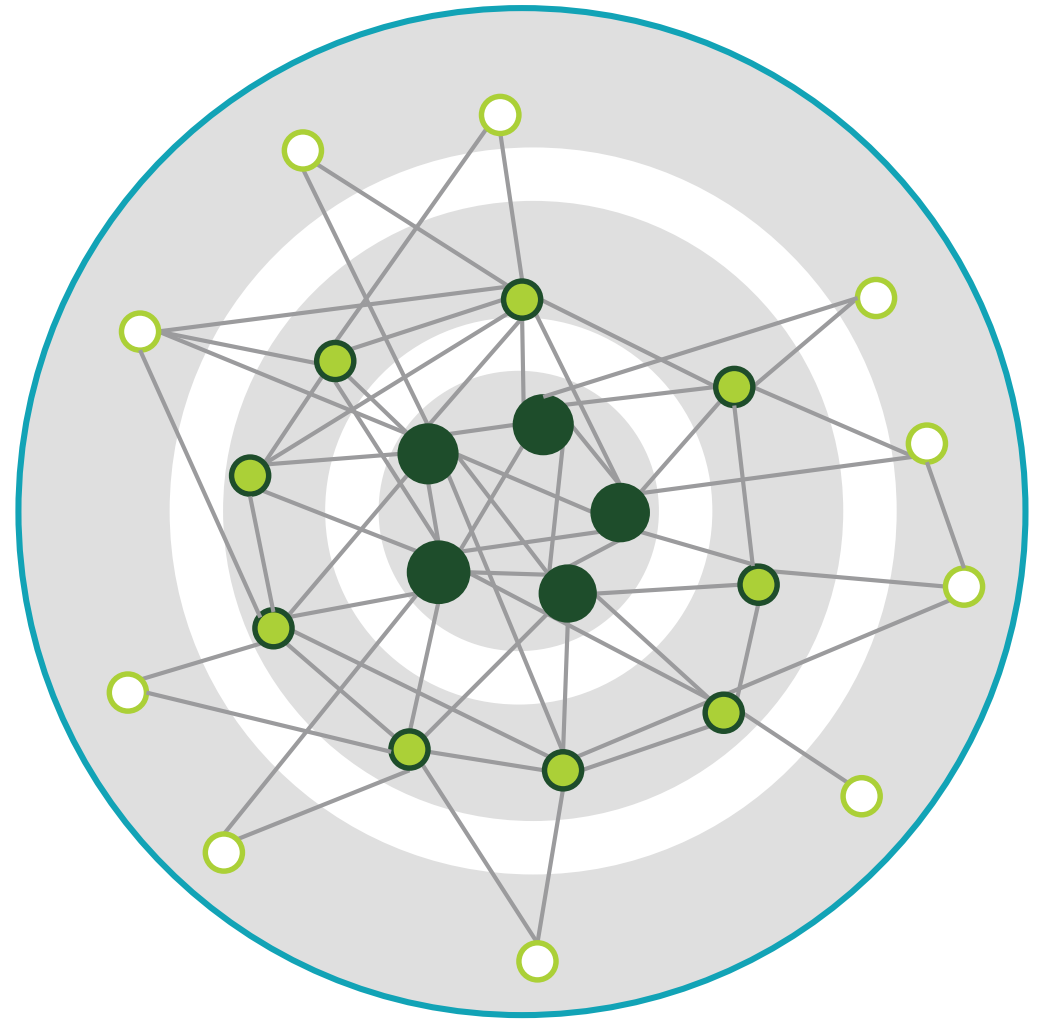
Periphery Stakeholders

- Input is helpful to project success
- Engaging them supports project buy-in
- Provide innovative ideas and new perspectives that could otherwise be overlooked



Smarter Together

- Decisions are informed by the whole – none of us is as smart as all of us
- This is NOT, however, decision by committee - clear decision making authority is essential



- Engagement Points
- Key Input & Processes
- Decision Points

[illegible]

So, how do we establish and maintain this structure throughout a project?

1

**START WITH LEADERSHIP
COMMITMENT**

4

**ESTABLISH RULES OF
ENGAGEMENT**

2

**IDENTIFY A FACILITATOR &
GIVE THEM AUTHORITY**

5

**CENTRALIZE
COMMUNICATION**

3

**UNDERSTAND YOUR TEAM
NETWORK**

6

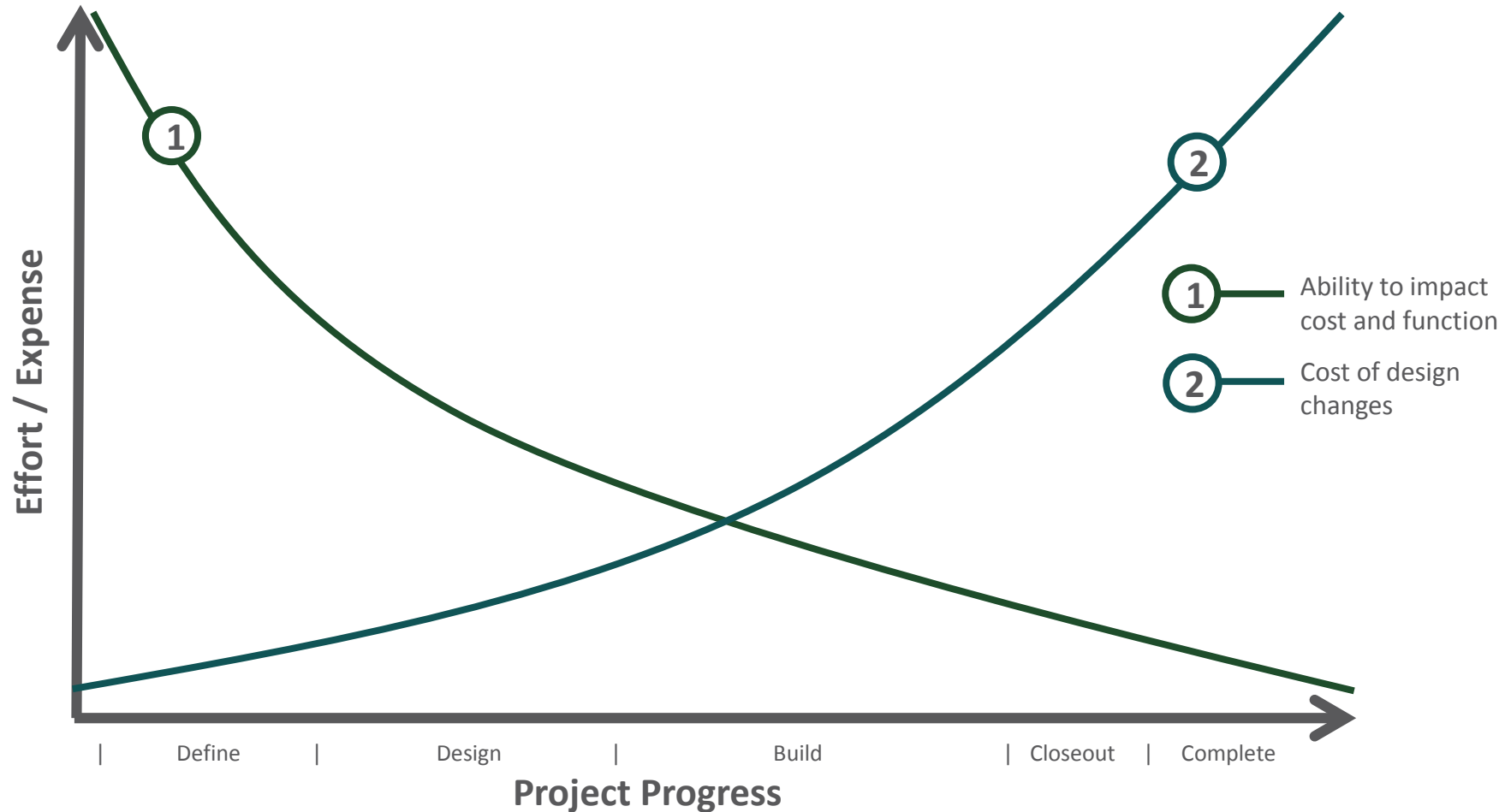
**CREATE AN ACCOUNTABILITY
SYSTEM**

Does It Really Work?

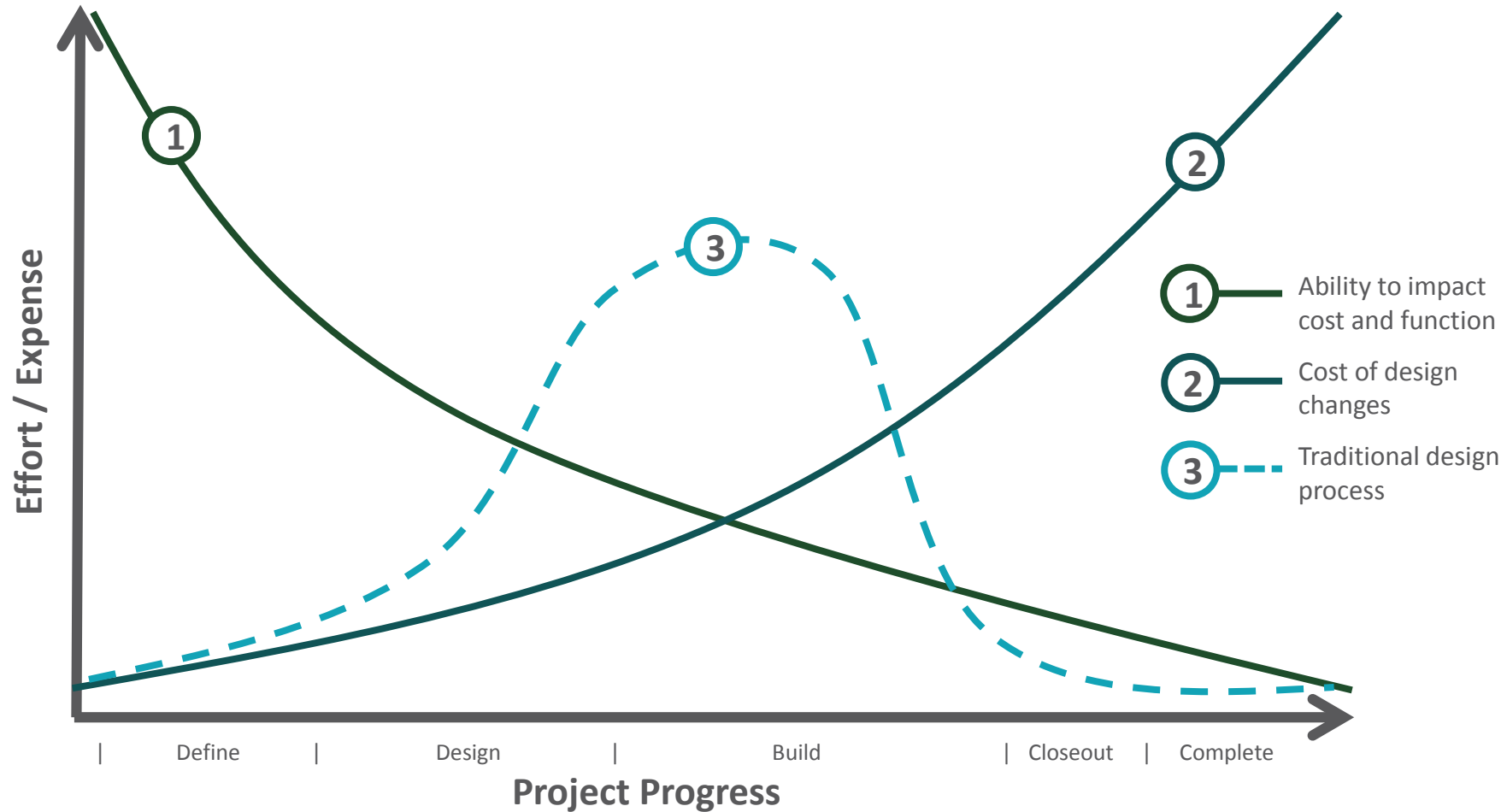
Research on the effectiveness of an integrated project process shows that it results in higher-performing projects with fewer change orders and happier customers.



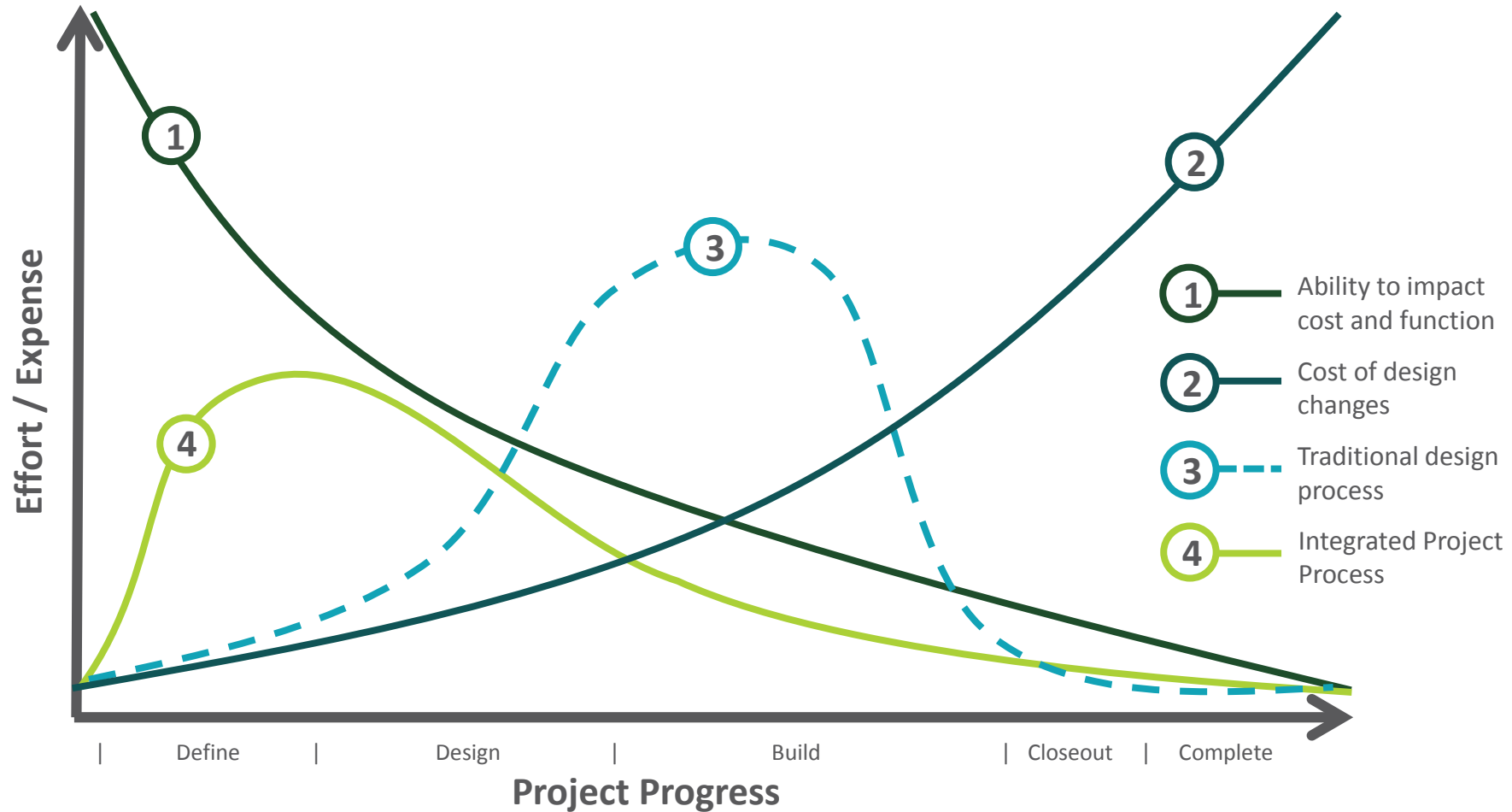
Ability to Impact Outcomes vs. Costs to Change



Typical Design & Construction Process



Slow Down to Speed Up



Integrative Team Case Study

Poudre School District needed 7 new schools. They wanted to build them right.

They first established a culture of learning and respect. All of their facilities staff were charged with learning about green building and sharing what they learned with the team. Each time they finished a school they'd regroup, summarize lessons learned, and integrate into the next school. The result was #7, Kinard Middle School - the most energy efficient school in Colorado.



A low-angle photograph of the Denver International Airport terminal at dusk. The terminal's iconic white, cone-shaped roof structure is silhouetted against a deep blue twilight sky. The interior lights of the terminal are visible through the glass sections at the bottom of the frame.

Integrative Team Case Study

Denver Airport was starting a construction boom. They knew success depended on team process.

Denver airport has high goals for sustainability and business excellence. Their long-term plan for the airport is inspiring, and will business and positive development to the area. However, their construction team struggled internally. Project complexity and the high number of stakeholders was overwhelming. So they decided to invest in a deep analysis of process, and a department-wide training on integrative process and team member expectations.



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Josie Plaut

Associate Director
Institute for the Built Environment
Colorado State University



ibe.colostate.edu



josie.plaut@colostate.edu



[@ibeatcolostate](https://twitter.com/ibeatcolostate)