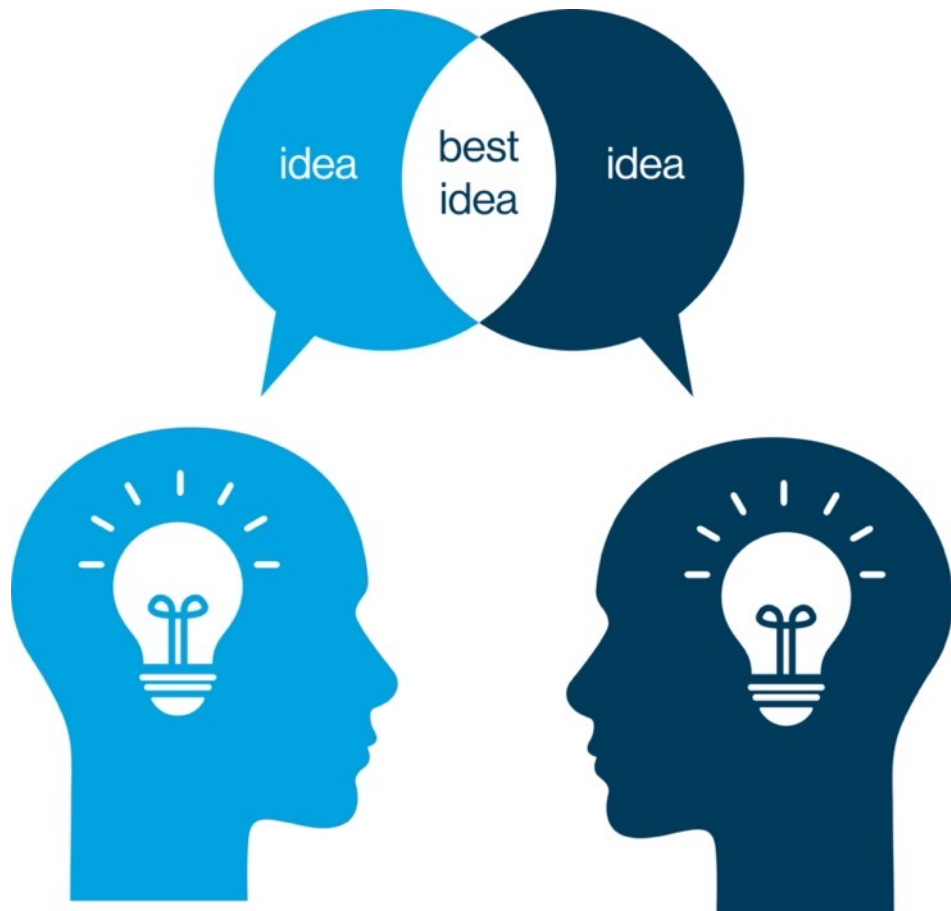


# NIBS Collaboration Academy

A program of the National Institute of Building Sciences, Washington, DC



## Impact of Collaboration

The data is very clear: When team collaboration erodes, every segment of project risk goes up.

## Collaborative Intelligence

Collectively organized/social organization

The group is collectively smarter than the average member.

# Team Collaborative Behavior Impacts Project Outcomes

## Behaviors

- Communication
- Trust
- Coordination
- Engagement
- Getting along
- Managing conflict
- Adapting
- Counterproductive behavior
- Silent quitting

## Outcomes

- Cost
- Schedule
- Safety
- Quality
- Creativity
- Effectiveness
- Innovation
- Efficiency
- Design changes/reworks
- Accidents

# The Management of Risk

## Project Team Collaboration

Any large, complex undertaking is a **matrix of human commitments**, very few of which are:

- Described in the **contracts we sign**
- Disclosed in **project documentation**
- Discussed in **team meetings**

The most powerful determinant of **project success** is the health and effectiveness of **project team collaboration**.



# Everyone in the industry is seeking collaboration

What's working? What's not working?

- IPD contracts
- Design-build contracts
- Management and leadership training for PMs
- Team co-location
- Partnering consultants
- Tech tools for collaboration (BIM/WebEx/MS Teams)
- Long-term teams
- Team opinion surveys

## So, What's Working and What Isn't



# Move Away From Anecdotal Evidence

Instead apply:

1. Diagnostic Behavioral Data
2. Scientific Analytics
3. Frequent Reporting
4. Corrective Action

**General Trends**  
Overall snapshot of what is going well, needs to be fixed

**Collaboration Patterns**  
Heat map identifies where teams or entire project is struggling or thriving

**Open Ended Comments**  
Direct feedback that recognizes successes and suggestions for change

**Project XYZ: Monthly Executive Summary**  
September 2019

**General Collaboration Trends:**

|                     | Good   | Things to Watch  | Things to Fix   |
|---------------------|--|--|---|
| Project Environment | Everyone seems to be in sync in their work, which are helpful. | Construction Team feels they are fixing other people's problems, and feel out of the loop with getting information on time from other teams. |   |
| Team Stress         | Team stress seems to be less constrained.                      | Construction Team is starting to feel less respected, satisfied, and valued (though that may be a factor of people, see grid below)          | Construction still feels drained, frustrated, and burned out.                 |
| Team Stress         | Team stress seems to go down.                                  |  | Construction feels the Owner team is increasingly difficult and disorganized. |

**Note: We will only report on issues that are outside normal variation, this includes:**

- Good attributes above 90 or below 75, bad ones above 40 or below 15. Differences between subteams greater than 10.
- Any trends that persist longer than 2 cycles.

**Patterns of Collaboration:**

This grid shows the patterns of individual responses. Each line is an individual response. The black lines separate the teams, the vertical black lines separate the report categories.

A single line means that the team is disorganized. If a region is less green, there may be a team in that region.

**Comments:**

- The entire team needs to be told they're doing a great job. Everyone is pushing to the limit to make this project a success. I just want them to know it doesn't go unnoticed. I know they don't hear it enough but **THANK YOU!**
- There is a great satisfaction with the outcome of the team. It was a tough design element to get into the project. I wanted push back and design challenges along the way. The determination of the Design Team along with the Owner's vision/strategy should be credited.
- Action was taken to address a tech issue by Construction Team Members [Pat Jones, James Smith, Jason Adams, Susan Pearce]
- The Design Team is not going through documents/RFTs/submittals thoroughly, which means there has been a lot of rework or last minute fire drills in the field. I feel as though we cannot trust RFT/submittal responses unless we come up with the solution completely before sending it to the Design Team. The field has had to do a lot of design work.
- Disappointing that there was a strong push for power and cooling requirements for the incoming service demarcation point and Owner Team IT members haven't finalized the information on getting the permit connected to the site conduits.
- Owner is not great at making decisions, and even after they are made, you can usually expect a change in decision after the team has already

# Analytics

Which Variables Impact Team Performance

| Collaboration Behavior | Results of Meta-Analysis | Outcome $\sigma^2$ |
|------------------------|--------------------------|--------------------|
| Trust                  | $\sigma = .3$            | 9%                 |
| Conflict Management    | $\sigma = .12$           | 1%                 |
| Shared Mental Model    | $\sigma = .31$           | 10%                |
| Social Cohesion        | $\sigma = .26$           | 7%                 |

$\sigma(\text{RHO})$  is a measure of how much change in behavior impacts actual project outcomes

# What Matters?



## How People Feel:

- Engaged
- Frustrated
- Burned out
- Supported
- Powerless



## Project State:

- Project feels disorganized
- People listen and care
- People blame each other
- Jobs are done right
- Hold mistakes against you
- Feeling financial pressure



## The Team Environment:

- Respectful
- Adaptable
- Open to ideas
- Stressful



# The Future of Collaborative Cultures

Install - Monitor - Manage

1

Apply behavioral science

2

Use data analytics

3

Consistent evaluation

4

Periodically adjust and re-calibrate the culture

# **NIBS Collaboration Academy**

Initial Meeting: Board of Regents

# Board of Regents Makeup



## Federal Agency Executives

- Responsible for the design and construction process



## Subject Matter Experts

- Behavioral scientists
- Private sector facility executives
- Program management leaders
- Appropriate retired federal executives



## Professional Association Executives

- ASHE
- DBIA
- ABC
- AGC

# Academy Vision



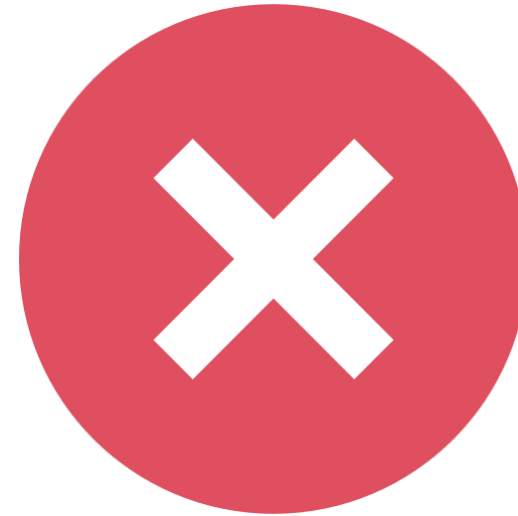
Improve project outcomes by materially enhancing collaboration on multidiscipline project teams.

# Regent Collaboration Discussion

Examples of successful and unsuccessful team collaboration

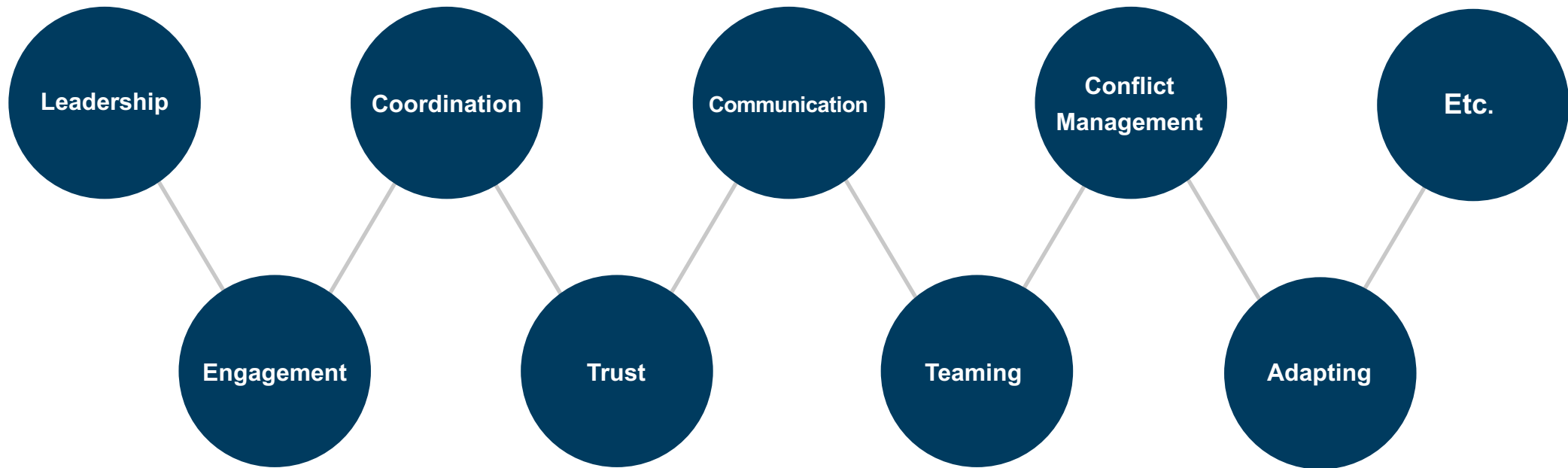


**Successful Collaboration**



**Unsuccessful Collaboration**

# Team Collaboration Standard Topics



# Team Collaboration: What's Missing?



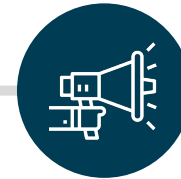
Consistent  
Monitoring Using  
Validated Scientific  
Evidence



Private Team  
Feedback  
Mechanism



Consistent Team  
Adjustment and  
Realignment



Change  
Management  
Procedures



On-Demand  
Instant Coaching

# Subcommittees

Standing

Agency Best Practices

Curriculum

Awards

Certificate Program

Focused

As Needed



# The Future of Collaborative Cultures

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# Academy Focus

There are many programs available offering traditional management, communication, and leadership training. This academy is not intended for general purpose application.

**It is focused on the federal design and construction process, and in addition to behavioral science and data analytics,** it is based on 8 years of field research with large-scale projects.



# Summary

1. Enhancing professional collaboration is our single most powerful management challenge.
2. Before any project gets behind schedule or over budget, there are early collaboration indicators we have learned to read ... providing PMs with time to correct.
3. The kind of professional collaboration we are trying to engender is not a natural human condition ... it must be taught, monitored, managed, and maintained.
4. It's time to go beyond traditional management, leadership, partnering, and communication programs.
5. It's time to apply: (1) behavioral science (2) data analytics (3) consistent monitoring.
6. Critical for project success: Constant adjustment/realignment based on data.