Welcome to the ASCN webinar:

Developing and Sustaining Effective Partnerships to Advance Change in STEM Higher Education

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ASCN Webinar:
Developing and Sustaining Effective Partnerships to Advance Change in STEM Higher Education

• Picking Good Partners: Challenges and Strategies for Developing Effective Partnerships
  • Marilyn J. Amey, Michigan State University

• Working in Interdisciplinary Teams: Lessons Learned in Influencing STEM Change
  • Sarah Rodriguez, Iowa State University

• Making the Most of Multi-Sector Collaboration Through Key Boundary-Spanning Individuals
  • Lucas Hill, University of Wisconsin-Madison
Picking Good Partners: Challenges and Strategies for Developing Effective Partnerships

Marilyn J. Amey
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Over 15 years of studying educational partnerships, collaborations, consortia, networks

Within and cross-institution, domestic and international

Most recently, BEACON Science and Technology Center [5 universities] and AGEP-CIRTL Network Improvement Community [9 universities]
Why partnerships?

- Partnerships can be useful
- Partnerships are often hard to develop and sustain
- Strategic partnerships are possible
Partnership Model

Antecedents

Motivation

Context

Partnership

Outcomes

Context

Sustainable

Dissolves

Untenable
Stage I – Antecedents
Champion’s Role—

Champion
• Resources
• Ties/Passions
• Intent

Motivation
Context

Antecedents
Stage I – Antecedents: Social & Organizational Capital in Partnership Development

Social Capital
- Trust
- Centrality
- Density

Organizational Capital
- Power/Influence
- Resources
- Communication
Stage II – Developing Partnership Champion’s Role—

Champions:
- Intention
- Rank/status
- Capital

Outcomes

Partnerships

Context
Stage II – The Developing Partnership Negotiating Social Capital
Stage III – Institutionalizing….or Not Champion’s Role—

Champion
• Consistency
• Capital
• Managing difference

Sustainable? Dissolves? Untenable?

Feedback

Context
Stage III – Partnership Capital—
Strategic Partnerships

Motivations to Collaborate:
- Strategic Objectives
- Alignment Value
- Policy Mandates

Creation of Institutional Strategic Goals and Objectives

Environmental Scanning

Strategic Partnerships

Relationships
Framing

Norms, shared values, shared meaning trust
Strategic Partnership Model

 Relationships

1. Expertise
2. Connections
3. Communication
4. Strategic Goals

Framing

Shared Meaning
Strategic Aligning
Building Trust

Strategic Objectives
Environmental Scanning
Strategic Partnerships

Motivation to Partner

• Expertise
• Resources
• Connections
• Alignment
• Communication
• Strategic Goals
Partnerships cannot be mandated but can be intentionally developed
Champions are important but not role-specific
Partnerships are a form of interdisciplinary and cross-disciplinary work
Strategic partnerships stand the greatest chance of being sustained
Working in Interdisciplinary Teams: Lessons Learned in Influencing STEM Change

Sarah Rodriguez
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Overview

• Current Projects – Where I’m Coming From

• Working in interdisciplinary teams
  ➢ Connecting with colleagues
  ➢ Leveraging expertise

• Lessons learned about influencing cultural/structural change
  ➢ Overcoming challenges
  ➢ Celebrating Victories
  ➢ Documenting Process and Change
Current Projects

Alliances for Graduate Education and the Professoriate (AGEP)
--Network Level--

IUSE/Professional Formation of Engineers: REvolutionizing engineering and computer science Departments
(IUSE/PFE: RED)
--Department Level--

Louis Stokes Alliances for Minority Participation (LSAMP)
--Student/Campus Level--

NSF Scholarships in Science, Technology, Engineering, and Mathematics Program
(S-STEM)
--Student/Program Level--
Working in Interdisciplinary Teams

- Connecting with Colleagues
  - Seeking out the right colleagues, with the right expertise
  - New faculty, new ideas/perspective, “new normal”

- Reaching out **early**, not just as an add-on

- Valuing colleague expertise in their area; listen

- Think carefully about objectives, how to keep project fully integrated
  - Use of logic models
Working in Interdisciplinary Teams

Poll: Does your project use a logic model? (Yes/No)

“A logic model is a **systematic and visual way** to present and share your understanding of the **relationships among the resources** you have to operate your program, the **activities** you plan, and the changes or **results** you hope to achieve.”

(W.K. Kellogg Foundation 2004)
Working in Interdisciplinary Teams

- Importance of Logic Models
- Engagement of Stakeholders
- Shared vision
- Explicit steps, actions
- Common vocabulary
Working in Interdisciplinary Teams

• Leveraging Expertise
  ➢ Involve collaborators across areas of the project

• Understand the diverse array of skills/knowledge for change power
  ➢ Examples: Creativity, exactitude, questioning, STEMinism

• Acknowledging perhaps fundamentally differing views based on subject area (e.g. objectivity, constructivism)

• Create clear, valued feedback loops for multiple stakeholders in the project
Lessons learned about influencing cultural/structural change

• Overcoming Challenges
  ➢ Be flexible, project change and evolve

• Be prepared for differing view points on process, approach (considering points, valuing expertise)
  ➢ Disciplinary socialization is very real

• Keep the focus on the project’s best interest, come back to this often

• Be kind, generous, and willing to connect
  ➢ Share experiences, a meal, etc.
Lessons learned about influencing cultural/structural change

- Celebrating Victories
- Project retreats allow team members to show progress in multiple areas
- Space in meetings to share upcoming opportunities, dissemination, publications, briefs
- Acknowledgement and amplification of each other’s work and project goals/successes
  - Meetings, email, social media
  - Media, press releases
Lessons learned about influencing cultural/structural change

Question: How does (or would) your team celebrate victories or acknowledge team members’ contributions?

Think about...
- What motivates your team members?
- How do they like to be recognized?
- What milestones do you celebrate?
Lessons learned about influencing cultural/structural change

- Documenting Process and Changes

- Document early and often, especially around project choices, revisions
  - Much shifting in multi-year, multi-discipline projects

- Capturing perspectives of change from multiple angles
  - Example: engineering education, social science, psychology, etc.

- Early discussion of dissemination plans, outlets, audiences
Take-aways

- Working in interdisciplinary teams
  - Making meaningful connections
  - Honoring expertise of collaborators
  - Establishing a culture of feedback, cycles

- Lessons learned about influencing cultural/structural change
  - Being patient (but also pushing the envelope)
  - Celebrating victories of all kinds
  - Sharing amongst the team, problem-solving from multiple angles
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Making the Most of Multi-Sector Collaboration Through Key Boundary-Spanning Individuals

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OVERVIEW

- Findings from a study of formal institutional representatives in the Center for the Integration of Research, Teaching, and Learning (CIRTL)
  - Inter- and Intra-Organizational Connections
  - Four Boundary-Spanning Behaviors
  - Key Boundary-Spanner Characteristics
- Presentation of a boundary-spanning framework
- Discussion of experiences in the CIRTL INCLUDES project where appropriate
WHAT IS BOUNDARY-SPANNING?

• Boundary spanning is the act of an individual or group extending beyond an organizational boundary to influence or be influenced by either side of that boundary.

• Organizational boundary is “the demarcation line or region between one system or another, that protects the members of the system from extrasystemic influences and that regulates the flow of information, material, and people into or out of the system.”*  

• Organizational members mediating the organization’s relationship with the external environment

WHY STUDY BOUNDARY SPANNING?

- Strong impetus to reform undergraduate STEM education for decades
  - Yet, limited adoption of improved teaching practices
  - Recent push towards systemic and coordinated approaches to STEM reform
  - Multi-institutional reform partnerships and networks have become common
  - *Limited empirical evidence* to support the effectiveness of collaborative change mechanisms

- Organizational representatives in change networks and partnerships perform an important boundary spanning role

- **My study explored**: What connections? What boundary-spanning behaviors? What boundary-spanner characteristics?
STUDY METHODS

• The Center for the Integration of Research, Teaching, and Learning (CIRTL)
  • 41 research universities focused on improving the preparation of future STEM faculty in effective teaching practices
  • 4 case institutions selected based on extent of local programming and time in CIRTL

• Data
  • Qualitative social network maps of institutional representatives ($n = 9$)
  • Interviews with institutional representatives, with named campus connections related to CIRTL, and with members of CIRTL’s central administrative team ($n = 51$)

• Thematic analysis
CIRTL INCLUDES: DESIGN & DEVELOPMENT LAUNCH PILOT

• Goal is to “develop STEM faculty, for all sectors of postsecondary education, able to use and adapt evidence-based, inclusive teaching, mentoring and advising practices that yield increased success of URG students.”

• Three strategic goal groups focused on…
  • Teaching, advising, mentoring practices for all faculty
  • Preparation of community college faculty
  • Preparation of URG graduate students for faculty roles

• CIRTL campuses plus 23 additional organizational partners (e.g., APLU, AAU)
BOUNDARY-SPANNER CONNECTIONS

- Interorganizational
  - Operations
  - Contributions
  - Collaboration
  - Knowledge exchange
  - Resources

- Intra-organizational
  - STEM Reform activities
  - Leadership
  - Organizational Units & Members

![Diagram showing connections between external environment, boundary spanner, and organization]
BOUNDARY-SPANNING BEHAVIORS

• Finding
  • Interorganizational interaction leading to personal and institutional benefits

• Translation
  • Formal representative & local team
  • “You have to figure out how to adapt what somebody else is doing from whatever circumstances you have”

• Diffusion
  • To local team
  • To local leadership
  • To local units and individuals
  • Through marketing channels

• Gaining Institutional Support
  • From administration/leadership and organizational units
LOCAL BOUNDARY-SPANNING EFFECTS

• Inform
  • Keeping local constituents up-to-date with Network/Partnership activities

• Dialogue
  • Expanding organizational discussion as a result of Network/Partnership membership

• Influence
  • Affecting changes in local activities and initiatives
BOUNDARY SPANNING FRAMEWORK

Network/Partnership Participation
Interorganizational

Member Organization
Intra-Organizational

STEM Reform Activities
Local Team

Leadership
Inform
Dialogue
Influence

Org Units & Members
Inform
Dialogue
Influence

Boundary Spanners
Organizational Representatives

Intuit®

Translate

Interpret®

Inform
Dialogue
Influence

Formal Organizational Roles

Find Network/Partner Connections
Operations Contributions Collaboration Knowledge Exchange Resources

Find

Intuit

Legend

Diffuse Integration
Gain Support Integration Institutionalize

Operations
Contributions
Collaboration
Knowledge Exchange Resources

Operational Context

Operations Contributions Collaboration Knowledge Exchange Resources

WHAT SHOULD BE CONSIDERED BEFORE ENGAGING IN BOUNDARY-SPANNING?

• **Individual Attributes**
  • Institutional role
  • Committed and passionate
  • Change & learning leader
  • Connected
  • Time management
  • Team utilization

• **Influencing Organizational Characteristics**
  • Alignment with the Network or Partnership (e.g., org goals)
  • Local program/reform activity infrastructure
  • Degree of decentralized organizational structure
IMPLICATIONS FOR STEM REFORM PARTNERSHIPS

- **Motivation**
  - Individual and institutional commitment simultaneously drive boundary spanning behaviors
  - The boundary spanning behavior of *finding* is a constant negotiation of perceived benefits, individual motivators, institutional motivators, and interorganizational connections

- **It Takes a Team**
  - Distribution and coordination of boundary spanning activities is an important success prerequisite

- **Alignment**
  - The need to factor in horizontal and vertical dimensions in seeking partnership-institution alignment
  - Alignment of work responsibilities with partnership activities
Thank you for attending the ASCN webinar!

**Developing and Sustaining Effective Partnerships to Advance Change in STEM Higher Education**

Upcoming Webinar:
**Creating a Unified Community of Support:**
**Increasing Success for Underrepresented Students in STEM**
Elizabeth Holcombe, University of Southern California

Wednesday, March 28th, 9:30am PT | 10:30 am MT | 11:30am CT | 12:30pm ET

Webinar Evaluation:
https://ascnhighered.org/ASCN/webinars/effective_partnerships/evaluation.html