



Facilitating Change in Undergraduate STEM: An Invitational Symposium Integrating Multiple Perspectives

Working Group 2: Next Steps

Group Members: _ Birkett, Beichner, Calkins, Finkelstein, Gilbert, Henderson, Hughes-Hallett, Millar, Wieman, Varma-Nelson,

Area of Focus for Action: F

Change Agent Resource Suite: communication Packet for Change in STEM:
Condensed document from speakers / compendium – (for Deans, dept, chancellor)
Disseminating findings of this group – in journal, book, etc.. Share advances in models of change in STEM Edu reform to other areas

Short Description of the Scale / Scope of Issue to be addressed:

Identify what we need to know about STEM educational change
How do we get usable information to people who use it.?

Change agents don't know how to frame the challenge of supporting STEM Change.

GOAL:

Create a resource that:
Frames the issues,
WHO
WHAT (knowledge)
HOW
Where (media)

If on campus I need support of various stake-holders what do we need provide to provost, chair, dean (PVN)
Folks who have particularly supportive administrators, ask admins what makes these folks supportive .. what do they need (BB): chair, dean, provost

There is a PKAL document (BB)

Don't want superficial list (CH)

SM: need to have the what and how...

CEW: you have a change agent... levers are nice but failure points are more critical:
need to know what to avoid

SC: what models are privileged

AVD: contingency model—need to know what model to use when.

What knowledge needs to be communicated

To Whom

and

How (to whom):

Position of Change agent matters (are you internal or external)?
(CEW: not necessarily different)

How does this project help you get your job done?

Engender enthusiasm – emotionally engaged.

COMPONENTS OF RESOURCE:

Precis:

Framework of what this document is about:

It's goal is to:

It identifies WHO, WHAT KNOWLEDGE, HOW Knowledge spreads, MEDIA for spreading

To Whom:

Student – leaders (participants in change)(

Grads)

Faculty - faculty

Departmental level support: (start)

Chair, opinion leader, committees?

Discipline-specific: need to address the currency of group:

Sense of urgency / the problem:

[Student learning is a metric](#)

[DFW rate, FCI](#)

Campus Opinion Leaders “radicalized seniors”

Centers for Teaching and Learning (grad faculty and research)

Dean / College

Comparison with other institutions

Provost / Chancellor:

Governing Board

Legislature

Funders (alumni, foundations, state legislators):

KNOWLEDGE:

Relevant knowledge that useful for various stakeholders:

What is applicable to all:

Message goal of action / articulate the problem.

Identify the nature of the problem

Have good data to frame (by which you wish to be judged later)

Knowledge change agent shares with others:

Evidence problem (at each level: e.g. student learning) / Needs for change

Benefits of change (problem of not acting (threat?))

Source of challenges

Strategy (short term goals, big picture)

Model of approach

Evidence of success (and failure)

Types of failure modes

Knowledge change agent needs to have:

Deep contextual knowledge of how this place runs and works (local 'politics')

Types of typical **failure modes**.

Points of resistance

Points of resources

Create strategies for addressing resistance and using resources

Model working within at what time with whom

Meet stakeholders where they are.

HOW of KNOWLEDGE

Need to align:

Problem, intervention, outcome

Create a sense of urgency--- outline visions...

Story for emotional response that drives response... a hook, or tool?
(Made to Stick, or Springboard Stories)

“Framing Science” Nesbit...

Identify which level of structure to address when (bottom up; top down, etc...)

Identify who you're talking to and when.

Find colleagues... / Indigenous leadership – contextual knowledge and framing

Useful Heuristics / Models of Change

Create set of steps (Kotter):

Set of urgency

Coalition

Develop vision strategy

Communicate vision

Empower broad based action

Short term wins

Consolidate gains

Anchor new approaches

VandeVen:

Teleology, Life Cycle, Dialectic, Evolution

Henderson metric -

Communities necessary for change

Build a coalitions depending upon the model / mode change. (e.g. Kotter model coalition to create consensus and change; social action group in dialectic mode)

MEDIA of SHARING

A product for this group could model after evaluation manuals to produce a change manual

If project relates to creating change:

You should have CHANGE model

Audience:

CTL, CCLI applicants, Change Mag.

Desired Endpoint / Goal of Action:

A resource kit for change-agent to be able to use as they speak to stakeholders (where

they are at) in order to convince

Identify 3 (or more) Concrete Actions to achieve Next Steps:

For Each Action (please be specific & detailed), list who might take these steps & when.

Proposal to NSF – Guide to CCLI proposals – Charles & Pratibha

Noah – ask for someone to set up wiki - Jun 18

Establish Wiki –

- create structure: - bob or Noah – Jul 6
- noah send out email: July 7
- 1 month everyone puts in 30 min. – by Jul 20
 - populate content
 - o small number of articles and books
 - o value of stories
- people nominate who gets added to Wiki (Aug 1)
 - o

seeding the wiki:

Chandra, Deborah H-H, Bruce, Carl, Sara, Bob, Susan, Susanna, Charles, Prtibah, Noah