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Attaining our Common Goals through Effective Collaboration

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NJIT

New Jersey Institute
of Technology

Attaining our Common Goals through Effective Collaboration.

March 27, 2018

Panelists:

Cristo Leon, MBA

Director of Research College of Science and Liberal Arts
Office of Research, New Jersey Institute of Technology.

James M. Lipuma, PhD,

Director of the Collaborative for Leadership, Education, and Assessment Research (CLEAR)

Currently, Cristo is the Director of Research, CSLA at NJIT where he Manages the logistics of the College of Science and Liberal Arts research and planning programs. Assist the CSLA Dean, faculty and staff on research-related planning documents, research activities and proposal budget preparation. Help the Office of Research and Development and other entities within NJIT monitor and assist in ensuring compliance with federal, state and other governmental and NJIT regulations. Serve as staff liaison for the CSLA Dean´s Office with the Office of Research and Development and with the New Jersey Innovation Institute.

What is effective collaboration?

effective

ADJECTIVE

1.- Successful in producing a desired or intended result.

‘effective solutions to environmental problems’

1.1.- (of a law, rule, or policy) operative.

‘the regulation will be effective from January’

2.- [attributive] Existing in fact, though not formally acknowledged as such.

‘she has been under effective house arrest since September’

2.1 Assessed according to actual rather than face value.

effective | Definition of effective in English by Oxford Dictionaries. (2018, March 27). Retrieved March 27, 2018, from https://en.oxforddictionaries.com/definition/effective

collaboration

NOUN

1.1.- The action of working with someone to produce something.

‘he wrote a book in collaboration with his son’

1.1.- count noun Something produced in collaboration with someone.

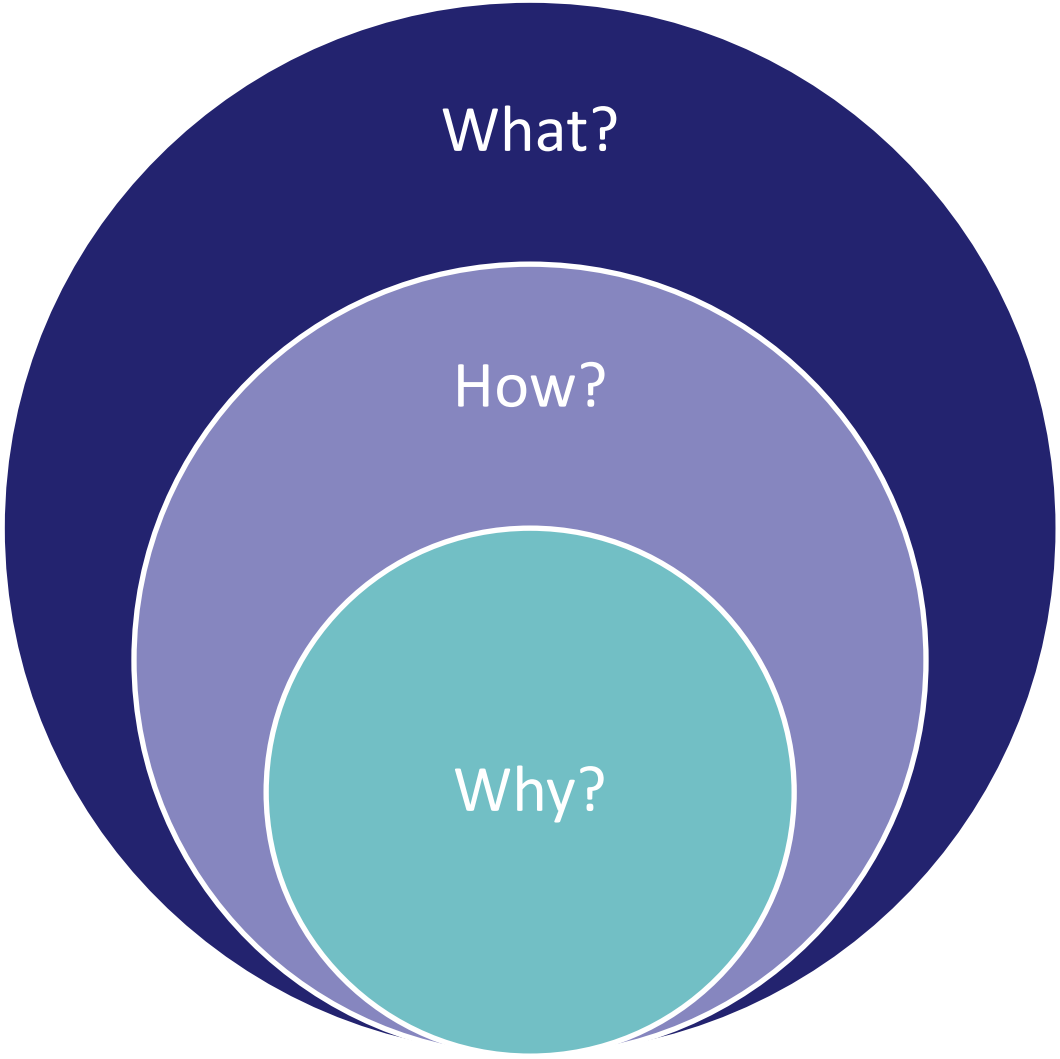
‘his recent opera was a collaboration with Lessing’

2 Traitorous cooperation with an enemy.

‘he faces charges of collaboration’

collaboration | Definition of collaboration in English by Oxford Dictionaries. (2018, March 27). Retrieved March 27, 2018, from https://en.oxforddictionaries.com/definition/collaboration

Then… What is effective collaboration?


What?
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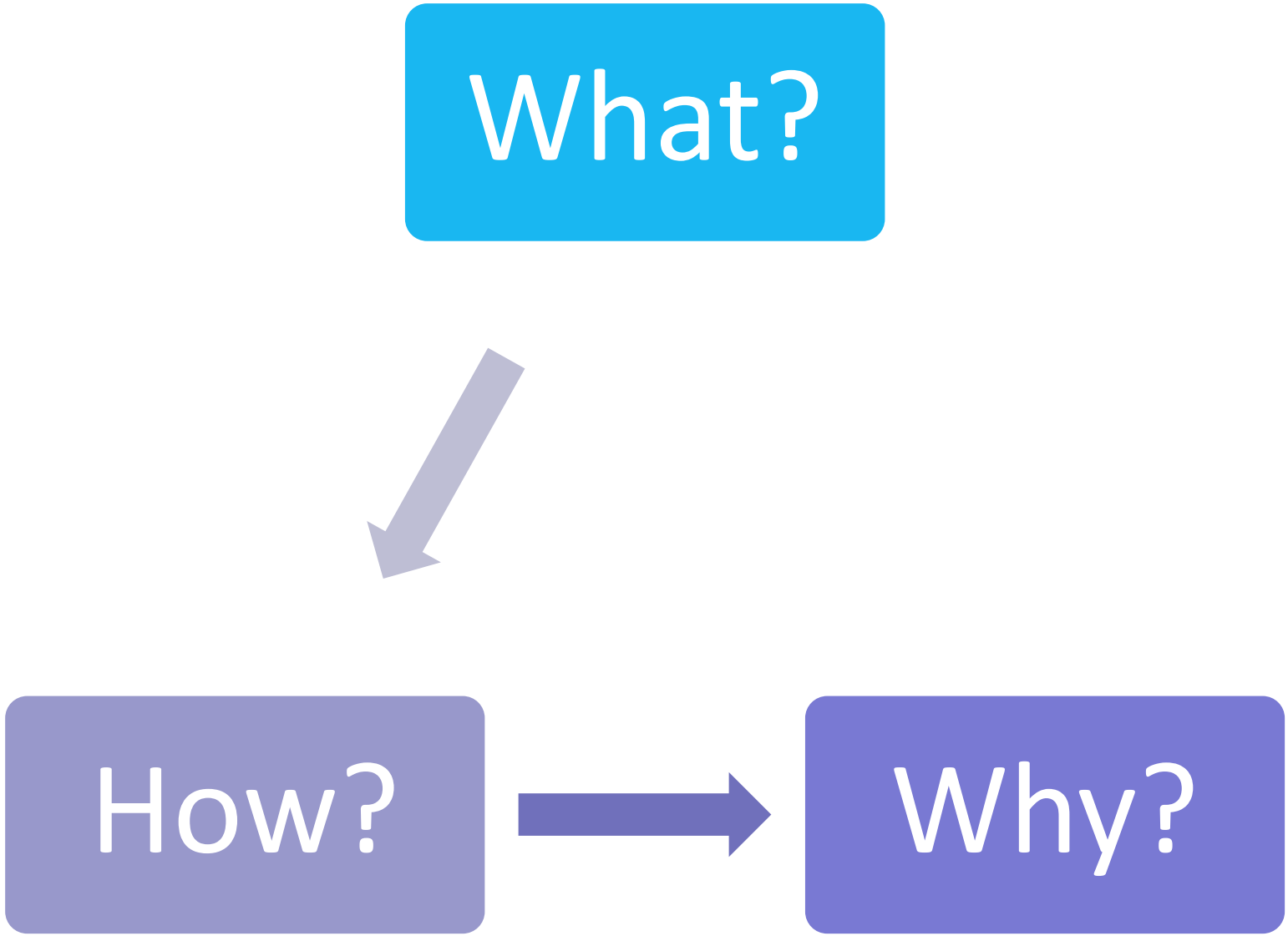
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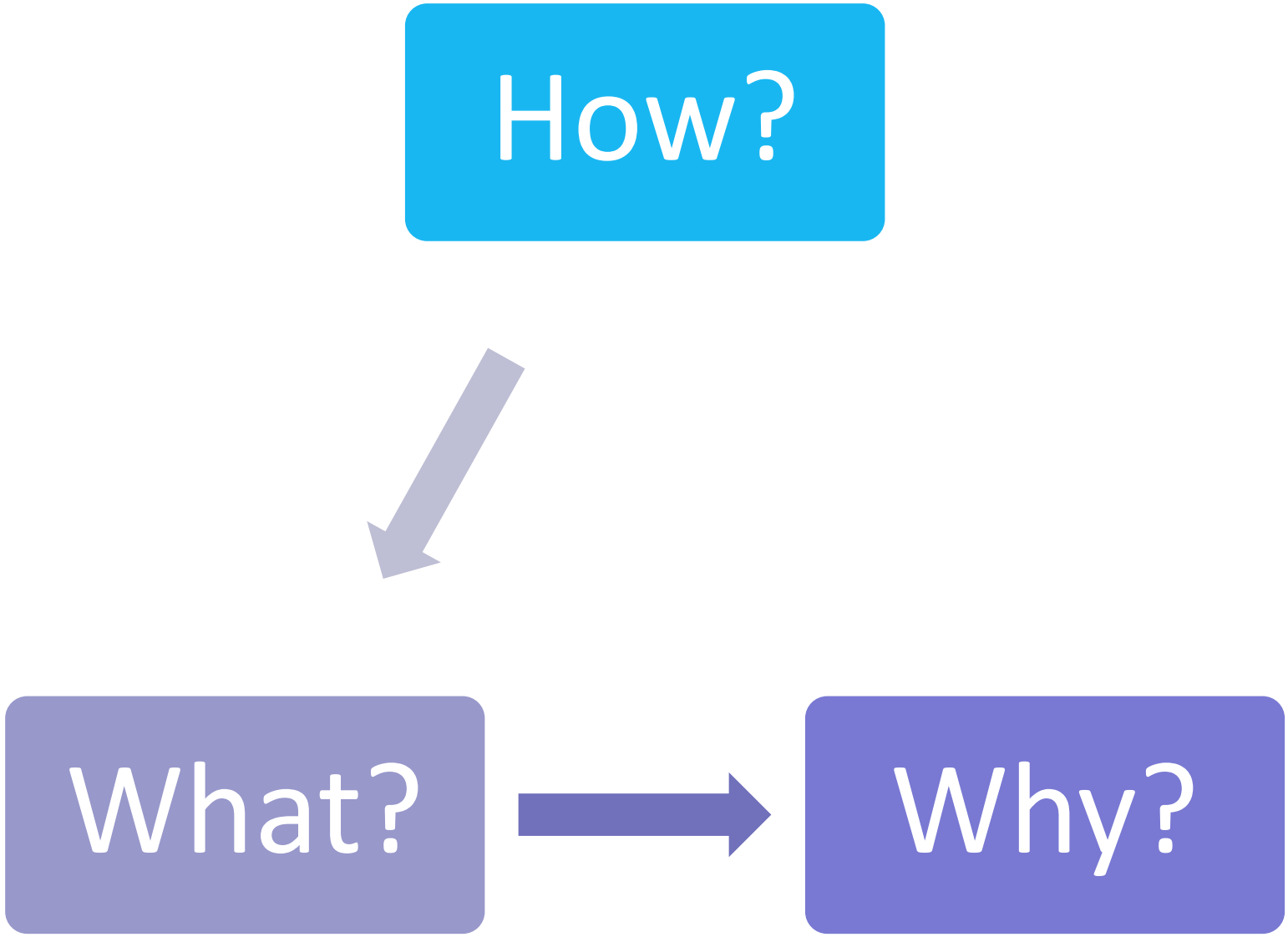
How is effective collaboration attained?


How?
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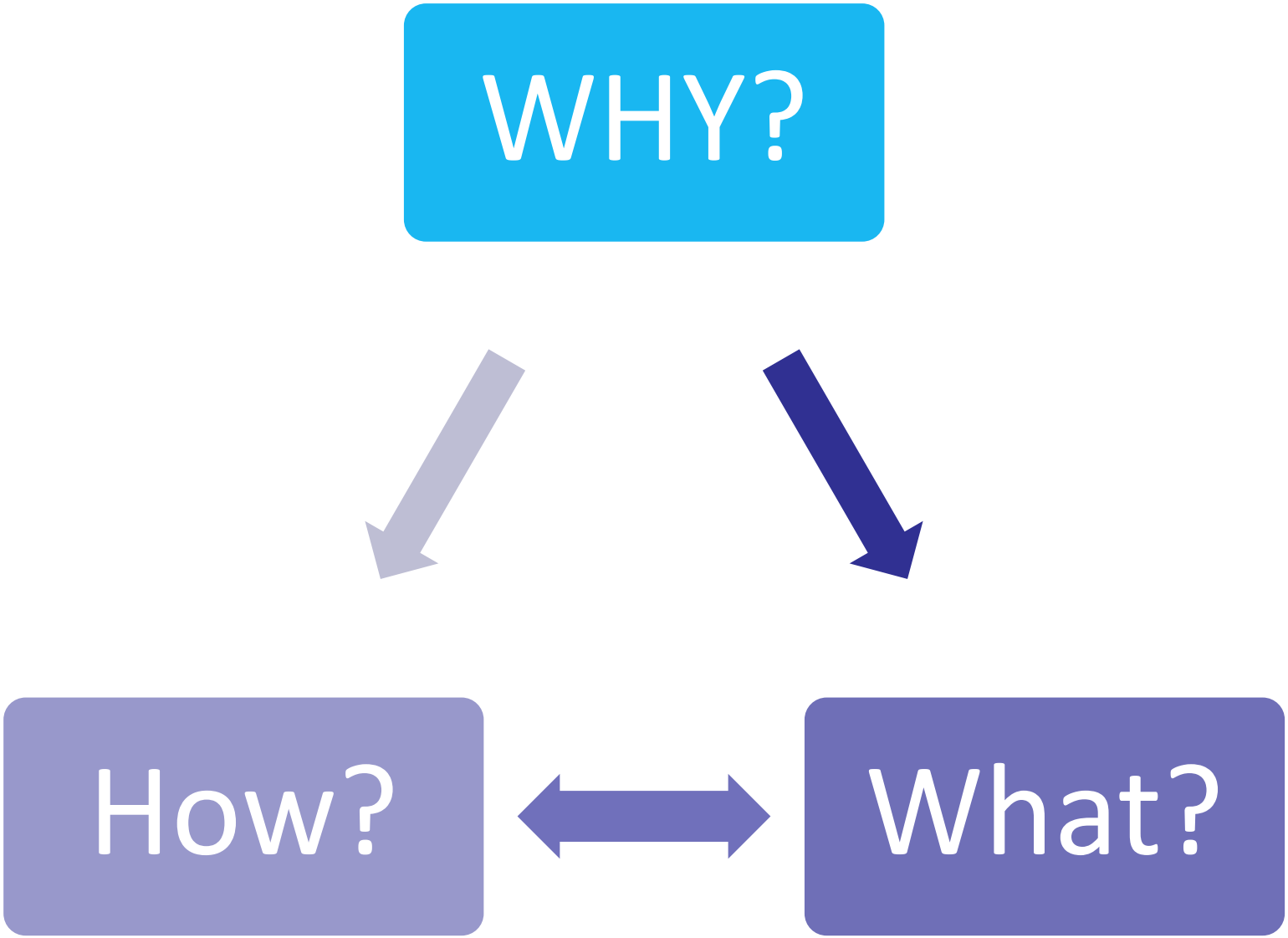
Why we don't start by defining Why?


WHY?
How?
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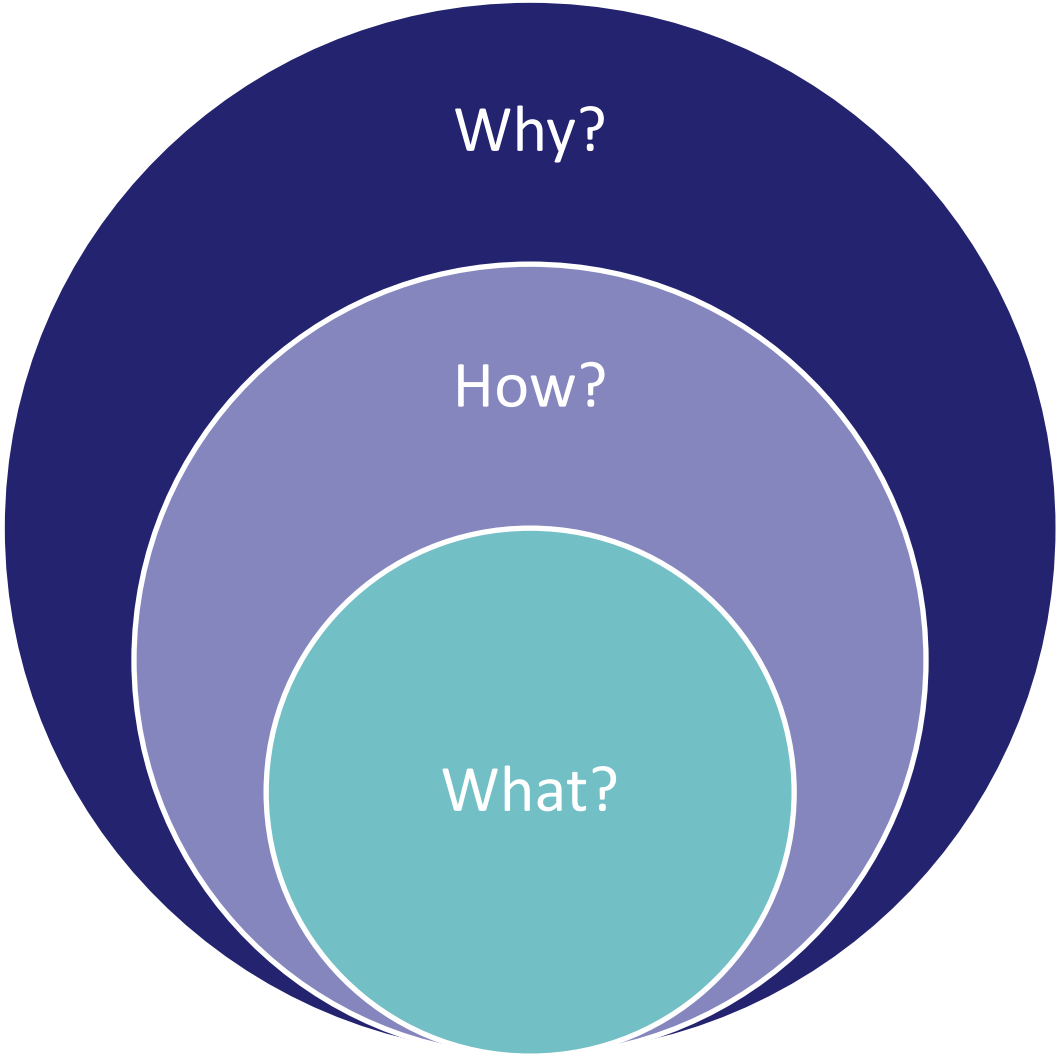
Why?
How?
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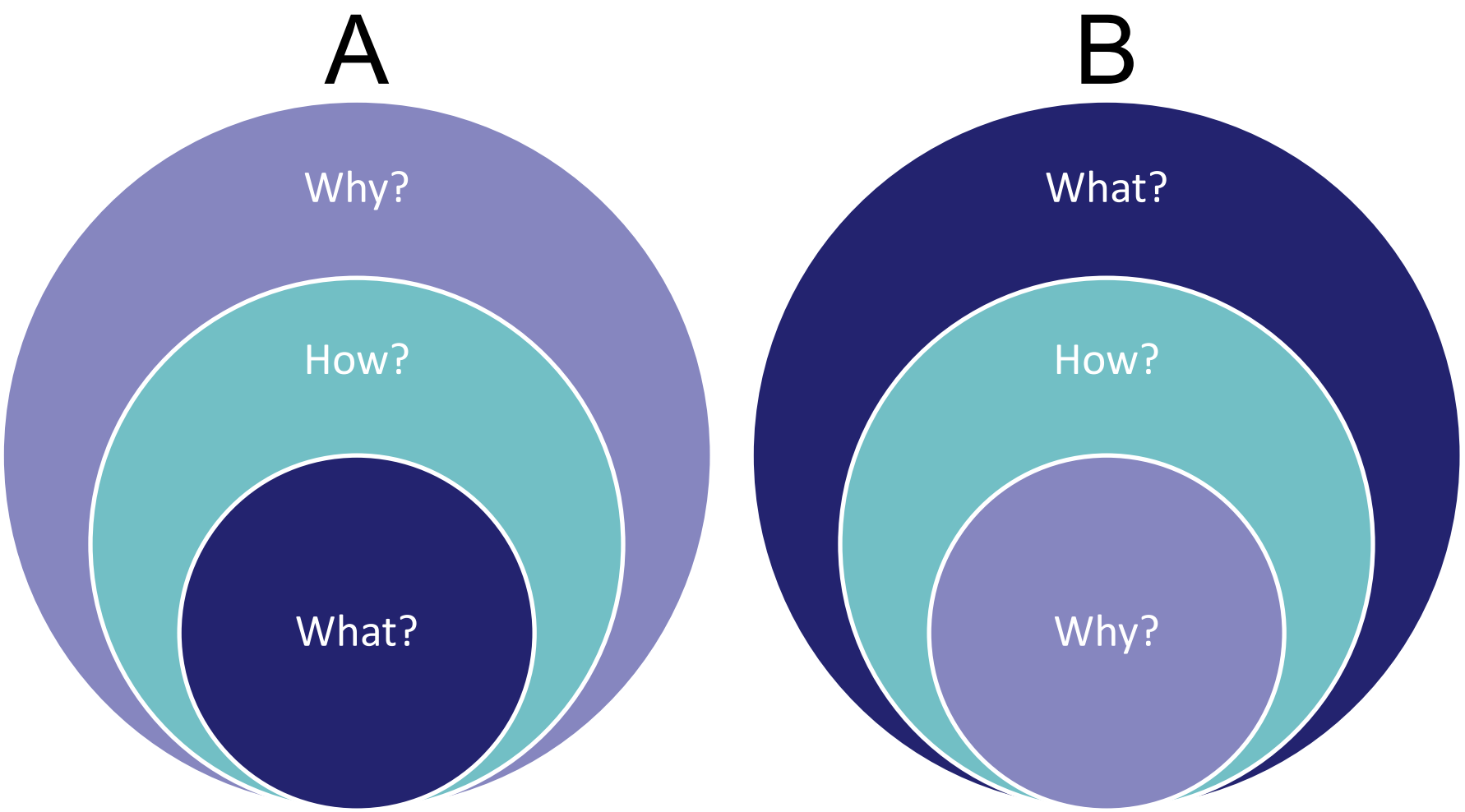
Un-Alignment vs Alignment


A
Why?
How?
What?
B
What?
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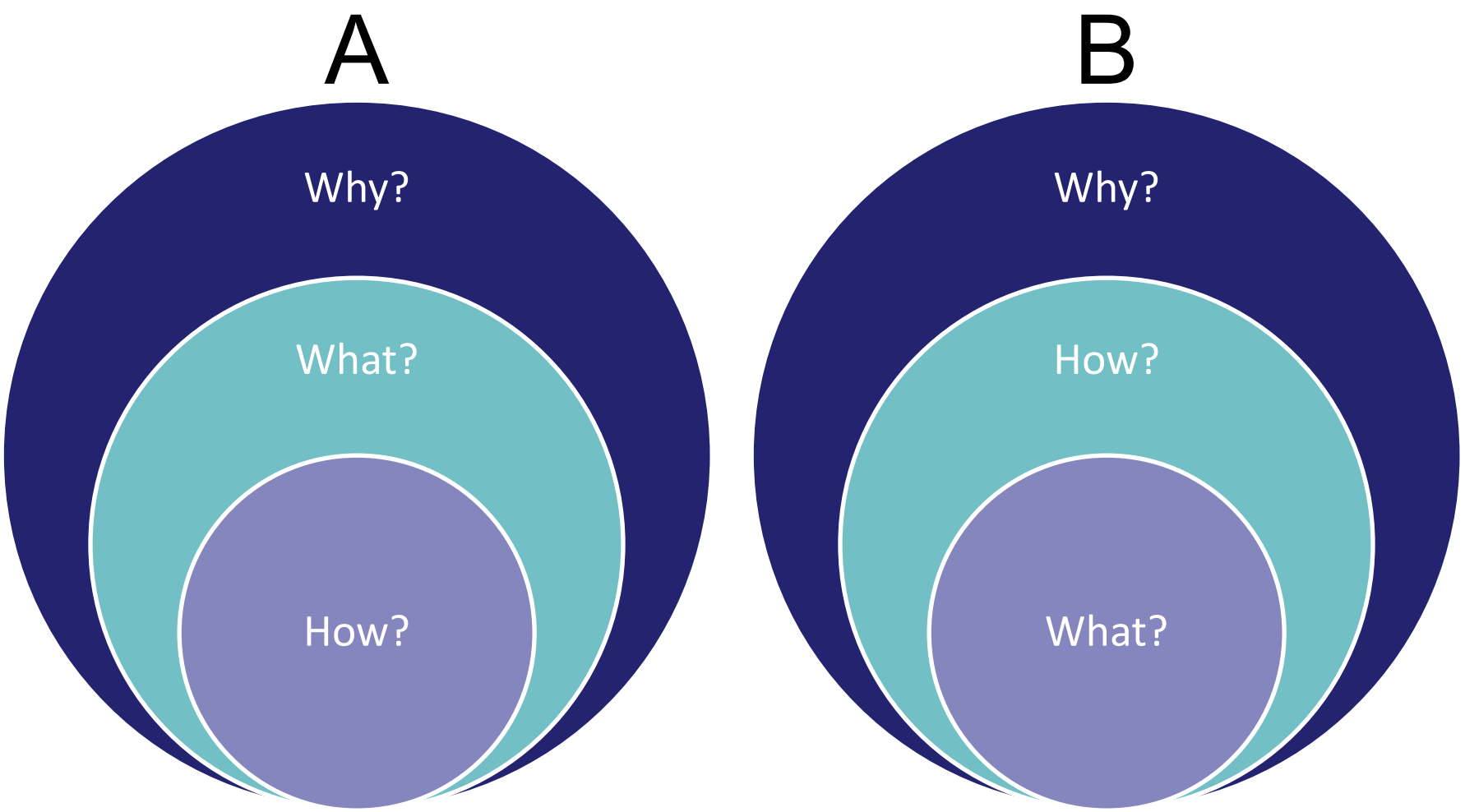
Why?


A
Why?
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B
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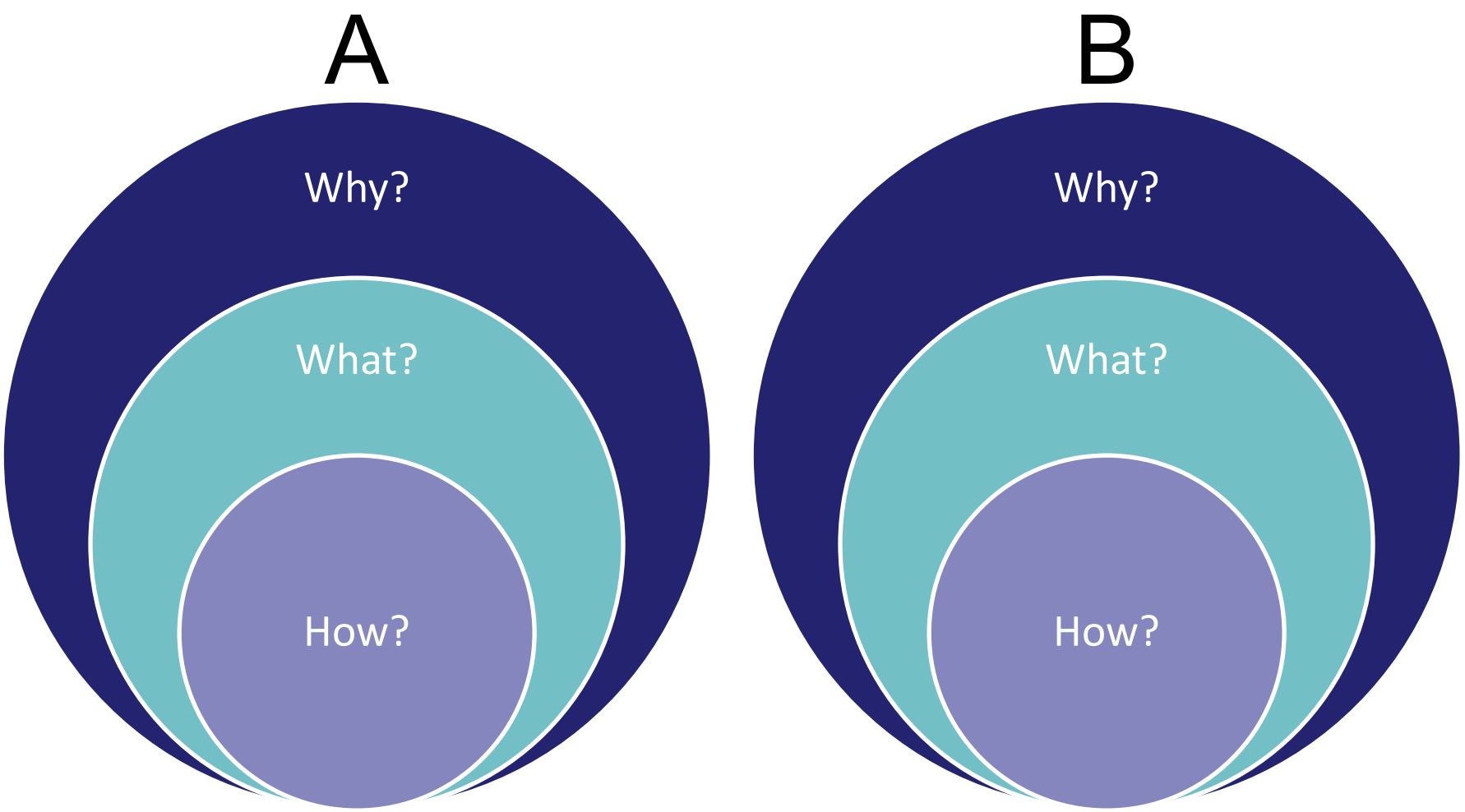
A
Why?
What?
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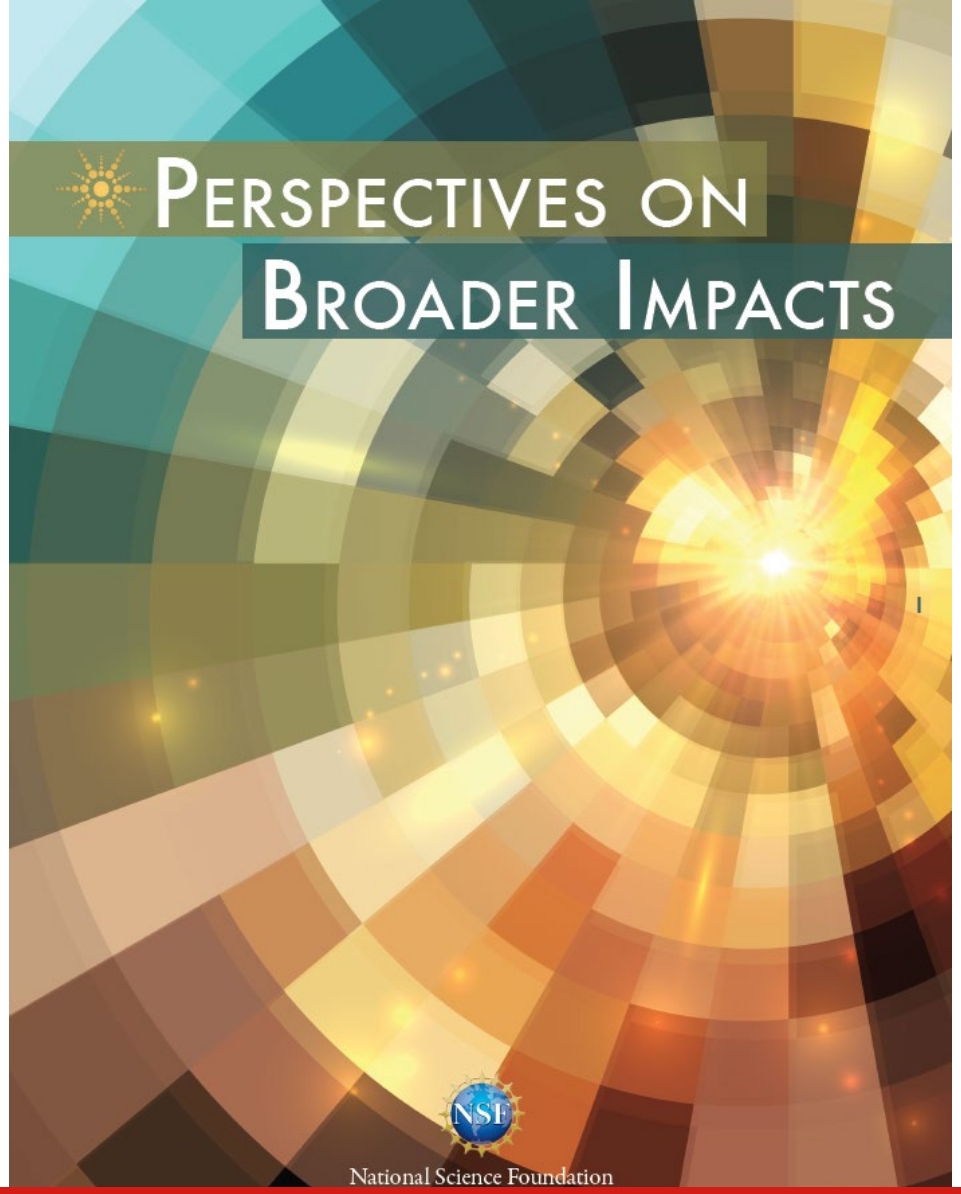
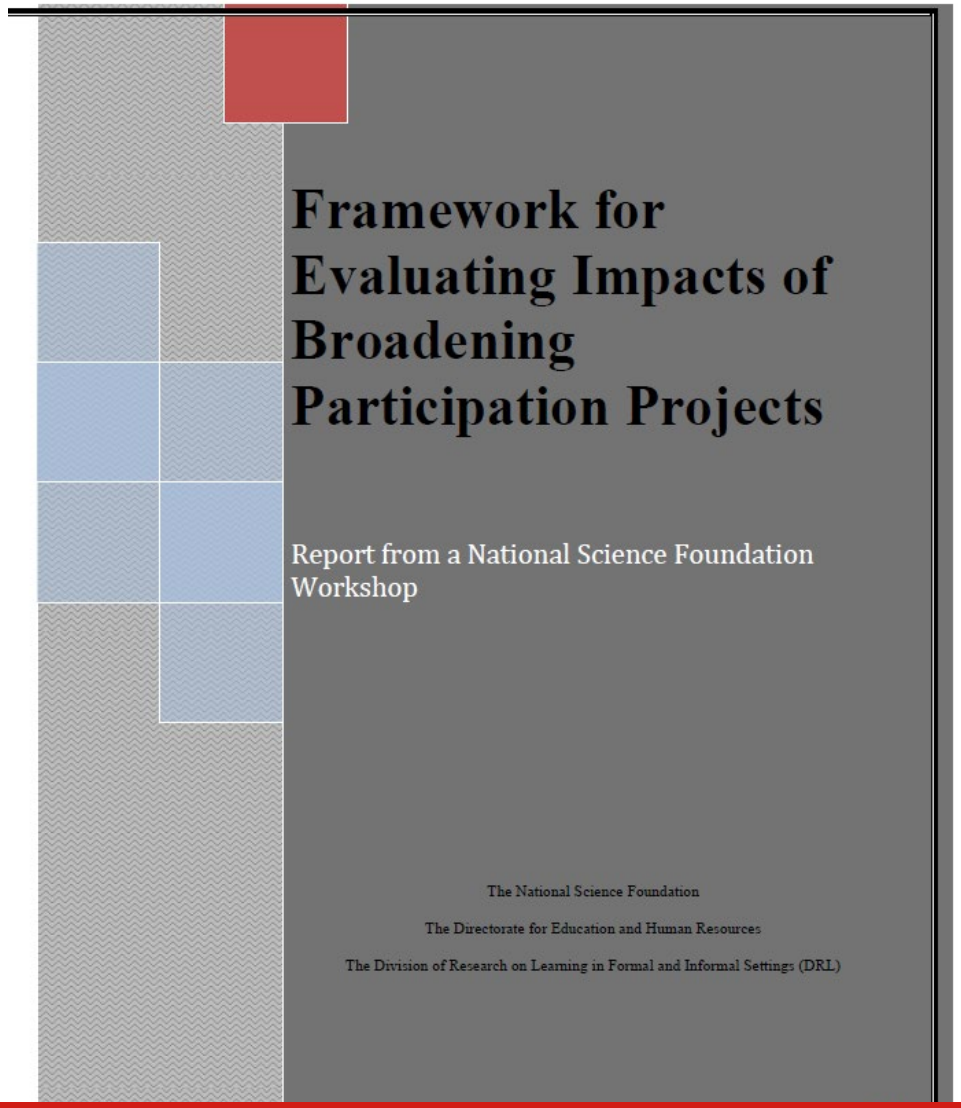
Why should we try to align our project with the Federal Vision?

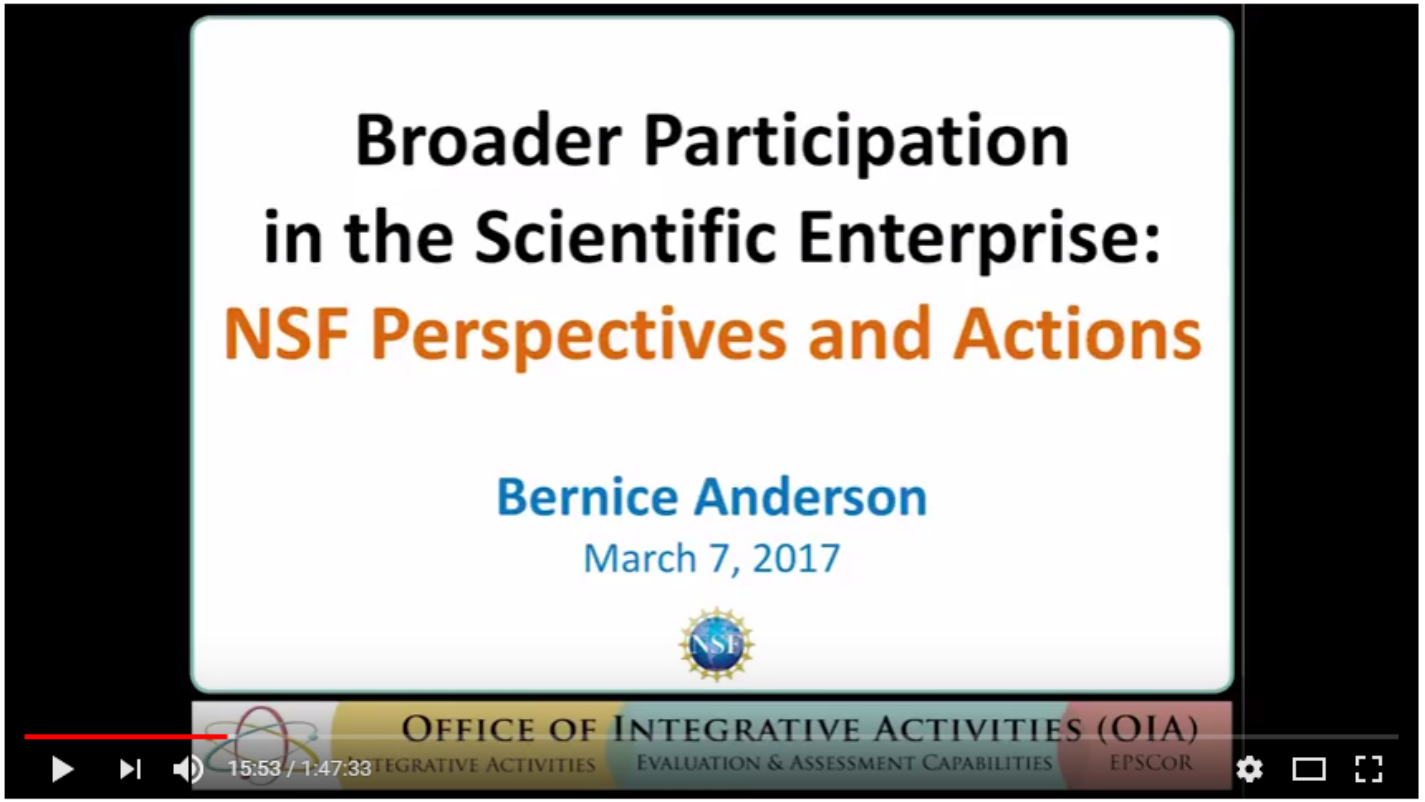
Because of Broader Impacts and Broader Participation



NSF. (2015). *Perspectives on Broader Impacts* (1st ed.). USA. Retrieved from https://www.nsf.gov/od/oia/publications/Broader_Impacts.pdf



Fitzgerald Bramwell, Patricia B. Campbell, Beatriz Chu Clewell, Darnella Davis, Norman Fortenberry, Antonio García, … Adam Stol. (2009). *Framework for Evaluating Impacts of Broadening Participation Projects* (1st ed.). USA: National Science Foundation. Retrieved from https://www.nsf.gov/od/broadeningparticipation/framework-evaluating-impacts-broadening-participation-projects_1101.pdf



Creating Strong Broader Impacts for NSF Proposals: Role of Evaluation & Broader Participation

54 views

2 0 SHARE

James Lipuma
Published on Mar 13, 2017

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This panel was hosted by NJIT on March 7 2017 as part of the Center for Leadership, Education, and Assessment Research (CLEAR) mission of supporting effective education. The full agenda

James Lipuma. (2017). *Creating Strong Broader Impacts for NSF Proposals: Role of Evaluation & Broader Participation*. NJIT, Newark, NJ, USA. Retrieved from https://www.youtube.com/watch?v=7rUa9WiBIIA&feature=youtu.be

NSF Review Criteria

Each year, the National Science Foundation (NSF) receives about 50,000 proposals for funding. Because there are far more meritorious proposals than NSF is able to fund, the foundation distinguishes among those proposals through a merit review process that incorporates two criteria: Intellectual Merit and Broader Impacts

Intellectual merit: the potential to advance knowledge.

Broader Impacts?

Broader impacts: the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

Broader impacts: the potential to benefit society.

Broader impacts: the potential to contribute to the achievement of specific, desired societal outcomes.

How can I benefit society?

How can my research contribute to society?

NSF's mission is to fund innovative science, and so the foundation does not want to be prescriptive about what qualifies as "broader impacts". The foundation states that "NSF projects, in the aggregate, should contribute more broadly to achieving societal goals.

These broader impacts may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project".

Broader Impacts are not one thing

- Your proposal can/may have different types of BI and may put more or less emphasis on this component
- Scale can be different as well
- Intellectual merit and broader impact are both important, and the interplay between them is not static
- Broader Impacts is not Broader Participation

Broader participation?

The CEOSE Recommendation

The CEOSE (Committee on Equal Opportunities in Science and Engineering) report requested that NSF launch a bold new initiative for broadening participation (BP) with the goal of eventually having the participation of scientists and engineers in Science, Technology, Engineering, and Math (STEM) fields mirror the population of the Nation.

The CEOSE (Committee on Equal Opportunities in Science and Engineering) report requested that NSF launch a bold new initiative for broadening participation (BP) with the goal of eventually having the participation of scientists and engineers in Science, Technology, Engineering, and Math (STEM) fields mirror the population of the Nation.

Institutional and systemic change

Scalable nation-wide

Integration of current research results on BP and education

Innovative, longitudinal analysis

Adoption of defined benchmarks

Support for translation, replication, and expansion of what works

Coordination of research centers and projects across levels of schooling, from pre-K to 20+

Direct financial support to individuals (Students, postdoctoral fellows, etc…)

Interagency and private sector partnerships

Long-term commitment to impact STEM employment, education and research

NSF BROADENING PARTICIPATION OPTIONS

Level of Investment by Level of Boldness (Size and Novelty of Effort) versus Potential Impact

BOLDNESS ↑	POTENTIAL IMPACT: LOW	POTENTIAL IMPACT: MEDIUM	POTENTIAL IMPACT: HIGH
FY16 High	• Call for Community Design Projects in response to the 2011-2012 CEOSE recommendation • Provide funding for BP infrastructure that PIs could "plug in" to for meaningful BP Broader Impacts	• Call for BP Institutes/Centers conducting BP research and increasing the number of UR scientists and engineers • Call for Partnerships/Centers that can translate BP research into scalable programs for widespread dissemination[1]	• Call for large-scale BP partnerships that cover research, implementation and scaling across preK-20+, focusing on institutional and systemic outcomes[2]
FY15 Medium	• Increase the availability of BP Supplements via DCLs from directorates • Make available BP data by subfields • Encourage PIs/faculty to participate in diversity meetings • Form a Rotator Corps for BP • Expand Science: Becoming the Messenger Workshop to have a BP focus	• Support additional replication of successful implementations[3] or additional partnering with model BP programs[4] • Leverage efforts like REU, I-Cubed (I^3), PULSE, etc. • Make supplemental funding available to <u>all</u> NSF research centers for BP goals (contingent on strong existing efforts) • Engage STEM Diversity Organizations and have an NSF BP presence at their national meetings	• Increase in number of Emphasis and other programs reaching the 50% threshold[5] • Offer support for mid- and large-scale BP theoretical studies with potential for large scale implementation • Identify strategic goals for BP for NSF that address all directorates. • Increase the prominence of BP language in the merit review criteria and in Annual and Final reporting

Call for large-scale BP partnerships that cover research, implementation and scaling across preK-20+, focusing on institutional and systemic outcomes

Call for BP Institutes/Centers conducting BP research and increasing the number of UR scientists and engineers

Offer support for mid- and large-scale BP theoretical studies with potential for large scale implementation

Broadening Participation is a high priority for NSF and the Nation, and although the rationale is clear the question remains...*how* can we think deeply and well about where we *want* this effort to lead us and most important... *why*?

Melvin Hall 2016

Collaboration & Opportunities at The College of Science & Liberal Arts, NJIT

NJIT
COMPUTING SCIENCES
NJIT
NJIT
HONORS
NJIT
MANAGEMENT

Aerospace Studies

Affiliated with the Air Force Reserve Officer Training Corps detachment based at NJIT, the Aerospace Studies Department has substantial scholarship opportunities available to students preparing for a career as a U.S. Air Force officer after graduation.

Biological Sciences

Federated with Rutgers University-Newark, the Department of Biological Sciences offers undergraduate and graduate programs spanning the study of individual neurons to global ecosystems.

Chemistry & Environmental Science

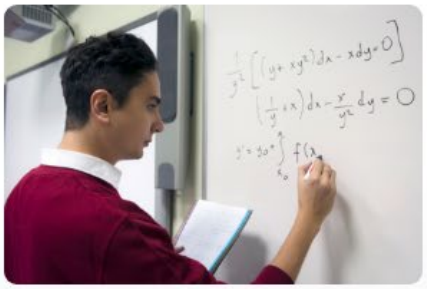
The Department of Chemistry and Environmental Science addresses scientific and social challenges through undergraduate and graduate programs in chemistry, biochemistry, pharmaceutical chemistry, and environmental science and policy.

History

The Department of History, federated with Rutgers University-Newark, offers the unique advantages of historical study at NJIT, including undergraduate and graduate specialization in the history of technology and health and medicine.

Humanities

Educational and research opportunities in the



Mathematical Sciences

The internationally recognized Department of

Physics

The Department of Physics is prominent worldwide

Theatre Arts and Technology

Offered jointly with Rutgers University-Newark, the

Principal investigator Bruce Bukiet, of the New Jersey Institute of Technology, heads a project that will work to increase the number of women pursuing STEM careers. (NSF INCLUDES, 2107)

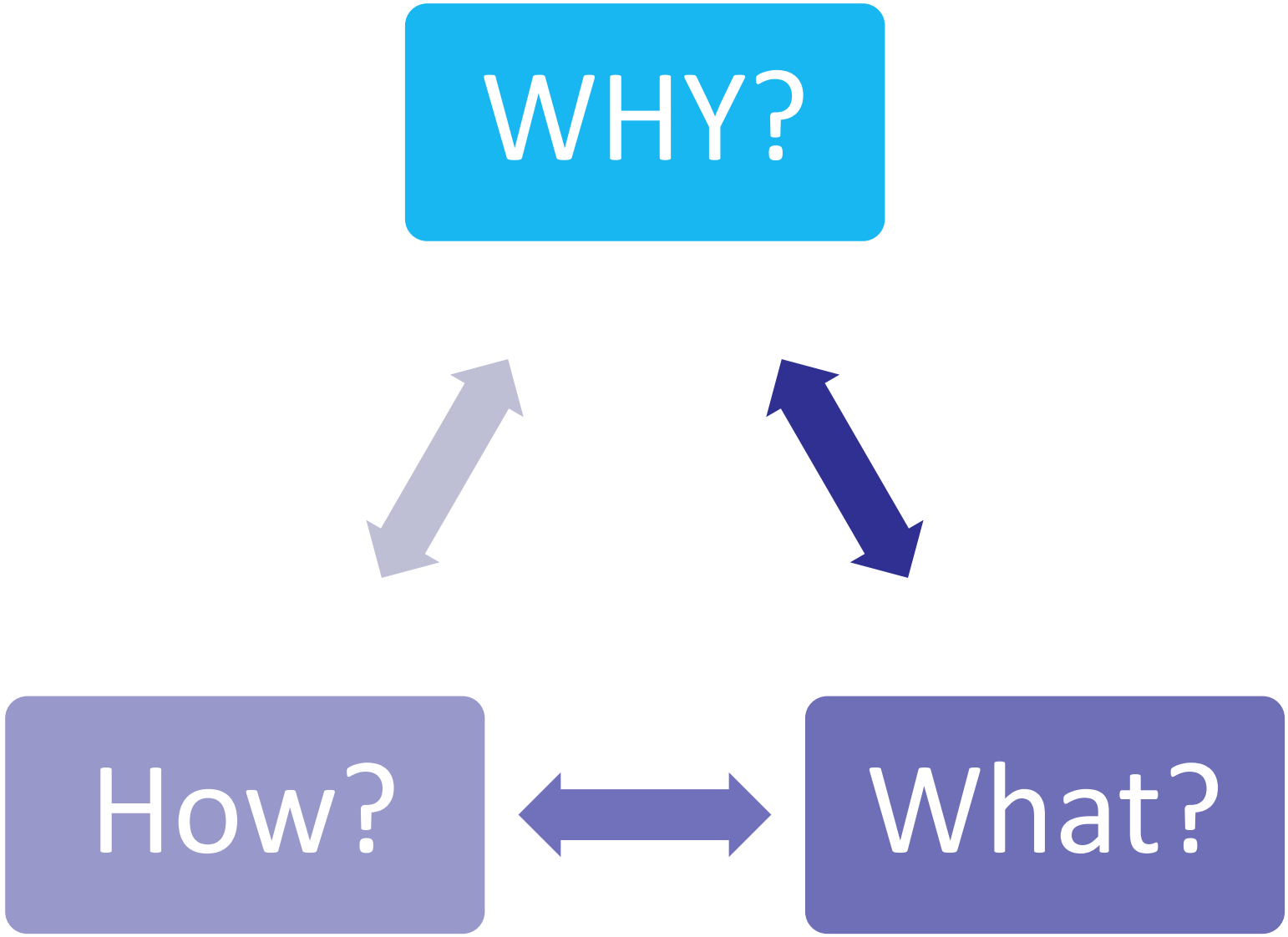
Focused on countering the notion that boys are naturally better at science and math — a stereotype that silently shapes girls' perceptions of their own abilities in these areas of study. The Leadership and iSTEAM for Females in Elementary School (LiFE) project strives to reverse this trend by finding effective ways to showcase science, technology, engineering and math (STEM) as a collaborative, innovative, people-rich space. NJIT is conducting the project with the Hillside, Morris Plains and Weehawken school districts in New Jersey.

Tanya Klein. (2017, September 12). Learning Strategies to Encourage Girls to Embrace STEM | NJIT News. Retrieved March 27, 2018, from http://news.njit.edu/learning-strategies-encourage-girls-embrace-stem/

Principal investigator Michelle Rittenhouse, of the New Jersey Institute of Technology, heads a project that focus on collaboration with New Jersey Vocational schools. (DOE, 2107)

Principal investigator James Lipuma, of the New Jersey Institute of Technology, heads a project that focus on Future Ready Schools for New Jersey. (NJ DOE, 2107)

Future Ready Schools - New Jersey. (2018, March 27). Retrieved March 27, 2018, from http://www.frsnj.org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