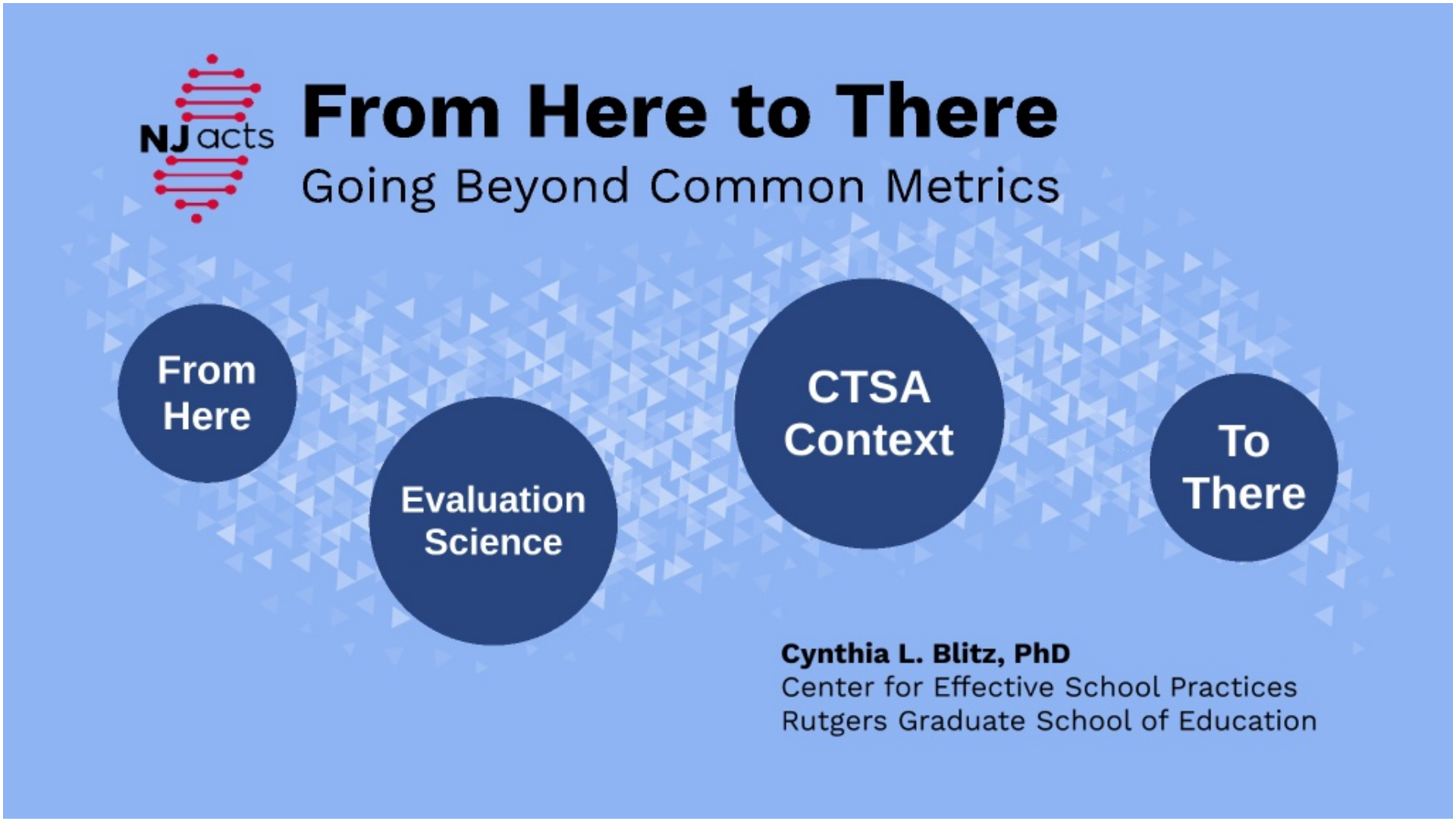

NJ acts
From Here to There
Going Beyond Common Metrics
From Here
Evaluation Science
CTSA Context
To There
Cynthia L. Blitz, PhD
Center for Effective School Practices
Rutgers Graduate School of Education

from here.

Why are these types of evaluations not particularly helpful?

Who is responding? What is it based on?

Are we capturing what a student has learned and/or how teaching pedagogy has played a role in this outcome?

How might the results from these prove to be more useful for a program, a specific course, a professor?

"I've been meaning to tell you ... some of the students have given you really negative evaluations."

our focus.

1. **From Here**
   what, who, why, when, how

2. **Evaluation Science**
   principles of effective evaluation, types, translational

3. **CTSA Context**
   evaluation, logic model, expectations, measures, common metrics

4. **To There**
   process & procedures, expectations, core metrics, discussion, next steps

about me.

- PhD, University of Pennsylvania
- Pre-doc fellowship, Penn Center for Mental Health
- Postdoc, Rutgers Institute for Health
- Assoc Director, Center for Behavioral Health Services & Criminal Justice Research
- Research Professor, Rutgers Grad School of Education
- Executive Director, Center for Effective School Practices

about CESP.

The Center for Effective School Practices

integrity in research & education

Rutgers CESP is a research and evaluation center within the Graduate School of Education that aims to bridge the persistent research-practice gap through implementation, adaptation, and dissemination of evidence-based practices.

ALTERNATE ROUTE

GRANT SERVICES

RESEARCH & EVALUATION

TECHNICAL ASSISTANCE

TRAINING AND EDUCATION

relevant projects.

why evaluate?

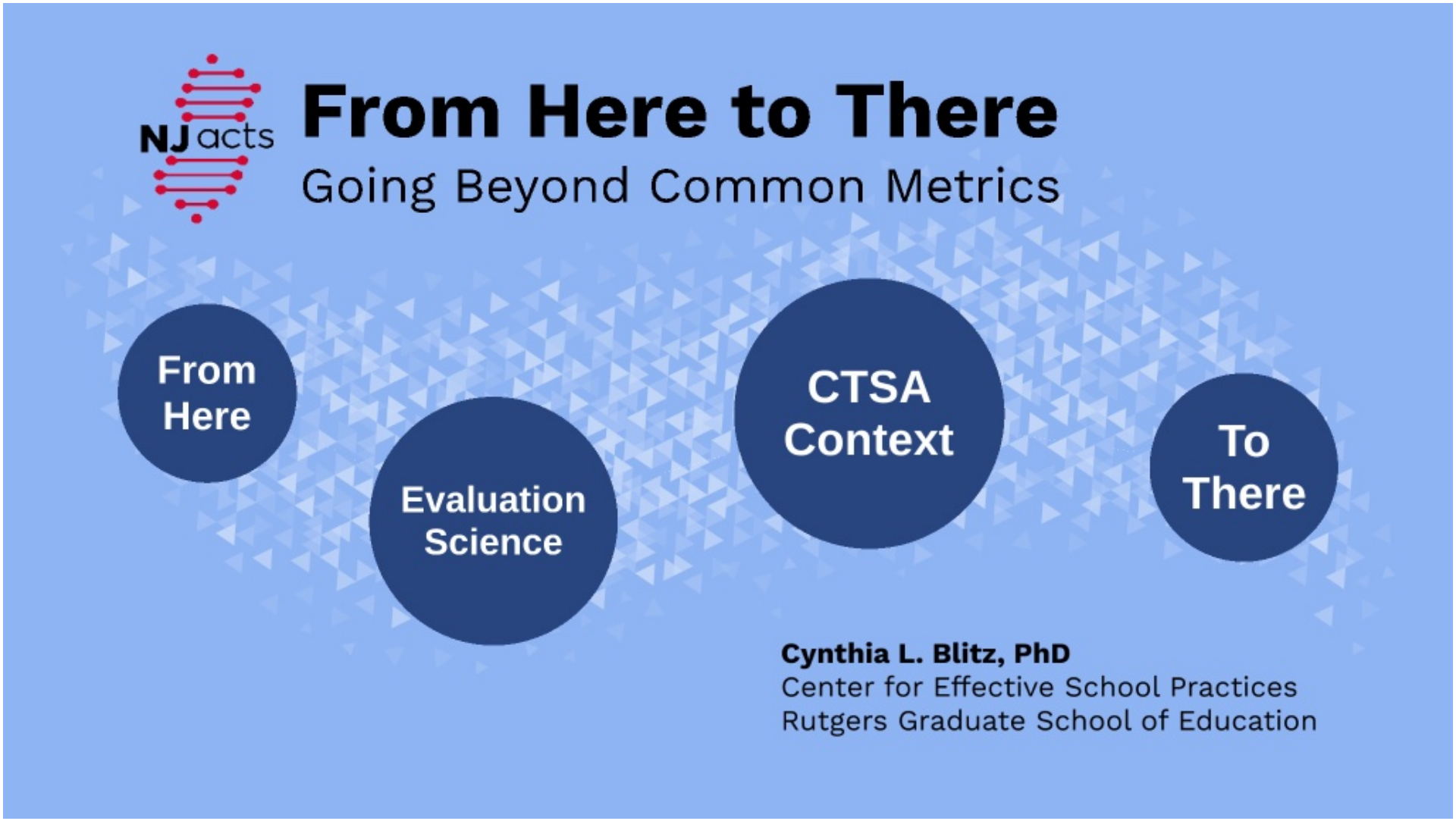
NIH Requirement

External Advisory Committee

Improvement

Internal Decision-Making

Reporting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evaluation.

- Rigorous Evaluation
- Evaluation Planning
- Logic Model
- Implementation Frameworks
- Translational Research

principles of rigorous evaluation.

Clear goals and objectives for the evaluation

- Independent, systematic investigation into **how, why, and to what extent** the stated goals and/or objectives f the program/intervention are achieved (as per the logic model)
- Adopt a broad perspective on program effects (**individual, team, organization, network, and community**) and focus centrally on the mechanisms and processes that link program inputs to program outcomes (**how works, not only what works**)
- Sensitive to the complexity of **tracking a dynamic change process** and also **consider potential unintended effects** (positive or negative)

principles of rigorous evaluation.

Reasonable scope

- Not everything can be evaluated or is worthy of evaluation, so strategic decisions about scope need to be made up front
- Function of the resources available to the evaluation
- Function of what key stakeholders (program leadership, funders, the scientific community, etc.) are most interested to learn about to inform their own evaluation of program efficacy and/or cost-effectiveness
- May also be limited to those questions that can be answered through scientific inquiry

principles of rigorous evaluation.

Theory- and context-grounded evaluation framework

- Grounded in theories that are relevant to the particular level (individual, team, organization) and context (e.g., clinical, org, community) of the intervention/program

- Theories provide an organizing framework to guide evaluation research and connect it with the relevant scientific knowledge base, specifically regarding:
  - Mechanisms and processes that connect specific program inputs and activities to specific outcomes at each level (e.g., linking training to knowledge and practice)
  - Influence of inter-organizational structures (e.g., leadership model), formal and informal relationships (e.g., coordination vs. competition), and differential capacity (e.g., resources, staff with relevant skills, etc.) on implementation and outcomes
  - Major and/or common moderators of implementation (i.e., barriers and facilitators) and effects (subgroup differences)

principles of rigorous evaluation.

Relevant methodology

- Appropriate mix of qualitative and quantitative methods to balance confirmation (testing and corroborating theoretical predictions about underlying mechanisms, causal processes, and effects) with discovery (generating new or unexpected insights)
- Use of valid (level- and context-appropriate) and reliable measurement instruments
- Transparency regarding the methodology and methodological choices made (to facilitate peer-review and replicability/reproducibility)

principles of rigorous evaluation.

Quality of data and communication of findings

- The ability to investigate indirect pathways that connect inputs to outcomes as well as monitor potential unintended effects is a function of the completeness & quality of data (qualitative and quantitative)
- Offers specific answers to specific questions about the program
- Reflect on consistency regarding the overall pattern of findings to contextualize an individual finding
- Ethical, honest, and professional (be aware, and guard against, external pressures and internal biases)

types of program evaluation.

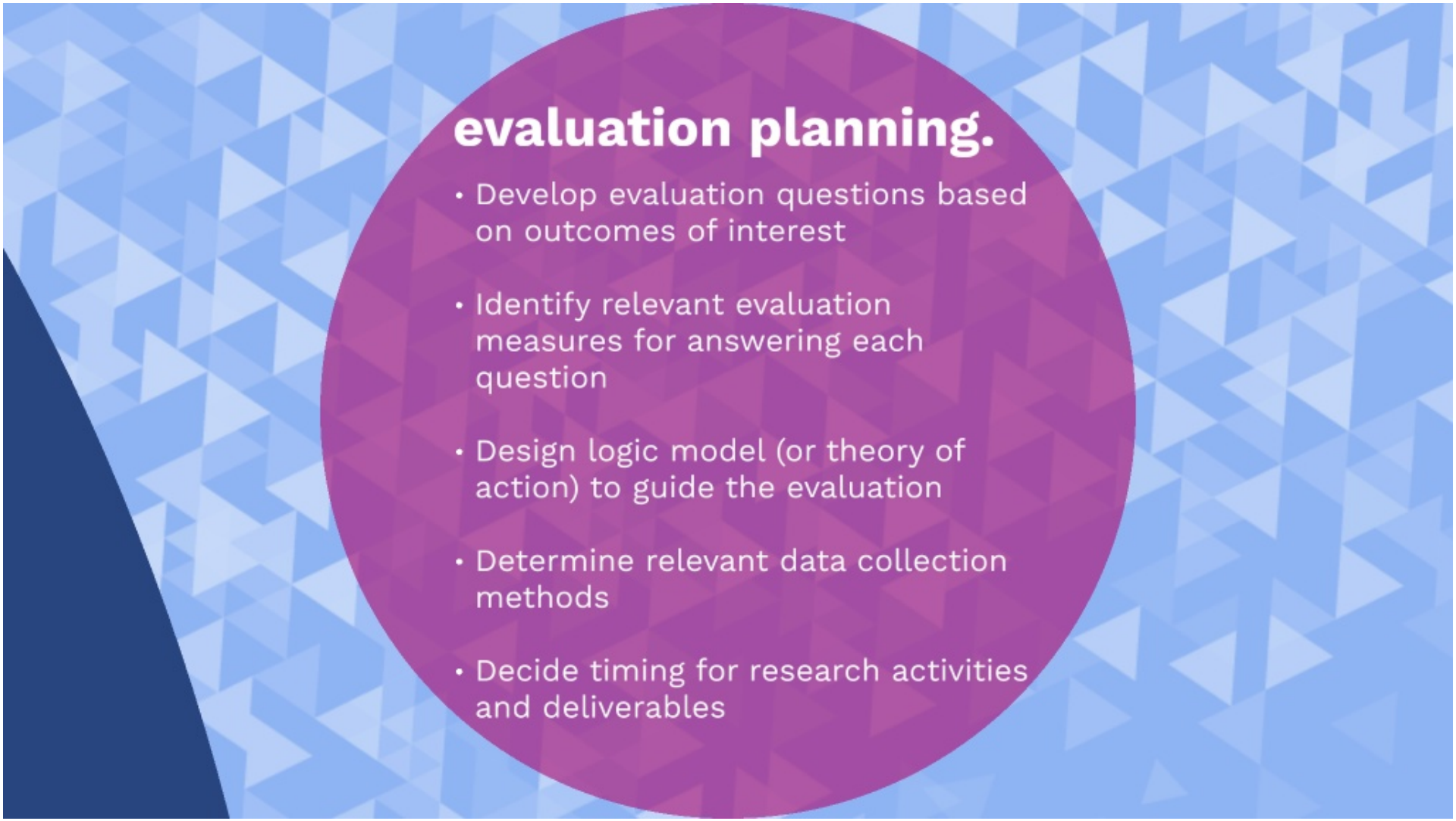
Formative - ensures that a program or program activity is feasible, appropriate, and acceptable before it is fully implemented (e.g., needs assessment, readiness for implementation, etc.)

Process/implementation - determines whether program activities have been implemented as intended (e.g., fidelity, dose, barriers, reach, acceptance, etc.)

Outcome/effectiveness - measures program effects by assessing progress in outcomes (e.g., answer questions about effects on knowledge, capacity, motivation, and behavior/ practice)

Economic (cost-effectiveness) - assesses what resources are being used in a program and their costs (direct and indirect) compared to outcomes

Impact - assesses program effectiveness in achieving its ultimate goals (e.g., improving patient care and health outcomes)

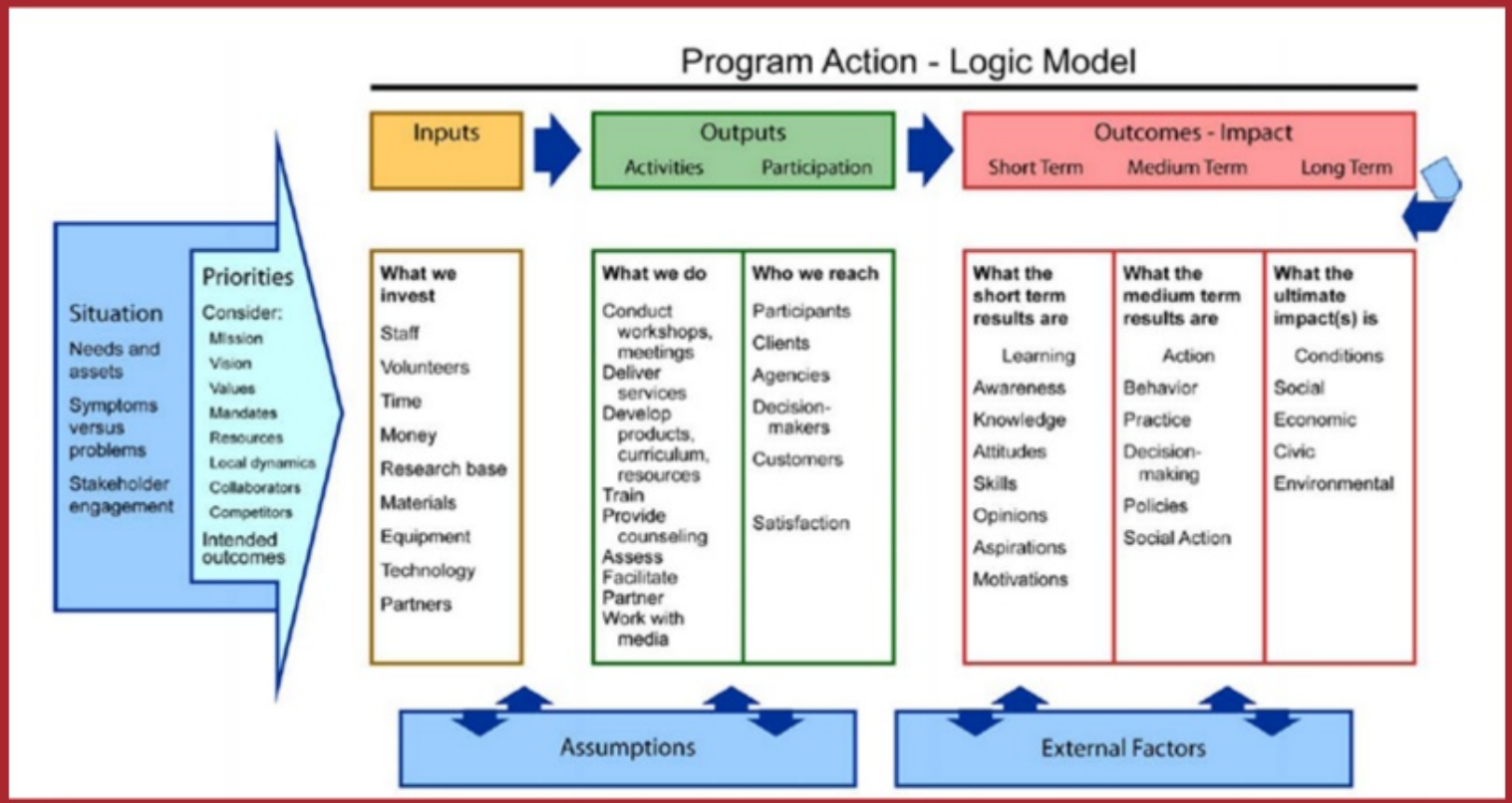

evaluation planning.
• Develop evaluation questions based on outcomes of interest
• Identify relevant evaluation measures for answering each question
• Design logic model (or theory of action) to guide the evaluation
• Determine relevant data collection methods
• Decide timing for research activities and deliverables

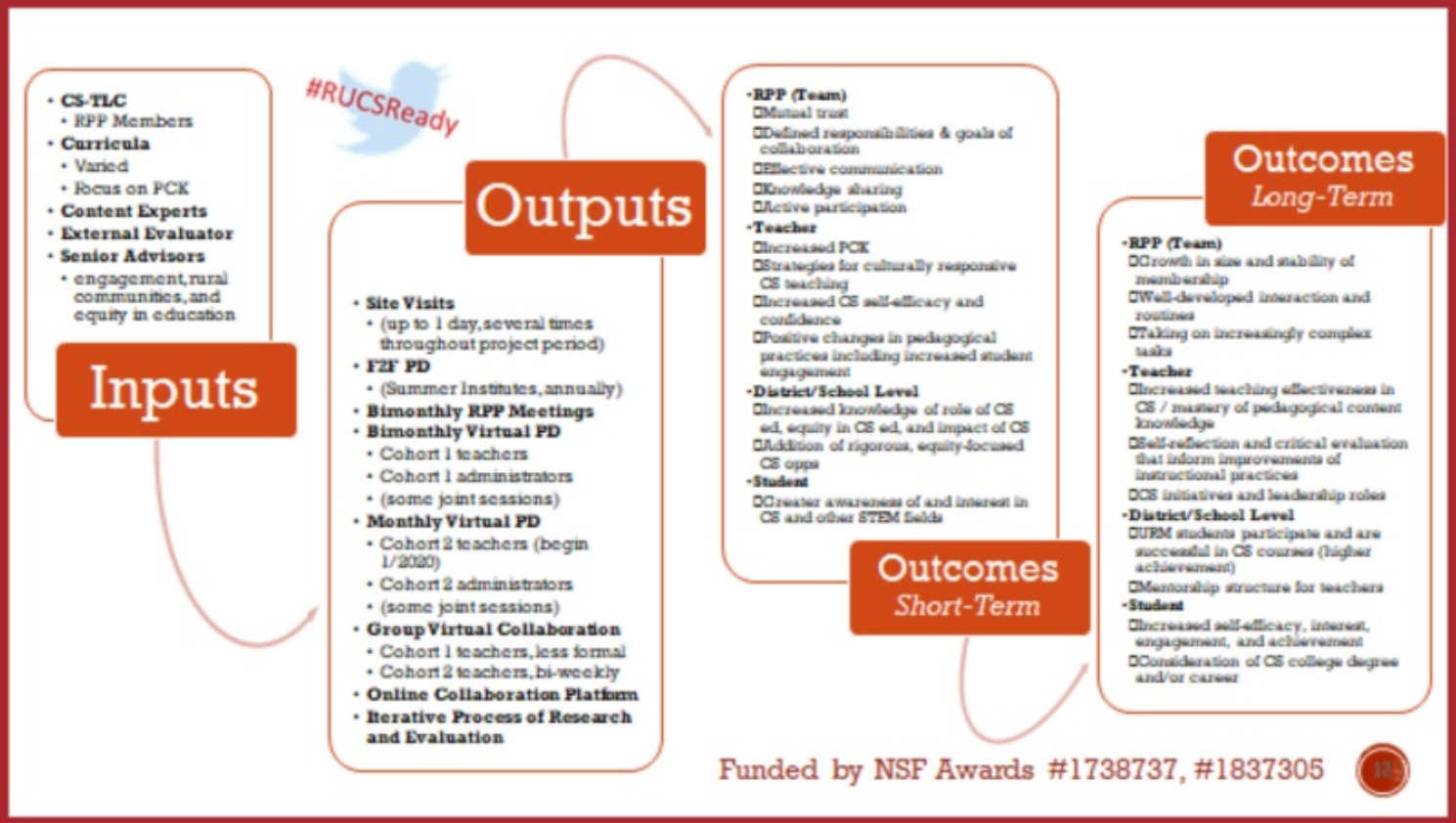
logic models.

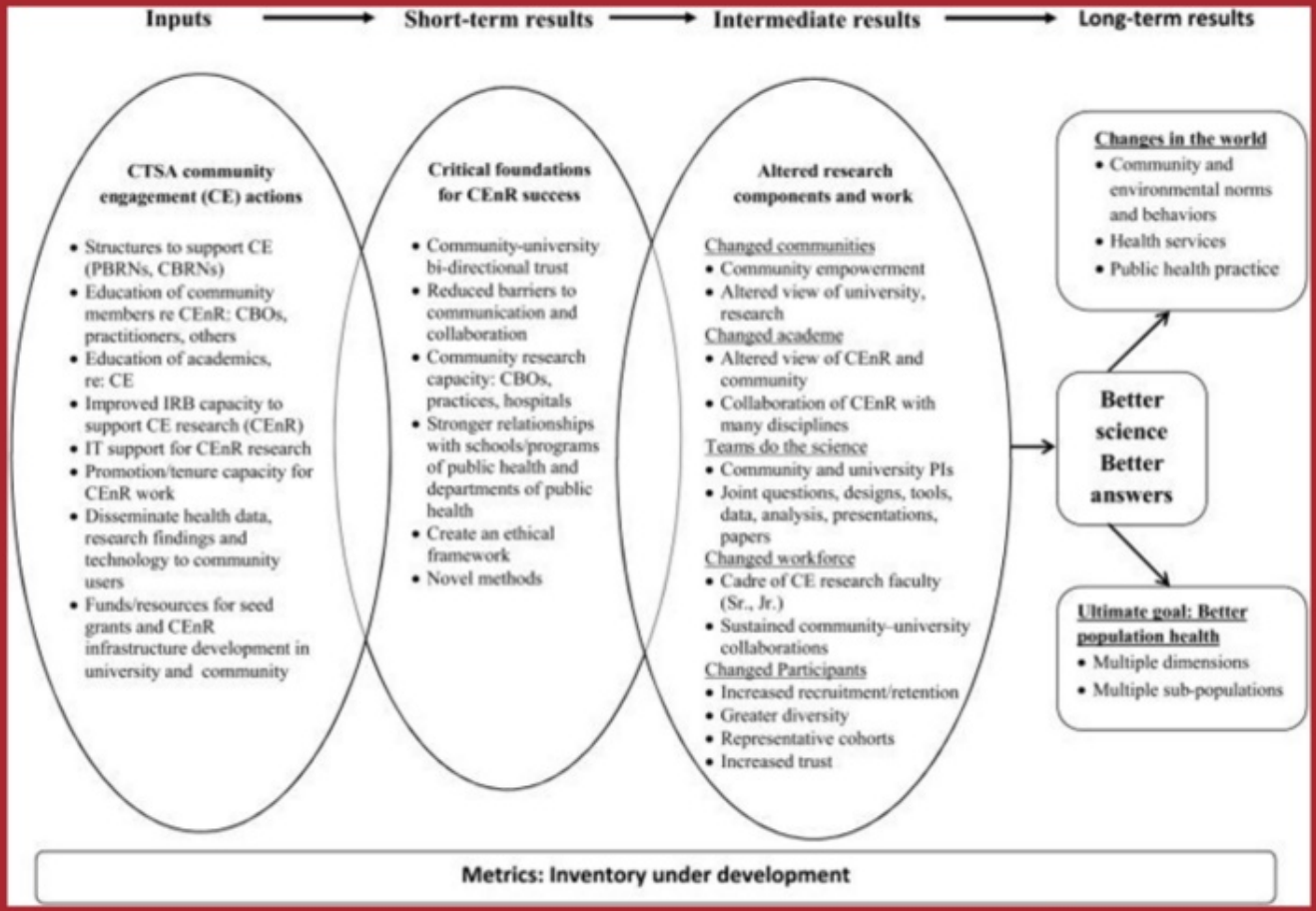
- Presents hypothesized relationship between program inputs, intervention activities and the desired outcomes – it describes how the intervention is expected to work (theory of change)

- Five core components of logic models:

  - Inputs (resources, contributions)
  - Outputs (activities, services, events that reach people targeted)
  - Outcomes (anticipated results or changes)
  - Assumptions (rationale)
  - External Factors

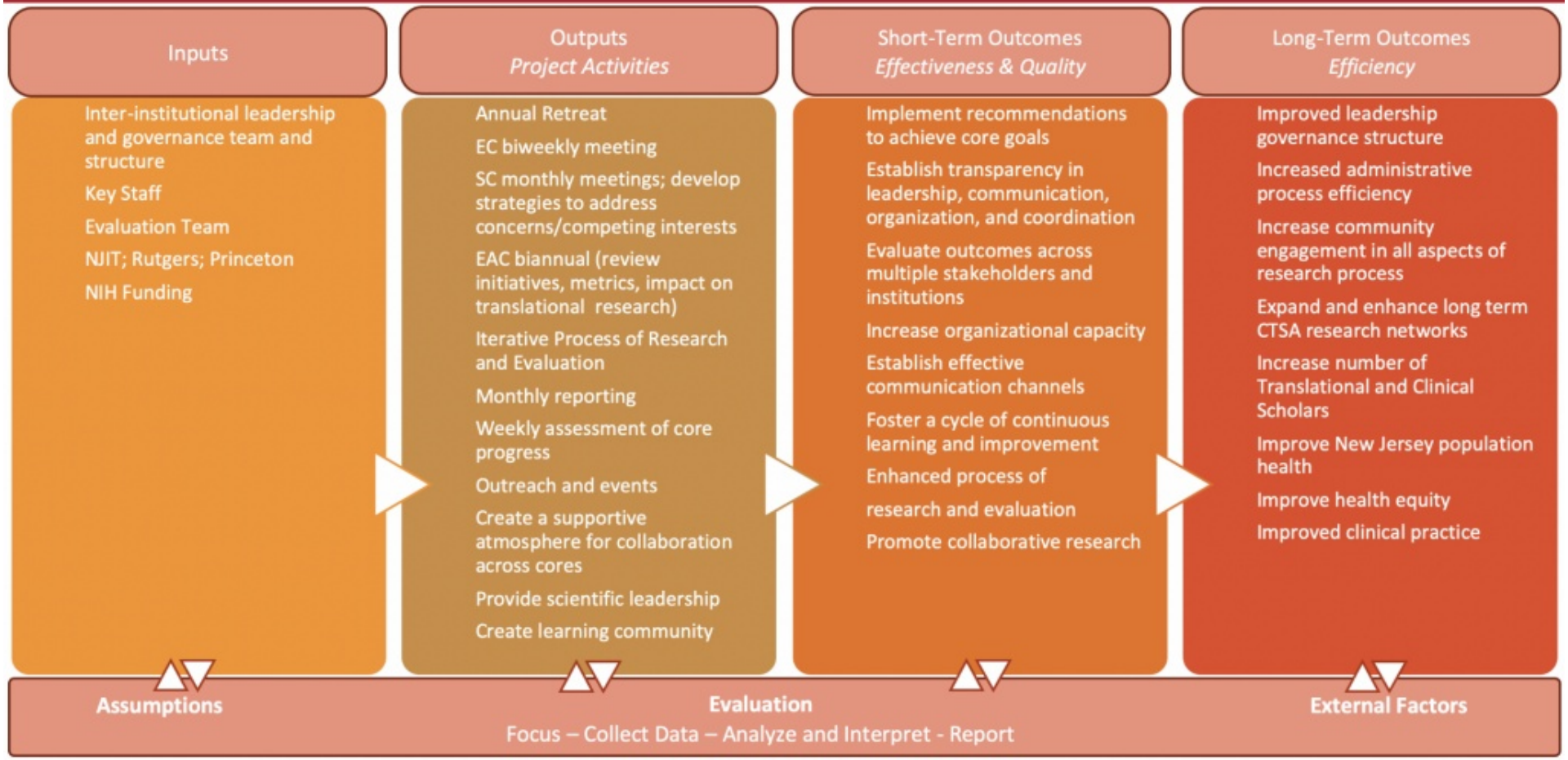

Program Action - Logic Model
Inputs
Outputs
Activities
Participation
Outcomes - Impact
Short Term
Medium Term
Long Term
Situation
Needs and assets
Symptoms versus problems
Stakeholder engagement
Priorities
Consider:
Mission
Vision
Values
Mandates
Resources
Local dynamics
Collaborators
Competitors
Intended outcomes
What we invest
Staff
Volunteers
Time
Money
Research base
Materials
Equipment
Technology
Partners
What we do
Conduct workshops, meetings
Deliver services
Develop products, curriculum, resources
Train
Provide counseling
Assess
Facilitate
Partner
Work with media
Who we reach
Participants
Clients
Agencies
Decision-makers
Customers
Satisfaction
What the short term results are
Learning
Awareness
Knowledge
Attitudes
Skills
Opinions
Aspirations
Motivations
What the medium term results are
Action
Behavior
Practice
Decision-making
Policies
Social Action
What the ultimate impact(s) is
Conditions
Social
Economic
Civic
Environmental
Assumptions
External Factors


Inputs
• CS-TLC
• RPP Members
• Curricula
• Varied
• Focus on PCK
• Content Experts
• External Evaluator
• Senior Advisors
• engagement, rural communities, and equity in education
#RUCSReady
Outputs
• Site Visits
• (up to 1 day, several times throughout project period)
• F2F PD
• (Summer Institutes, annually)
• Bimonthly RPP Meetings
• Bimonthly Virtual PD
• Cohort 1 teachers
• Cohort 1 administrators
• (some joint sessions)
• Monthly Virtual PD
• Cohort 2 teachers (begin 1/2020)
• Cohort 2 administrators
• (some joint sessions)
• Group Virtual Collaboration
• Cohort 1 teachers, less formal
• Cohort 2 teachers, bi-weekly
• Online Collaboration Platform
• Iterative Process of Research and Evaluation
Outcomes Short-Term
•RPP (Team)
☐Mutual trust
☐Defined responsibilities & goals of collaboration
☐Effective communication
☐Knowledge sharing
☐Active participation
•Teacher
☐Increased PCK
☐Strategies for culturally responsive CS teaching
☐Increased CS self-efficacy and confidence
☐Positive changes in pedagogical practices including increased student engagement
•District/School Level
☐Increased knowledge of role of CS ed, equity in CS ed, and impact of CS
☐Addition of rigorous, equity-focused CS opps
•Student
☐Greater awareness of and interest in CS and other STEM fields
Outcomes Long-Term
•RPP (Team)
☐Growth in size and stability of membership
☐Well-developed interaction and routines
☐Taking on increasingly complex tasks
•Teacher
☐Increased teaching effectiveness in CS / mastery of pedagogical content knowledge
☐Self-reflection and critical evaluation that inform improvements of instructional practices
☐CS initiatives and leadership roles
•District/School Level
☐URM students participate and are successful in CS courses (higher achievement)
☐Mentorship structure for teachers
•Student
☐Increased self-efficacy, interest, engagement, and achievement
☐Consideration of CS college degree and/or career
Funded by NSF Awards #1738737, #1837305
12



Eder, M. M., Carter-Edwards, L., Hurd, T. C., Rumala, B. B., & Wallerstein, N. (2013). A logic model for community engagement within the Clinical and Translational Science Awards consortium: can we measure what we model?. Academic medicine: journal of the Association of American Medical Colleges, 88(10), 1430–1436. doi:10.1097/ACM.0b013e31829b54ae

preliminary administrative core logic model.



implementation evaluation frameworks.

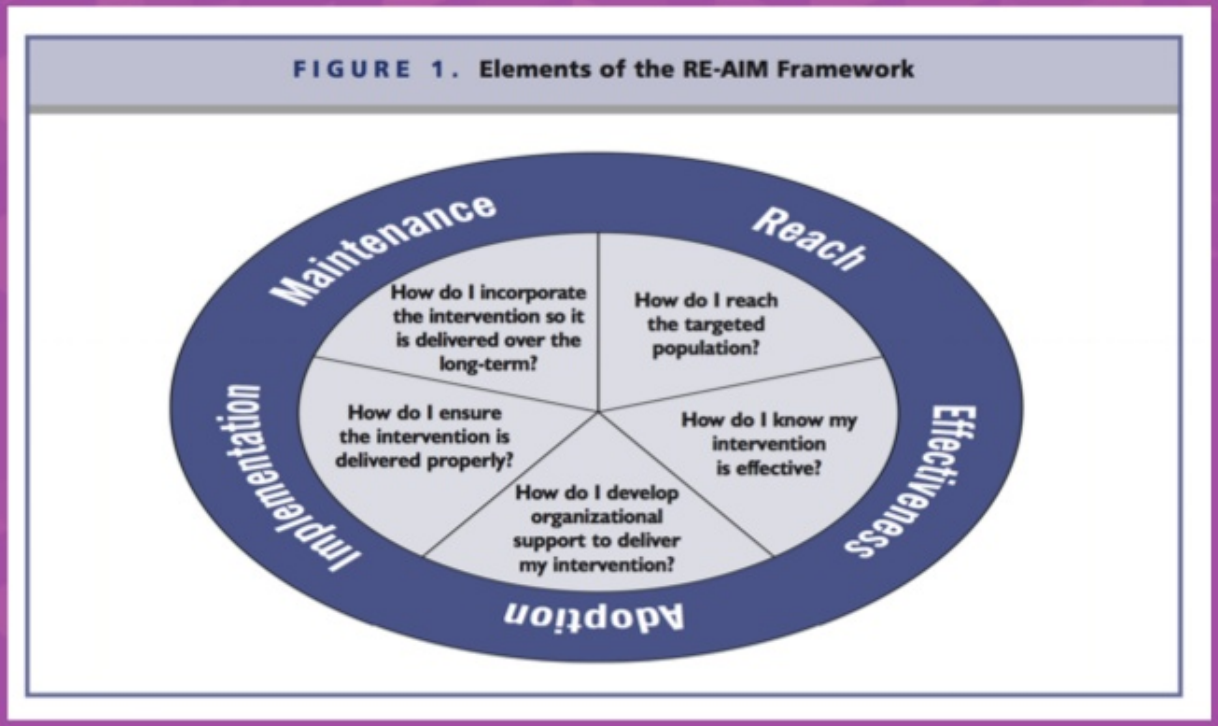
RE-AIM framework

Reach
Efficacy or effectiveness
Adoption (by target staff, settings, or institutions)
Implementation
Maintenance

Glasgow, R. E., Vogt, T. M., & Boles, S. M. (1999). Evaluating the public health impact of health promotion interventions: the RE-AIM framework. American journal of public health, 89(9), 1322–1327. doi:10.2105/ajph.89.9.1322

re-aim framework.

Dimension	Original RE-AIM Definition
Reach	The absolute number, proportion, and representativeness of individuals who are willing to participate in a given initiative
Effectiveness	The effect of an intervention on important outcomes, including potential negative effects, quality of life, and economic outcomes
Adoption	The absolute number, proportion, and representativeness of settings and intervention agents who are willing to initiate a program
Implementation	At the setting level, implementation refers to the intervention agents' fidelity to the various elements of an intervention's protocol
Maintenance	The extent to which a program or policy becomes institutionalized or part of the routine



CFIR: intervention characteristics.

I. INTERVENTION CHARACTERISTICS		
A	Intervention Source	Perception of key stakeholders about whether the intervention is externally or internally developed.
B	Evidence Strength & Quality	Stakeholders' perceptions of the quality and validity of evidence supporting the belief that the intervention will have desired outcomes.
C	Relative advantage	Stakeholders' perception of the advantage of implementing the intervention versus an alternative solution.
D	Adaptability	The degree to which an intervention can be adapted, tailored, refined, or reinvented to meet local needs.
E	Trialability	The ability to test the intervention on a small scale in the organization [8], and to be able to reverse course (undo implementation) if warranted.
F	Complexity	Perceived difficulty of implementation, reflected by duration, scope, radicalness, disruptiveness, centrality, and intricacy and number of steps required to implement
G	Design Quality and Packaging	Perceived excellence in how the intervention is bundled, presented, and assembled
H	Cost	Costs of the intervention and costs associated with implementing that intervention including investment, supply, and opportunity costs.

Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implementation science, 4(1), 50.

CFIR: characteristics of individuals.

IV. CHARACTERISTICS OF INDIVIDUALS		
A	Knowledge & Beliefs about the Intervention	Individuals' attitudes toward and value placed on the intervention as well as familiarity with facts, truths, and principles related to the intervention.
B	Self-efficacy	Individual belief in their own capabilities to execute courses of action to achieve implementation goals.
C	Individual Stage of Change	Characterization of the phase an individual is in, as he or she progresses toward skilled, enthusiastic, and sustained use of the intervention.
D	Individual Identification with Organization	A broad construct related to how individuals perceive the organization and their relationship and degree of commitment with that organization.
E	Other Personal Attributes	A broad construct to include other personal traits such as tolerance of ambiguity, intellectual ability, motivation, values, competence, capacity, and learning style.

CFIR: outer setting.

II. OUTER SETTING		
A	Patient Needs & Resources	The extent to which patient needs, as well as barriers and facilitators to meet those needs are accurately known and prioritized by the organization.
B	Cosmopolitanism	The degree to which an organization is networked with other external organizations.
C	Peer Pressure	Mimetic or competitive pressure to implement an intervention; typically because most or other key peer or competing organizations have already implemented or in a bid for a competitive edge.
D	External Policy & Incentives	A broad construct that includes external strategies to spread interventions including policy and regulations (governmental or other central entity), external mandates, recommendations and guidelines, pay-for-performance, collaboratives, and public or benchmark reporting.

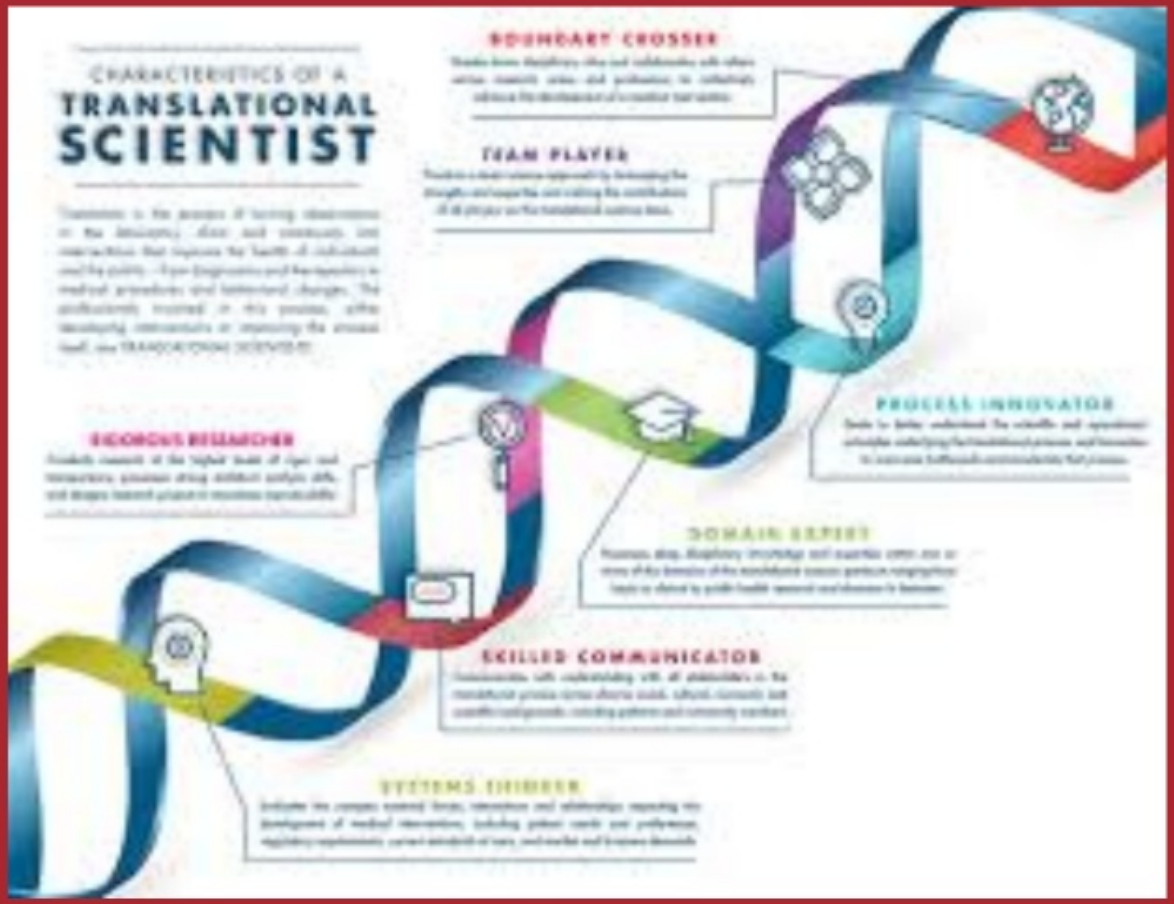
CFIR: inner setting.

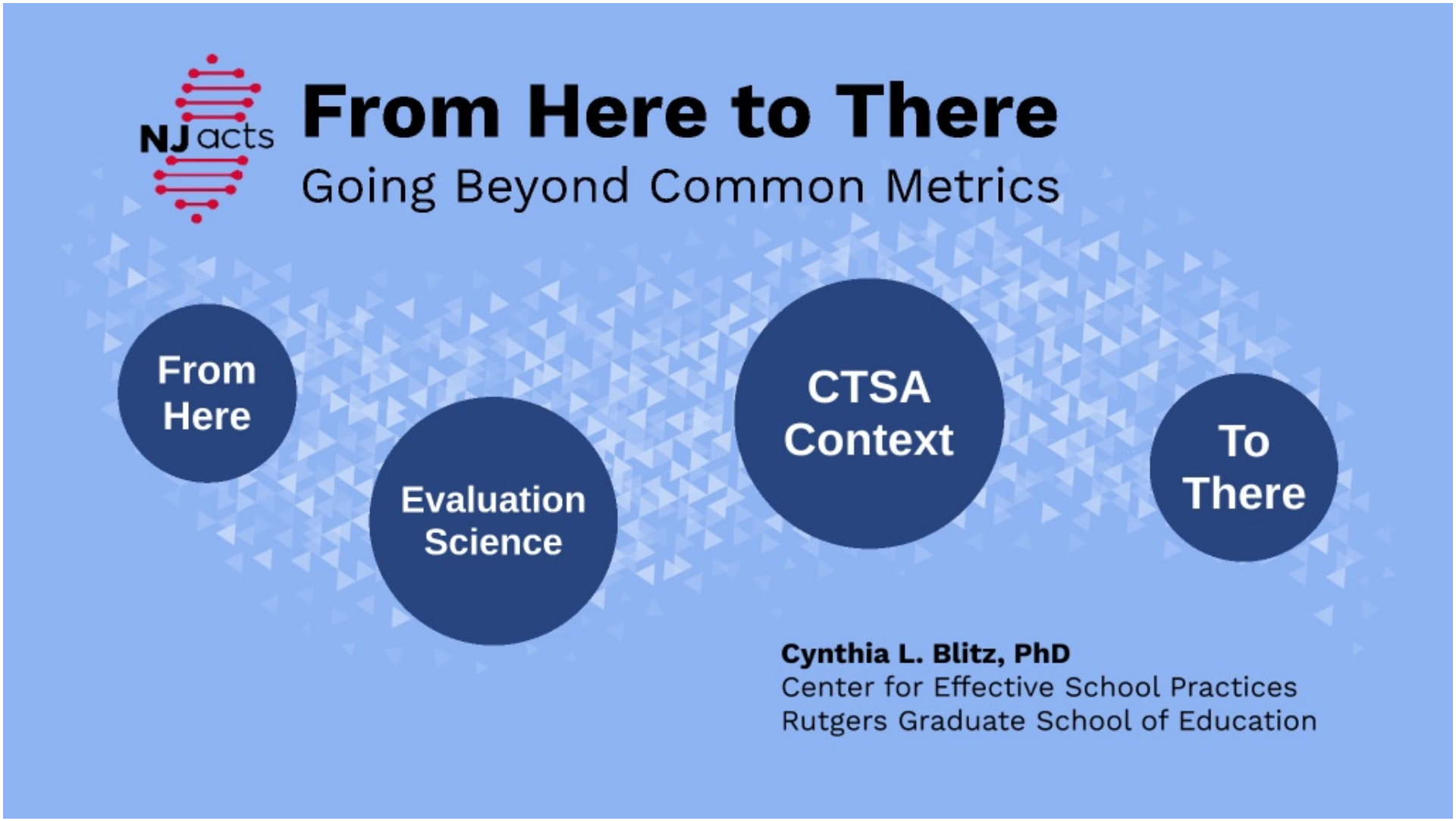
III. INNER SETTING		
A	Structural Characteristics	The social architecture, age, maturity, and size of an organization.
B	Networks & Communications	The nature and quality of webs of social networks and the nature and quality of formal and informal communications within an organization.
C	Culture	Norms, values, and basic assumptions of a given organization.
D	Implementation Climate	The absorptive capacity for change, shared receptivity of involved individuals to an intervention and the extent to which use of that intervention will be rewarded, supported, and expected within their organization.
1	Tension for Change	The degree to which stakeholders perceive the current situation as intolerable or needing change.
2	Compatibility	The degree of tangible fit between meaning and values attached to the intervention by involved individuals, how those align with individuals' own norms, values, and perceived risks and needs, and how the intervention fits with existing workflows and systems.
3	Relative Priority	Individuals' shared perception of the importance of the implementation within the organization.
4	Organizational Incentives & Rewards	Extrinsic incentives such as goal-sharing awards, performance reviews, promotions, and raises in salary and less tangible incentives such as increased stature or respect.
5	Goals and Feedback	The degree to which goals are clearly communicated, acted upon, and fed back to staff and alignment of that feedback with goals.
6	Learning Climate	A climate in which: a) leaders express their own fallibility and need for team members' assistance and input; b) team members feel that they are essential, valued, and knowledgeable partners in the change process; c) individuals feel psychologically safe to try new methods; and d) there is sufficient time and space for reflective thinking and evaluation.

CFIR: process.

V. PROCESS		
A	Planning	The degree to which a scheme or method of behavior and tasks for implementing an intervention are developed in advance and the quality of those schemes or methods.
B	Engaging	Attracting and involving appropriate individuals in the implementation and use of the intervention through a combined strategy of social marketing, education, role modeling, training, and other similar activities.
1	Opinion Leaders	Individuals in an organization who have formal or informal influence on the attitudes and beliefs of their colleagues with respect to implementing the intervention
2	Formally appointed internal implementation leaders	Individuals from within the organization who have been formally appointed with responsibility for implementing an intervention as coordinator, project manager, team leader, or other similar role.
3	Champions	"Individuals who dedicate themselves to supporting, marketing, and 'driving through' an [implementation]" [101](p. 182), overcoming indifference or resistance that the intervention may provoke in an organization.
4	External Change Agents	Individuals who are affiliated with an outside entity who formally influence or facilitate intervention decisions in a desirable direction.
C	Executing	Carrying out or accomplishing the implementation according to plan.
D	Reflecting & Evaluating	Quantitative and qualitative feedback about the progress and quality of implementation accompanied with regular personal and team debriefing about progress and experience.

translational research.

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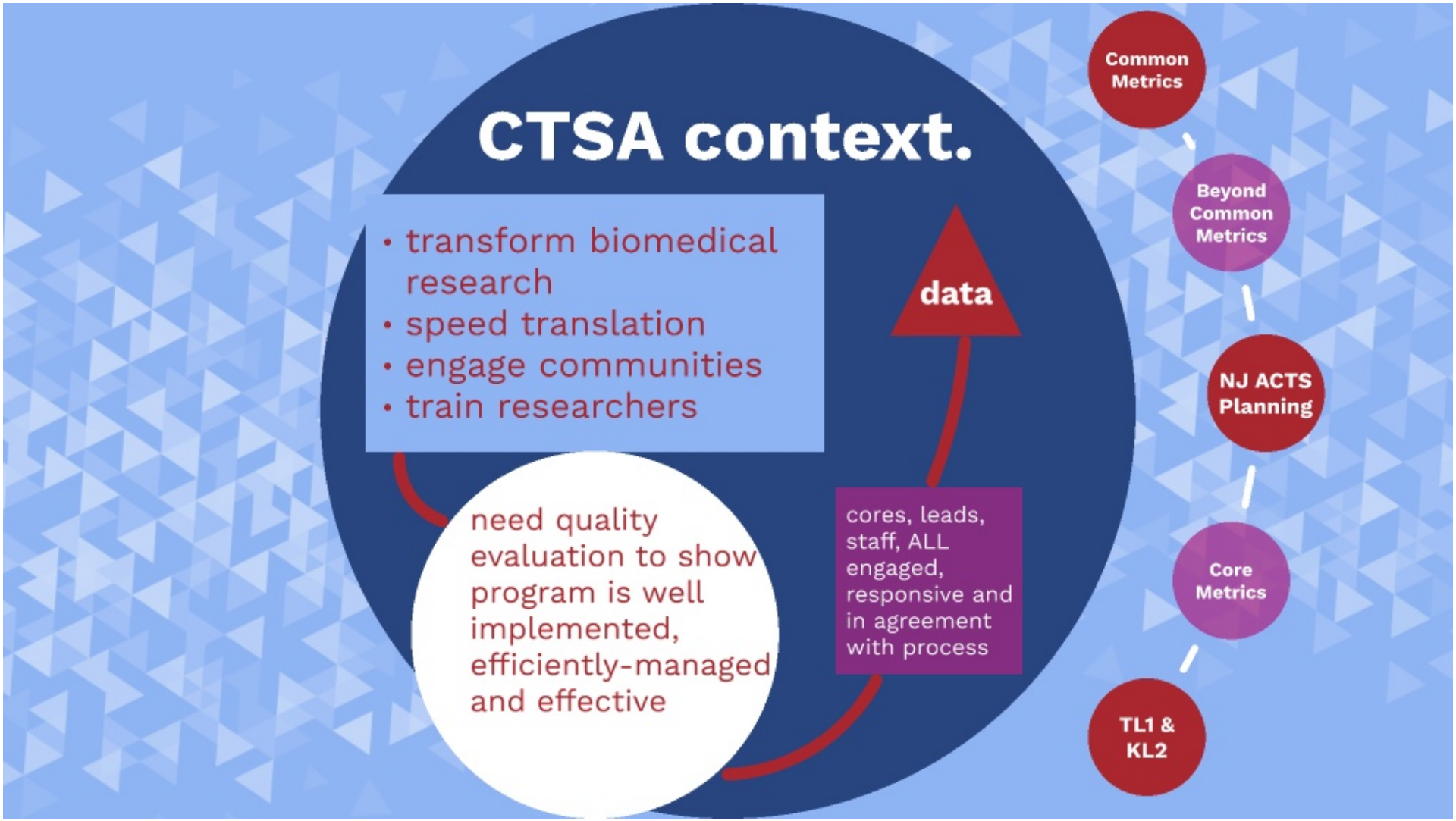
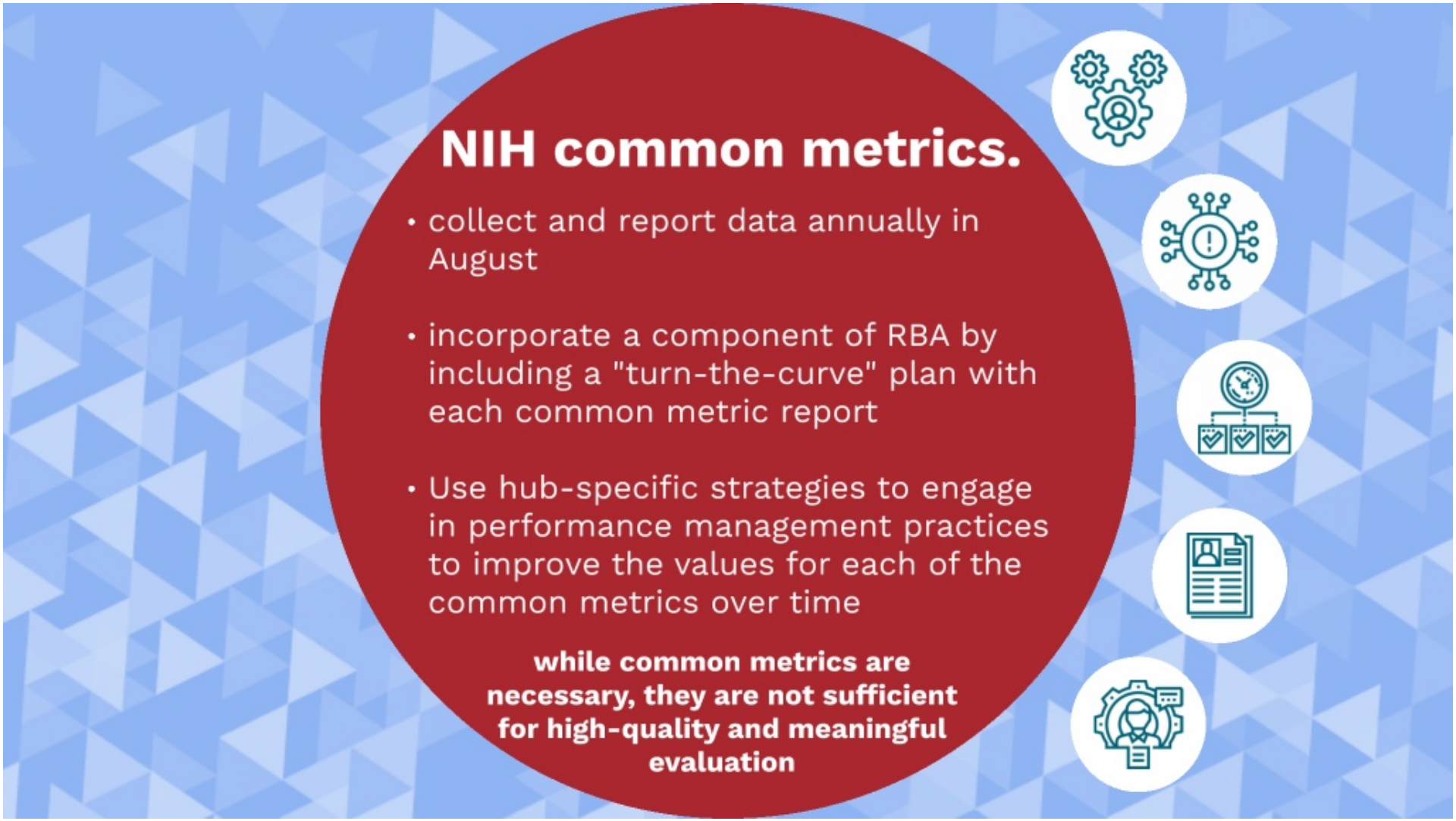

CTSA context.
• transform biomedical research
• speed translation
• engage communities
• train researchers
data
need quality evaluation to show program is well implemented, efficiently-managed and effective
cores, leads, staff, ALL engaged, responsive and in agreement with process
Common Metrics
Beyond Common Metrics
NJ ACTS Planning
Core Metrics
TL1 & KL2


NIH common metrics.
• collect and report data annually in August
• incorporate a component of RBA by including a "turn-the-curve" plan with each common metric report
• Use hub-specific strategies to engage in performance management practices to improve the values for each of the common metrics over time
while common metrics are necessary, they are not sufficient for high-quality and meaningful evaluation

careers in clinical & translational research.

The purpose of this metric is to measure and develop strategic management plans to enhance the extent to which CTSA Program hubs and the Consortium as a whole are training and supporting scientists to remain engaged in clinical and translational research into the future

informatics common metric.

The purpose of this metric is to Improve the interoperability of data within multiple systems by making the data adhere to the FAIR data principles to ultimately enable rich machine readable data.

This common metric will improve local as well as network capacity to efficiently use data to conduct research. Specifically, the metrics on different data types will aid local hubs in prioritizing additions to their data repositories. Improving the CTSA Program's clinical research data ecosystem can enhance the effectiveness of collaborative initiatives within and outside of the CTSA Program to provide tools to identify patient cohorts.

median IRB review duration.

The purpose of this metric is to measure IRB duration and develop strategic management plans, including collaborations, to shorten the time it takes to receive IRB approval. Long IRB review duration can delay study start, prolonging the time until benefits of clinical and translational science findings can be realized.

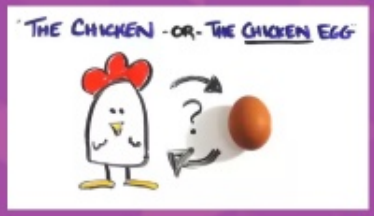
pilot funding publications and subsequent funding.

The purpose of this metric is to measure and develop strategic management plans to ensure that important findings from research studies supported by the CTSA Pilot Programs are being disseminated in the scientific literature.

median accrual ratio metric.

The purpose of this metric is to estimate the current accrual ratio for clinical trials in order to enhance our ability to develop performance interventions that increase actual participant accrual into clinical trials within the planned time period

beyond the CMI.



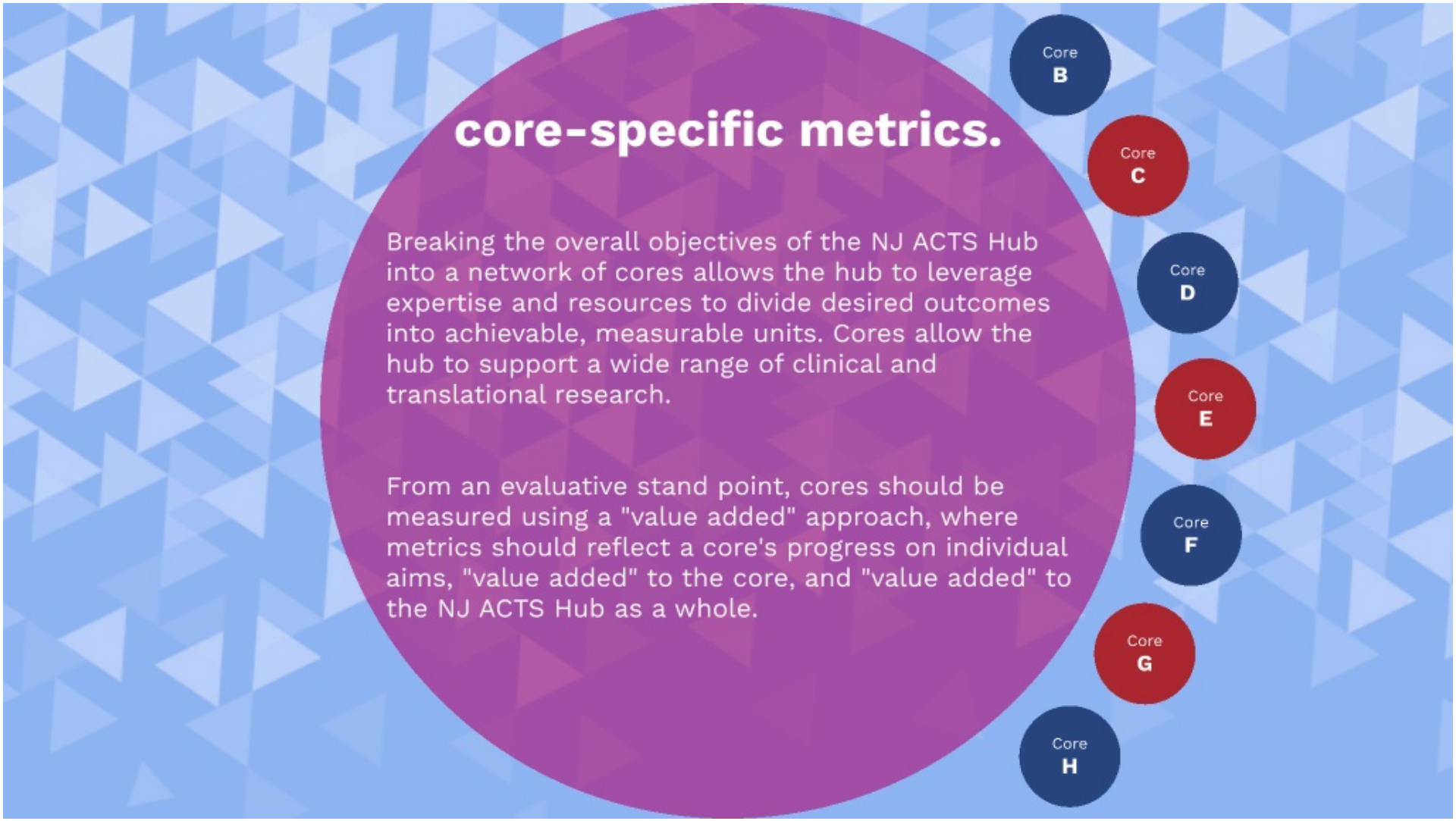
Common metrics compare high-level program performance

What explains the differential in program performance?

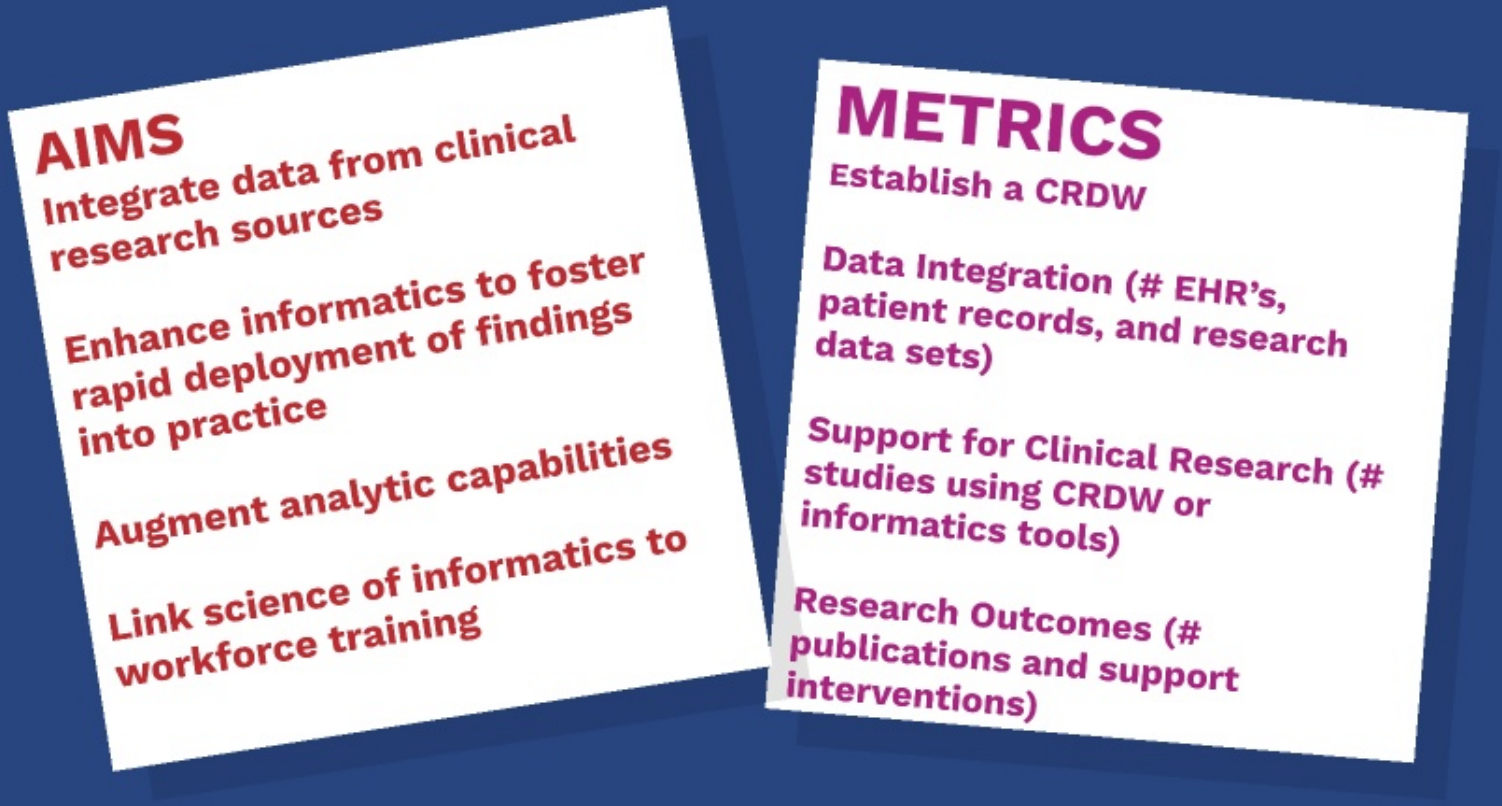
Need to consider causal mechanisms that connect program inputs to program outcomes via specific actions/activities implemented

NJ ACTS evaluation planning process.

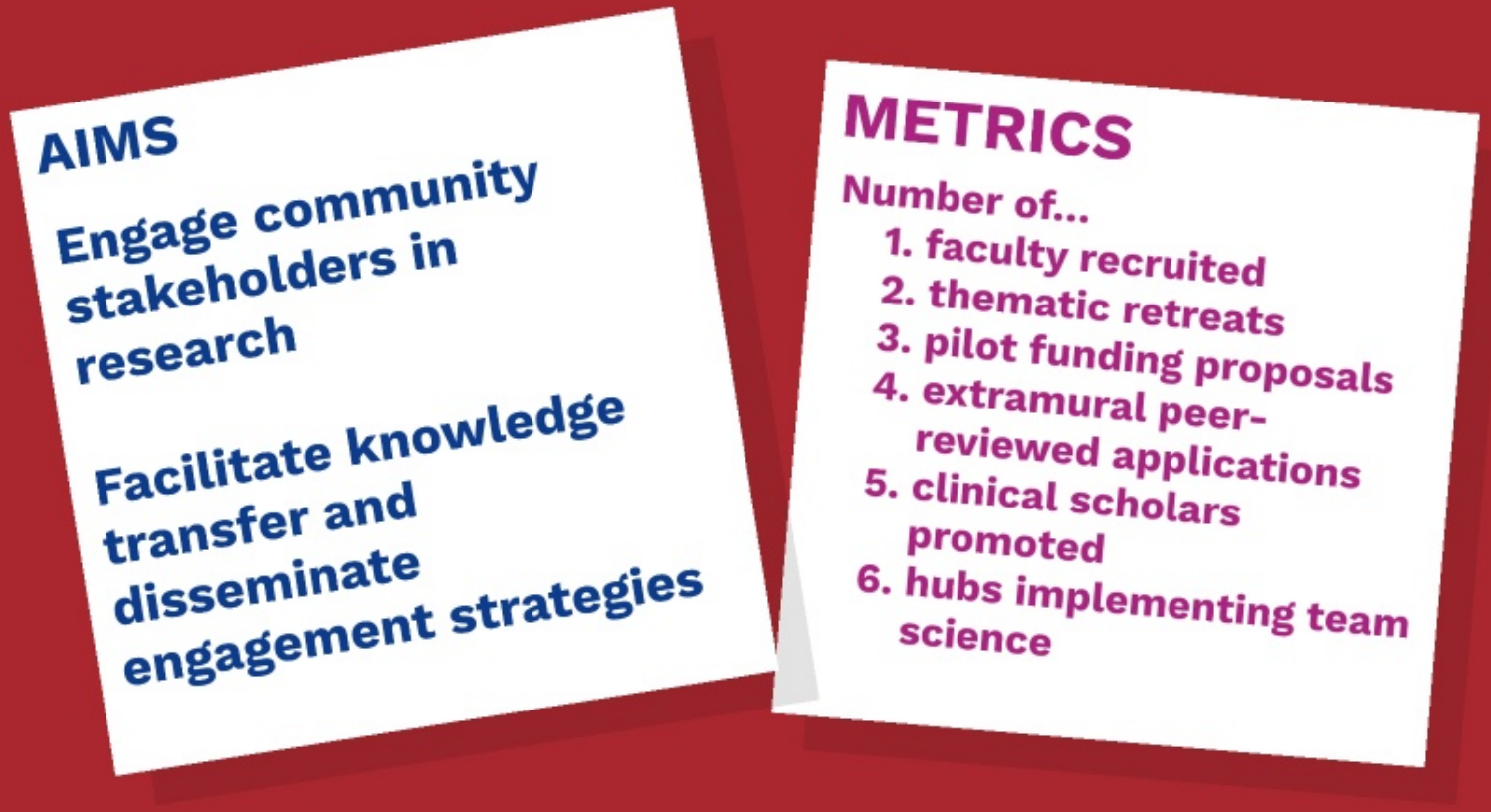
- Determine goals, objectives, & scope of evaluation
- Formulate set of focal questions for evaluation
- Develop logic model collaboratively decide on most useful framework for guiding the evaluation
- Identify a set of standard data collection instruments and measures to be employed
- Designate responsibilities for data collection, analysis, and reporting
- Determine sensible timeline and list of deliverables


core-specific metrics.
Breaking the overall objectives of the NJ ACTS Hub into a network of cores allows the hub to leverage expertise and resources to divide desired outcomes into achievable, measurable units. Cores allow the hub to support a wide range of clinical and translational research.
From an evaluative stand point, cores should be measured using a "value added" approach, where metrics should reflect a core's progress on individual aims, "value added" to the core, and "value added" to the NJ ACTS Hub as a whole.
Core B
Core C
Core D
Core E
Core F
Core G
Core H

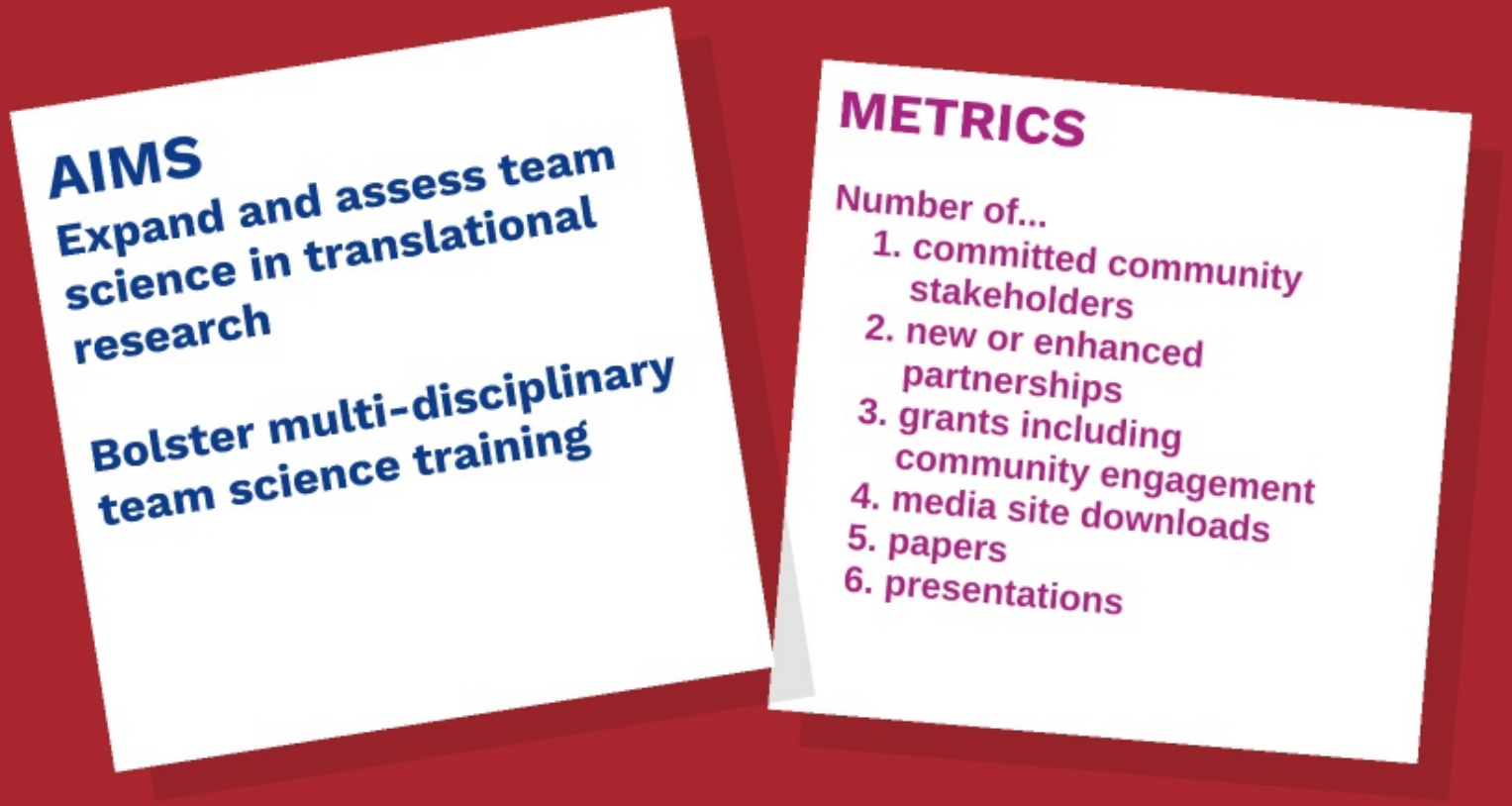
B1: bioinformatics core.



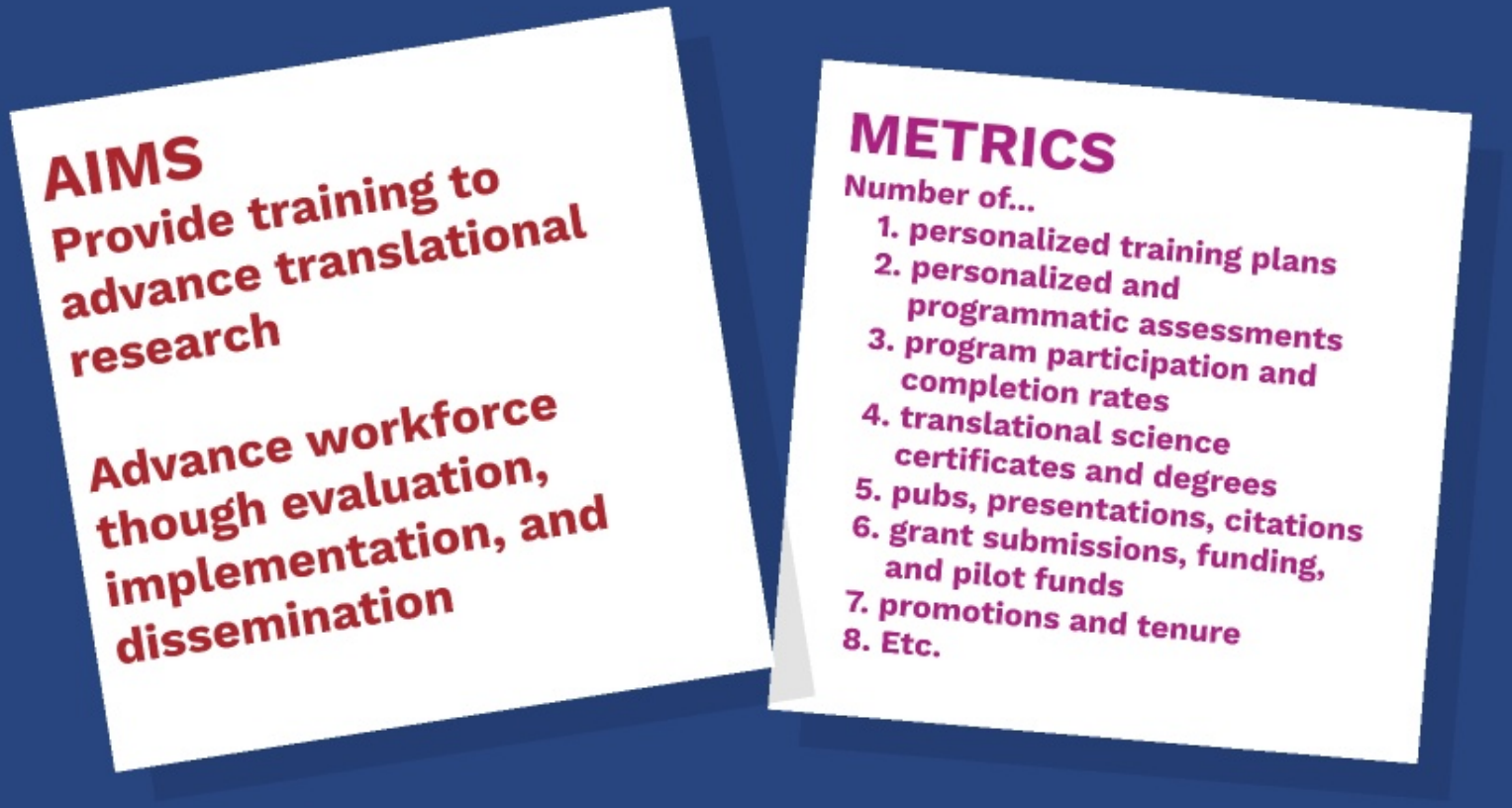
C1: community engagement core.



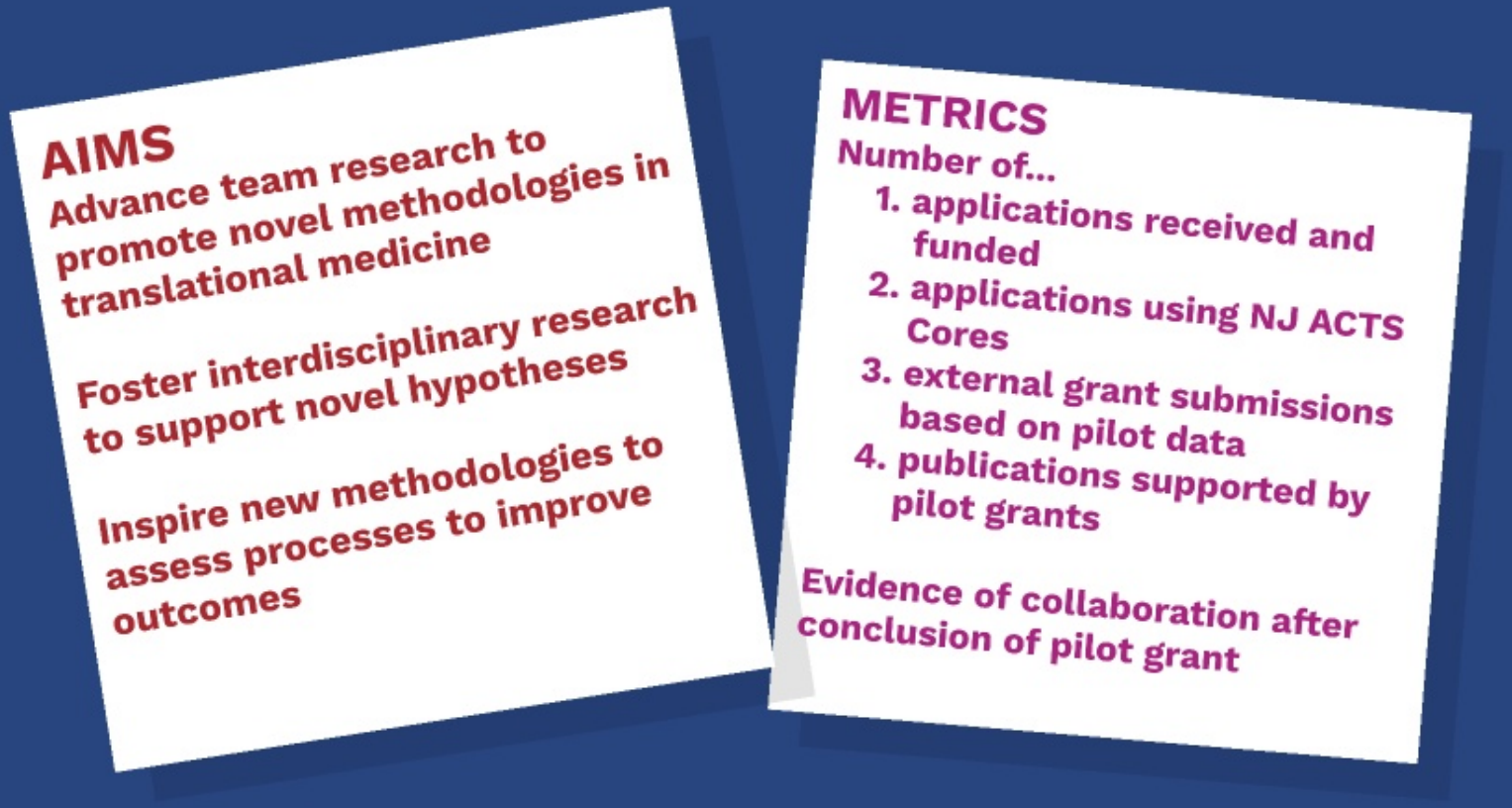
C2: collaboration and multi-disciplinary team science core.



D1: translational workforce development core.

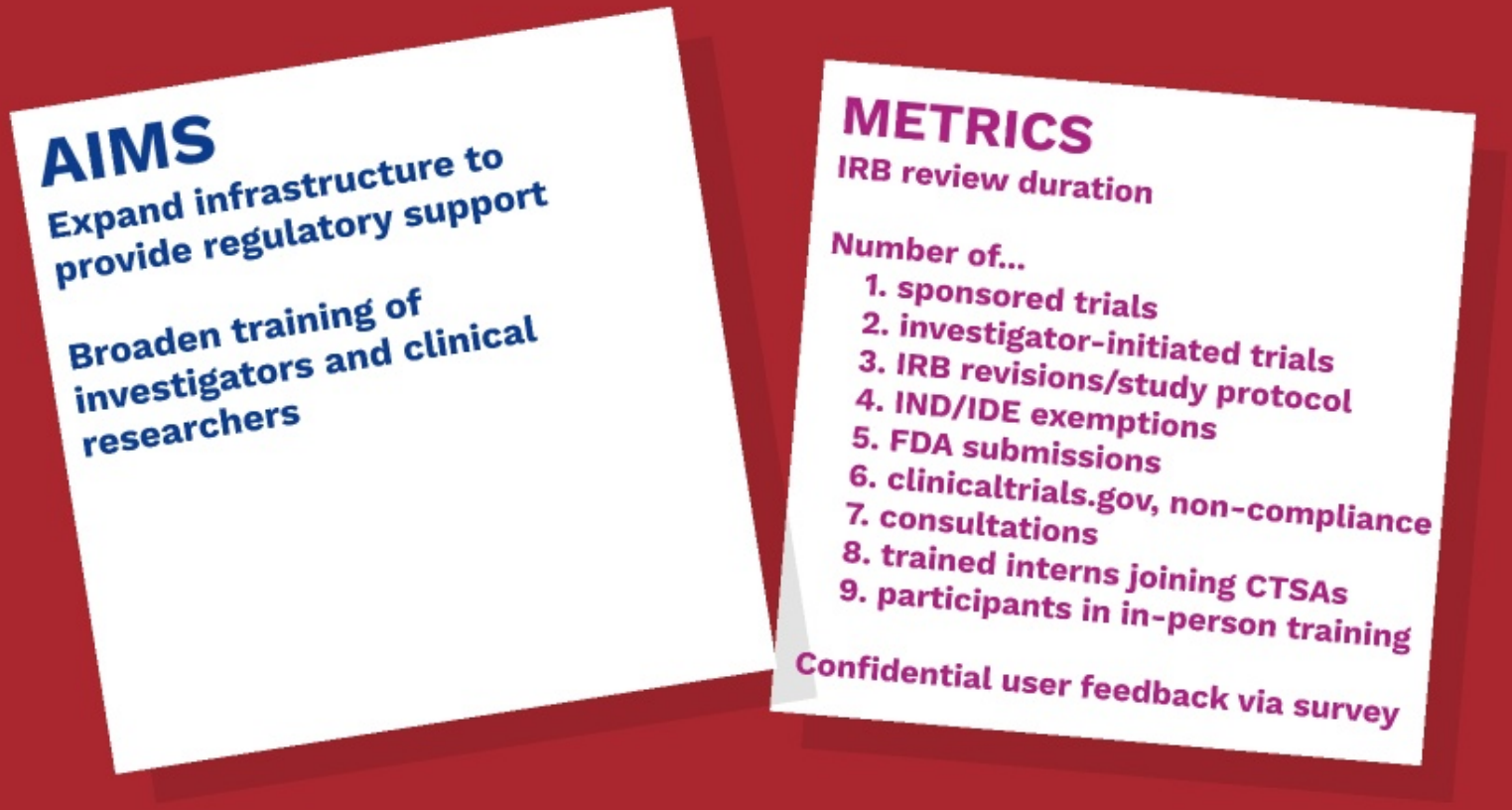


D2: pilot translation & clinical studies program core.

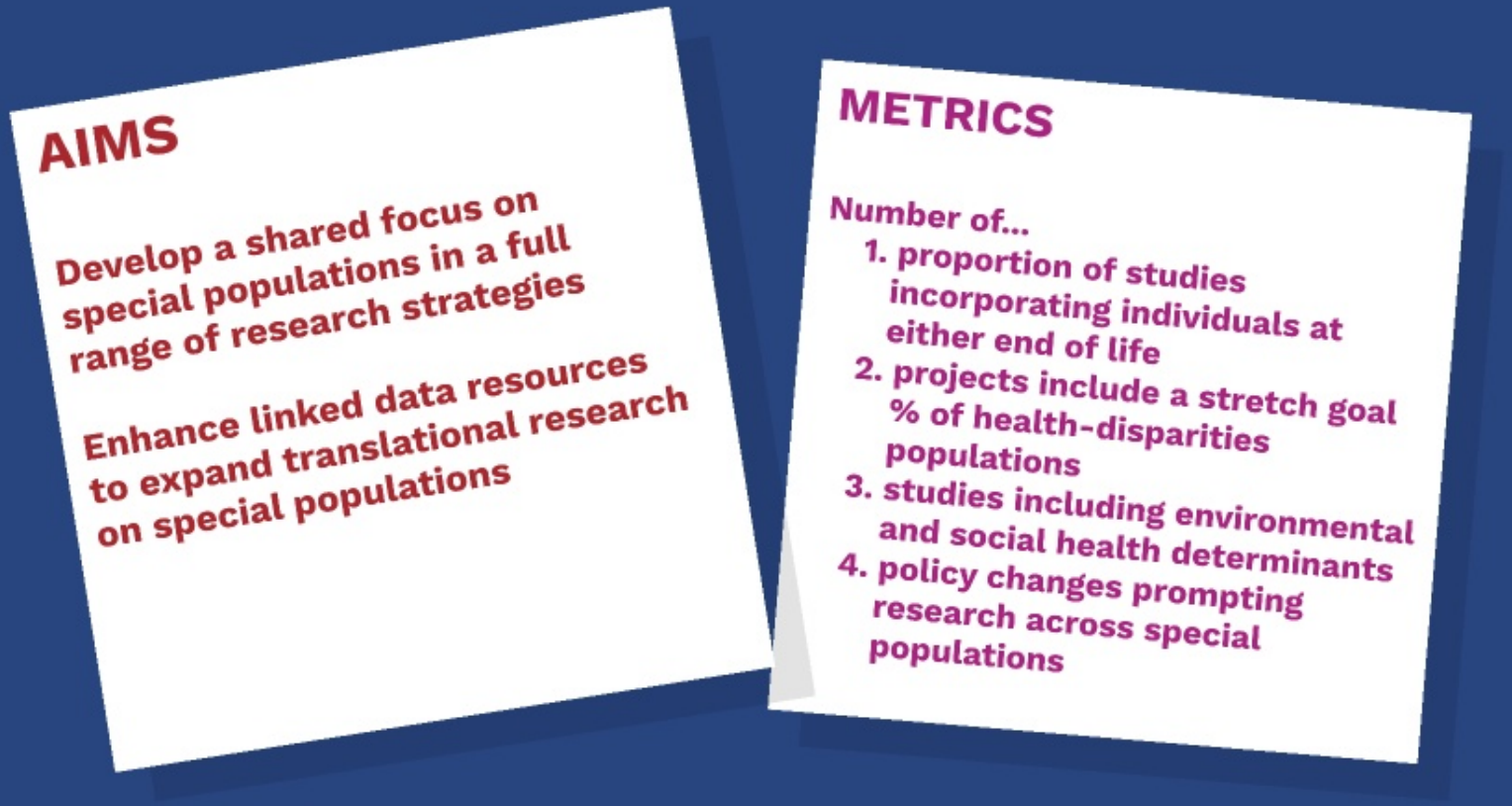


E1: biostatistics, epidemiology, and research design core (BERD).

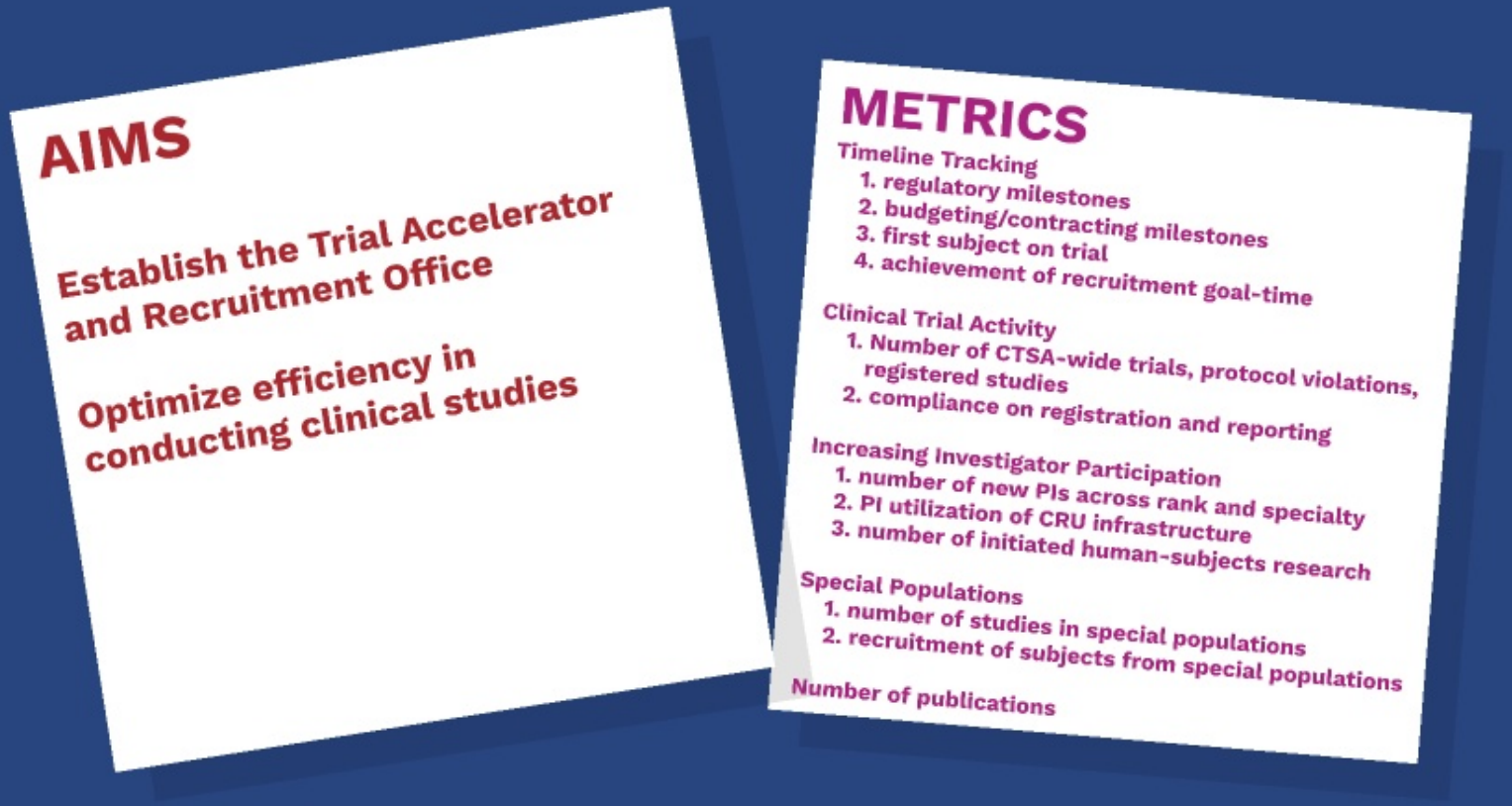
E2: regulatory knowledge and support core.



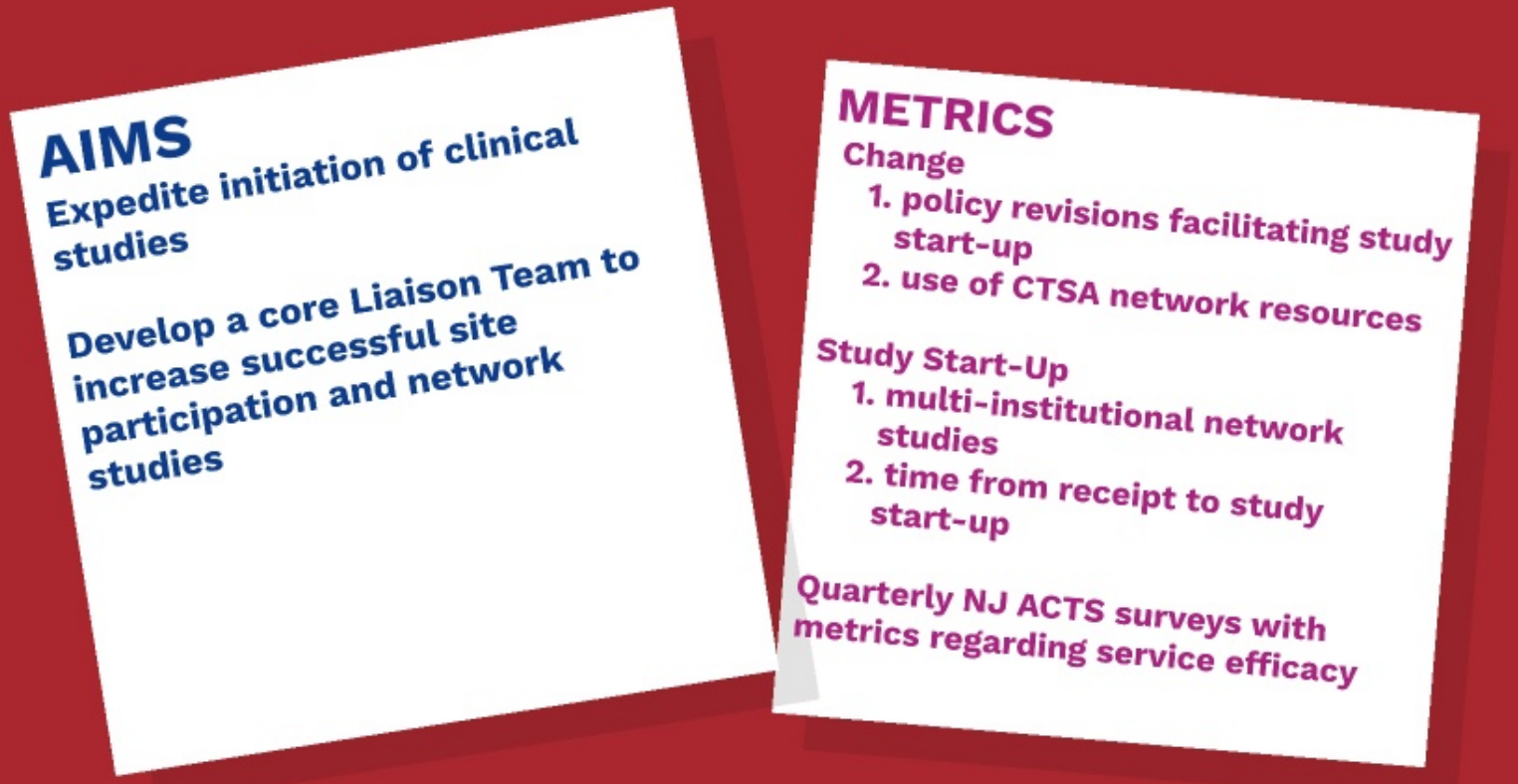
F1: integrating special populations core.



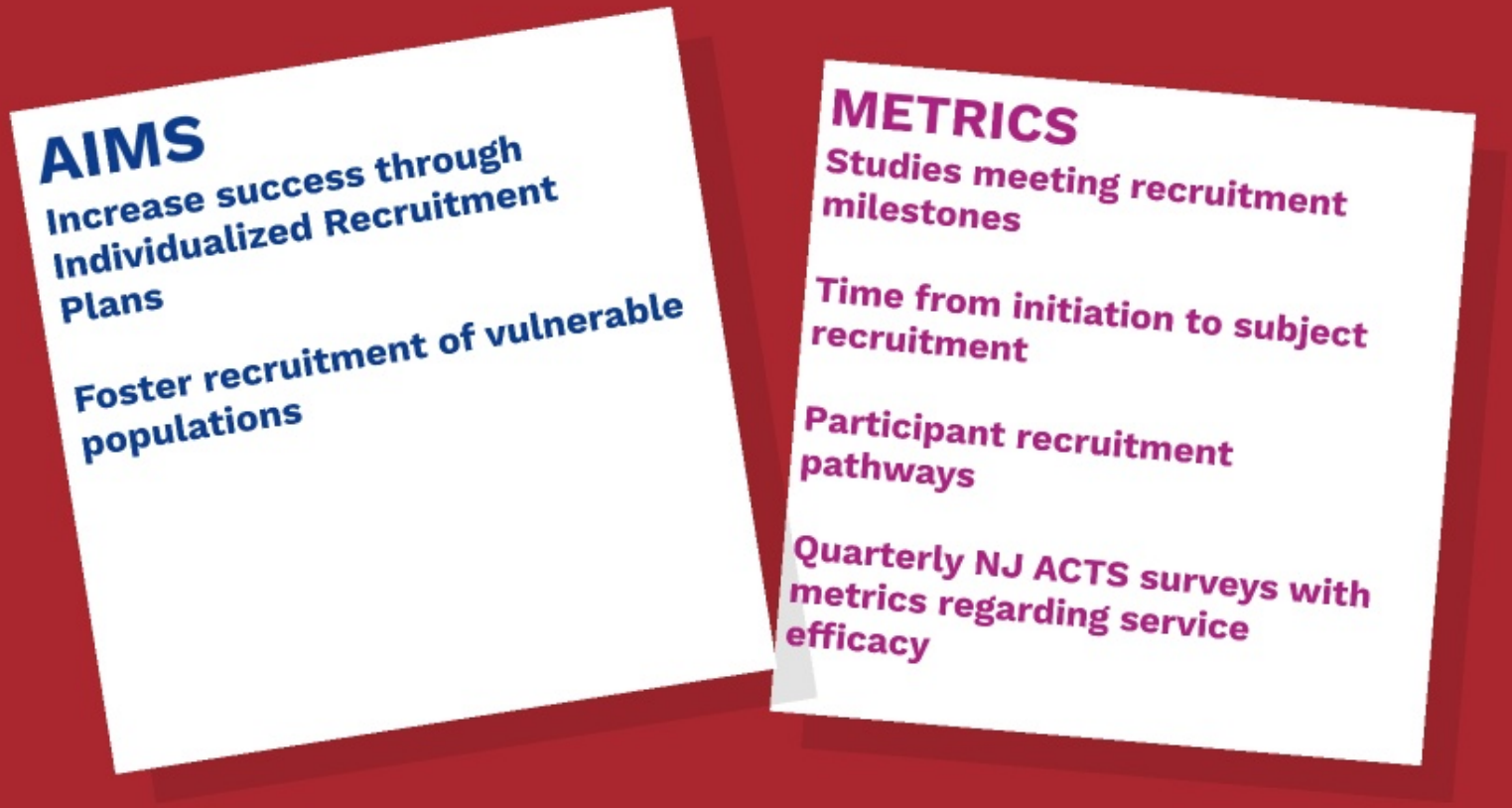
F2: participant and clinical interactions core.



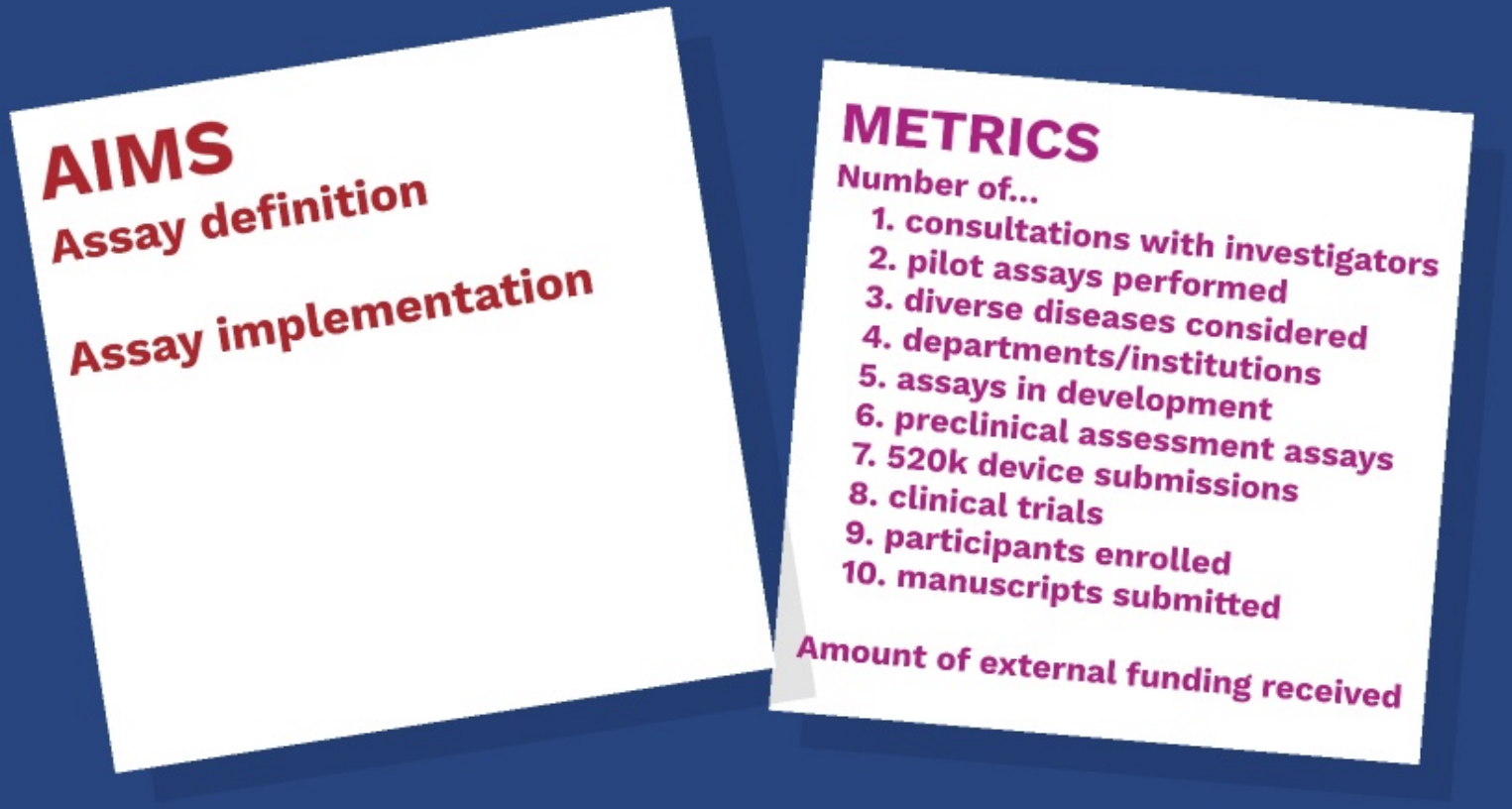
G1: liasion to trial innovation center.



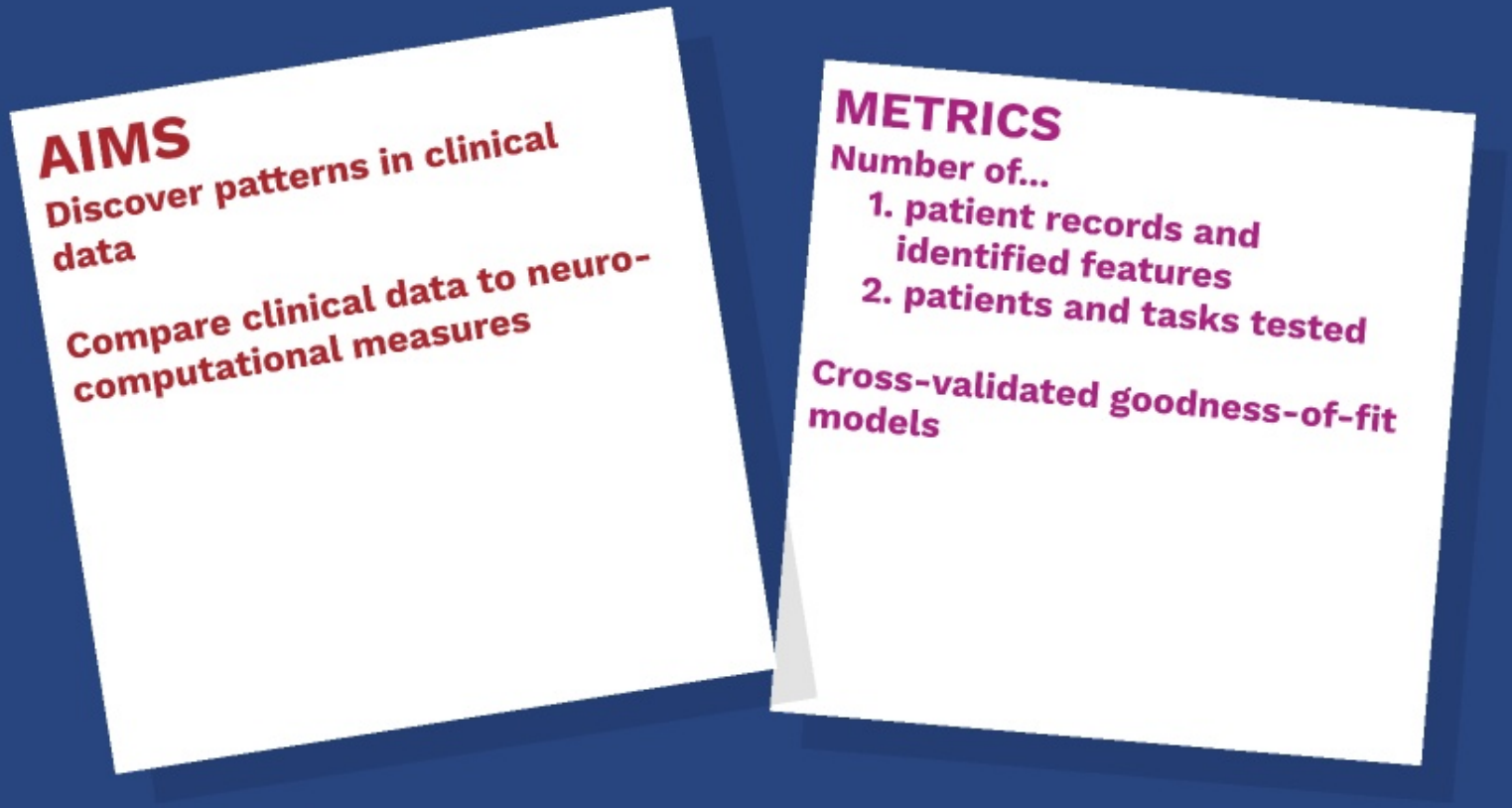
G2: liason to recruitment innovation center.



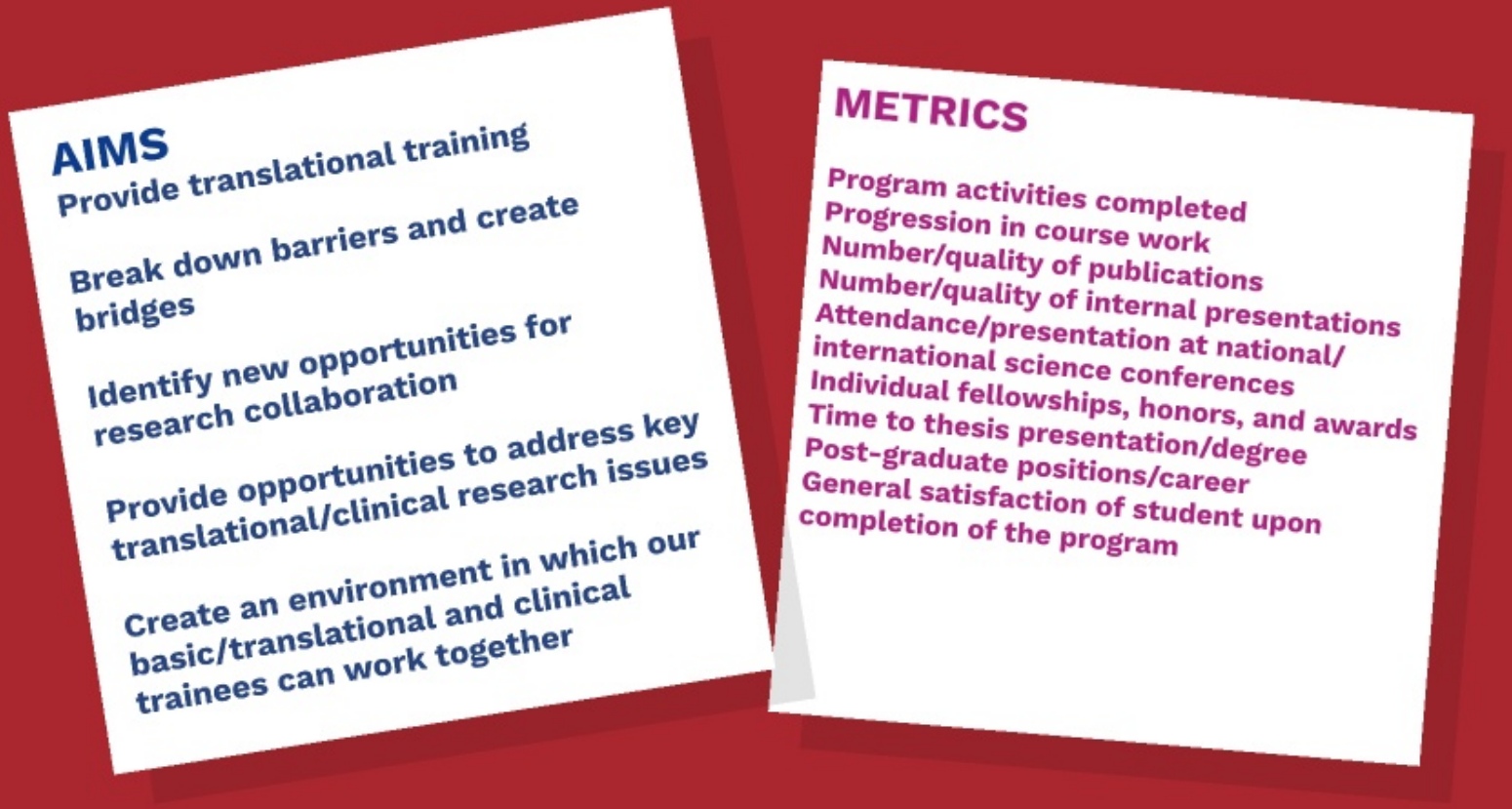
H1: biomarker discovery.



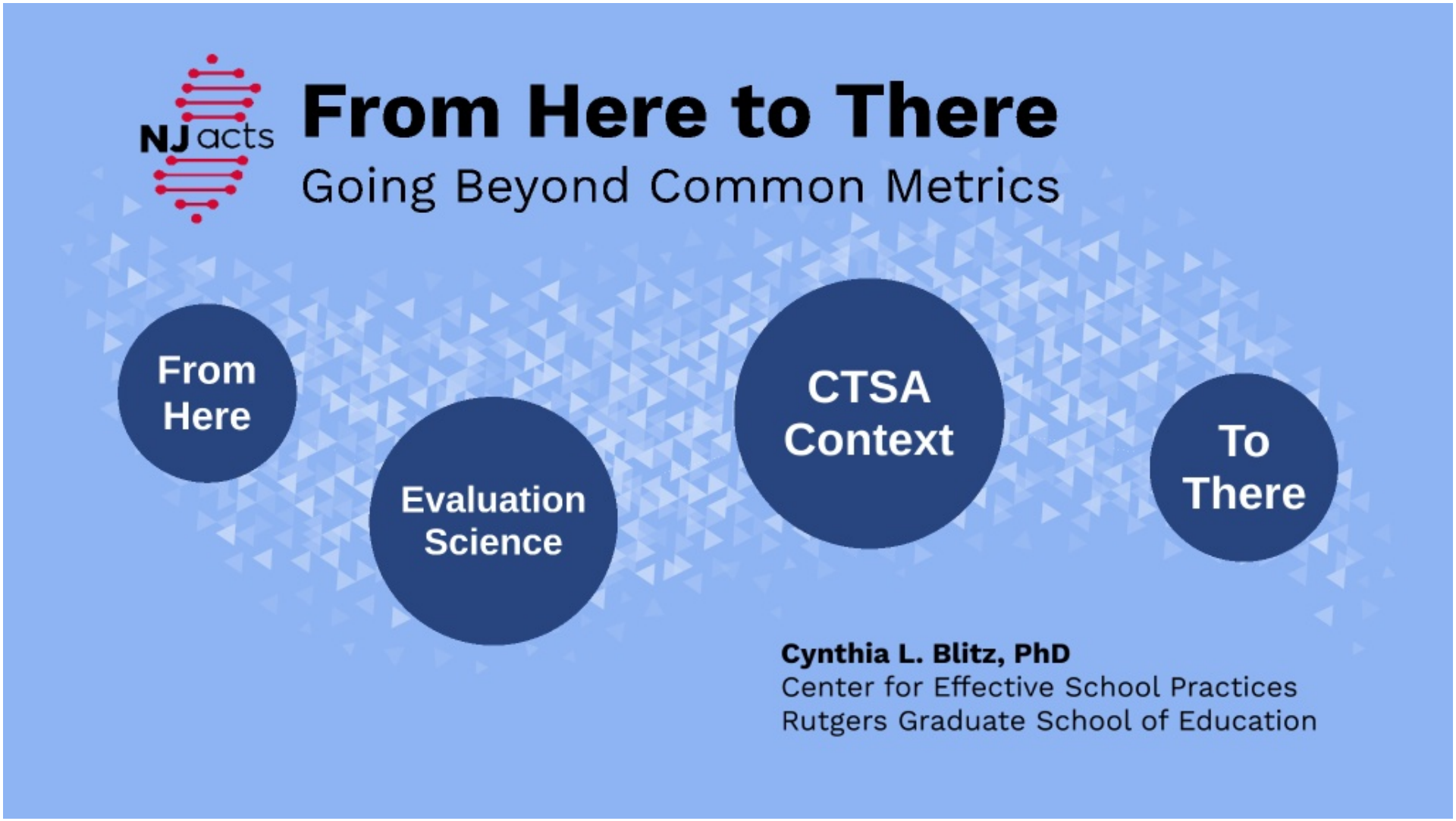
H2: machine learning.

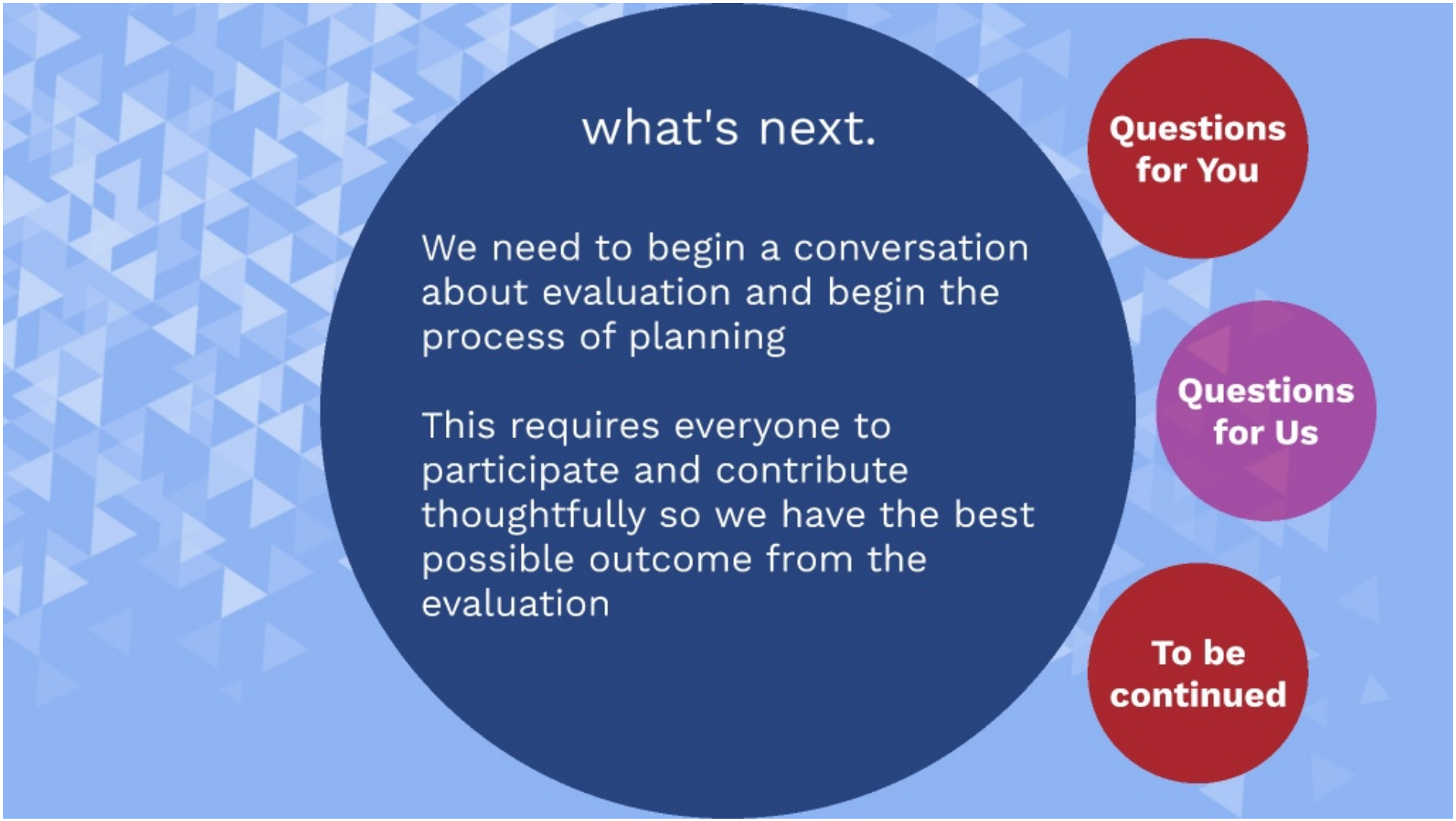


TL1: institutional training core.



KL2: institutional career development core.


NJ acts
From Here to There
Going Beyond Common Metrics
From Here
Evaluation Science
CTSA Context
To There
Cynthia L. Blitz, PhD
Center for Effective School Practices
Rutgers Graduate School of Education


what's next.
We need to begin a conversation about evaluation and begin the process of planning
This requires everyone to participate and contribute thoughtfully so we have the best possible outcome from the evaluation
Questions for You
Questions for Us
To be continued

RU ready for the evaluation.

Do you already have a good sense of what you may want to learn from the evaluation?

Do you have a sense of how you would use the findings from the evaluation to improve the program and activities?

Who is going to be involved in providing data for the evaluation?

What resources do you have available to support the evaluation?

questions for us.

thank you.

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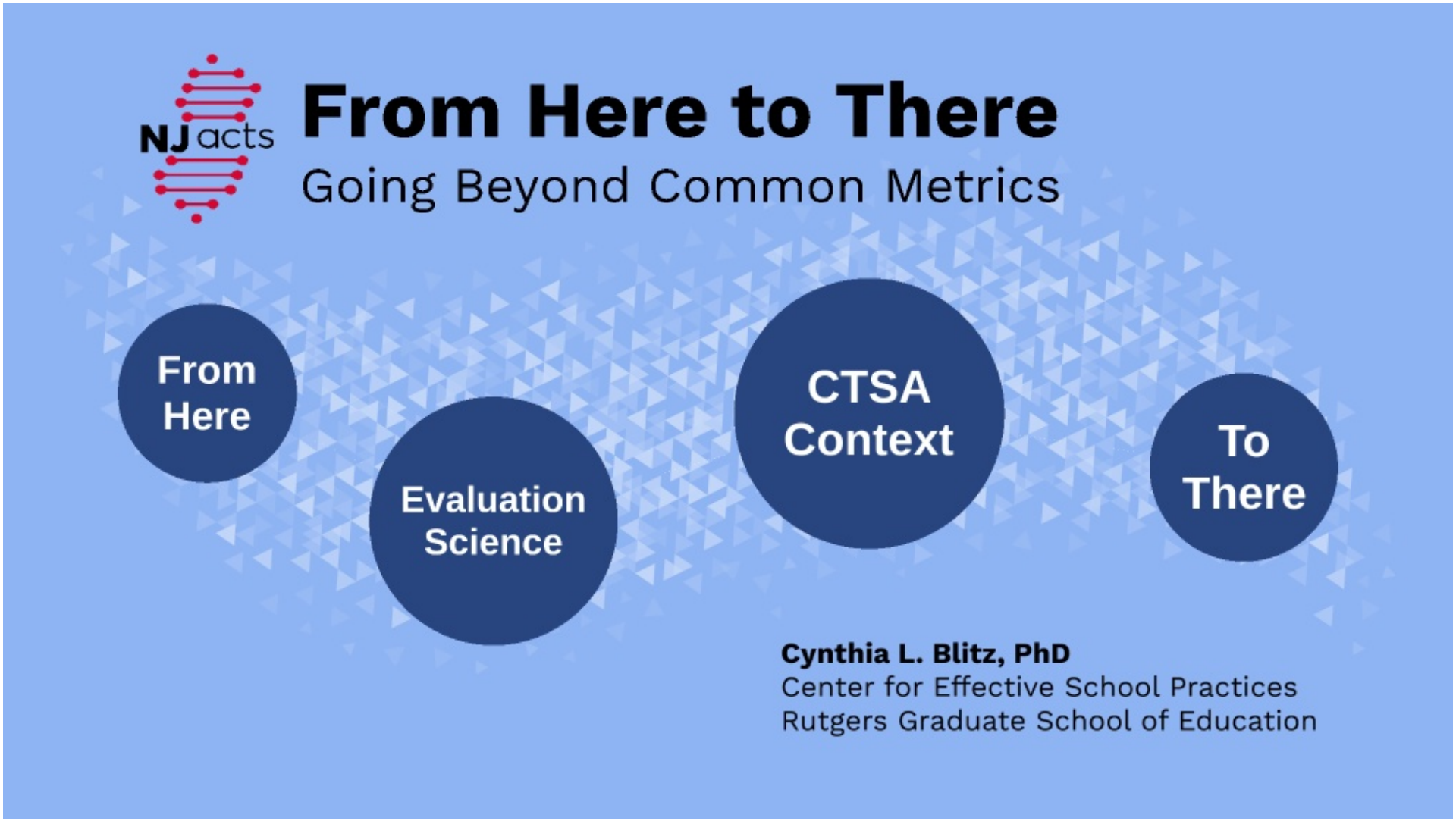
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