Innovation in Medical Education: Implementation Science Methods Make Everyone Happy

Jodi Polaha, Ph.D.

Associate Professor

Department of Family Medicine

EAST TENNESSEE STATE
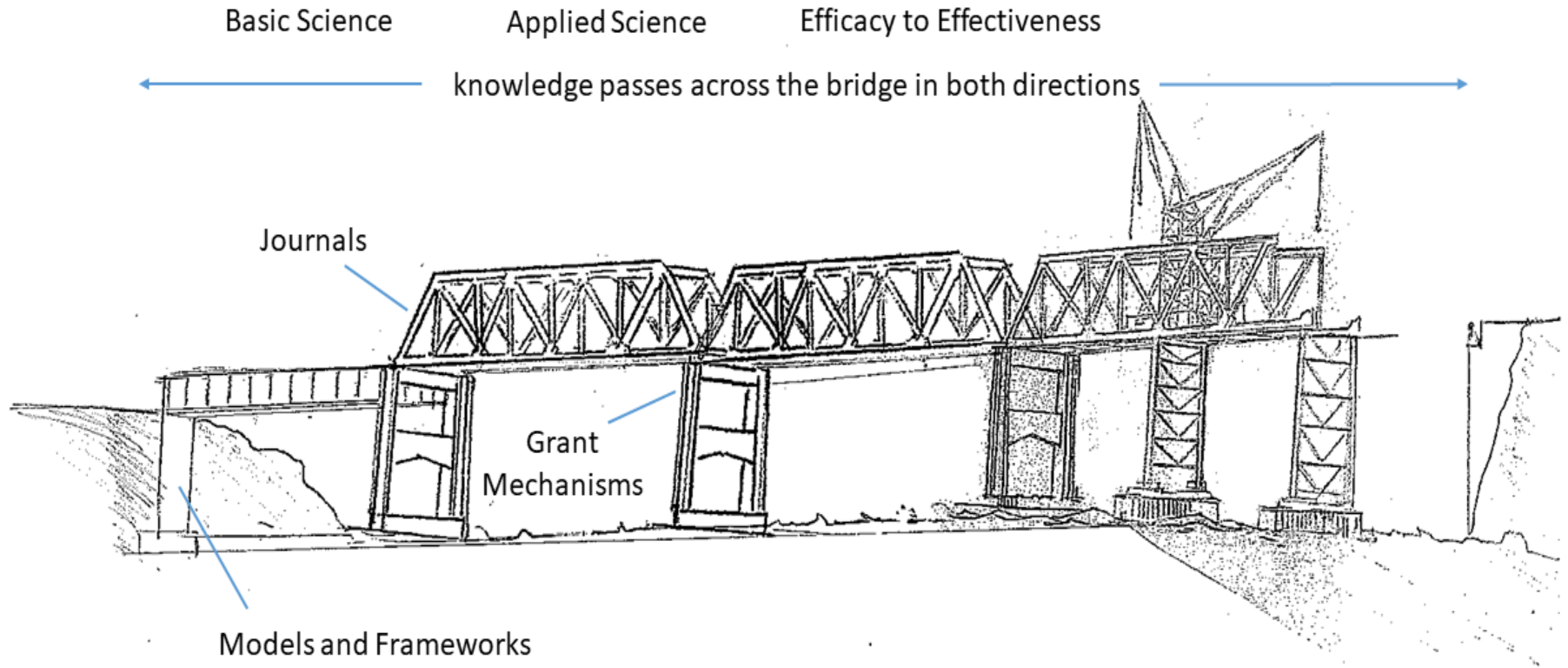UNIVERSITY

- I have no conflicts of interest to disclose.

Objectives

By the end of the lecture the learner will be able to:

- Define IS and discuss its attributes including why it makes everyone so happy

- Draw parallels between IS application in health care to medical education

- Describe a specific example for starting such work in the COM

EAST TENNESSEE STATE UNIVERSITY

Research Translation

Basic Science   Applied Science   Efficacy to Effectiveness

knowledge passes across the bridge in both directions

Journals

Grant Mechanisms

Models and Frameworks

Zerhouni, 2002, *Science*

The Unfinished Bridge

- 20 year lag in research to practice
- Siloed research and practice
- 33 RO1's funded for 1 "usable" study
- Lack consumer input
- 5-year trials don't keep pace with technology/health care system transformation

Dissemination of Scientific Findings

- To researcher: *of the methods you use to disseminate your research findings, which do you think has the greatest impact on public health or medical practice/policy?*

1. Journal articles
2. Face to face meetings
3. Media interviews
4. Press releases

Dissemination of Scientific Findings:
A Tale of Two Worlds

Researchers

1. Journal articles
2. Face to face meetings
3. Media interviews
4. Press releases

Practitioners

1. Professional associations
2. Seminars/workshops
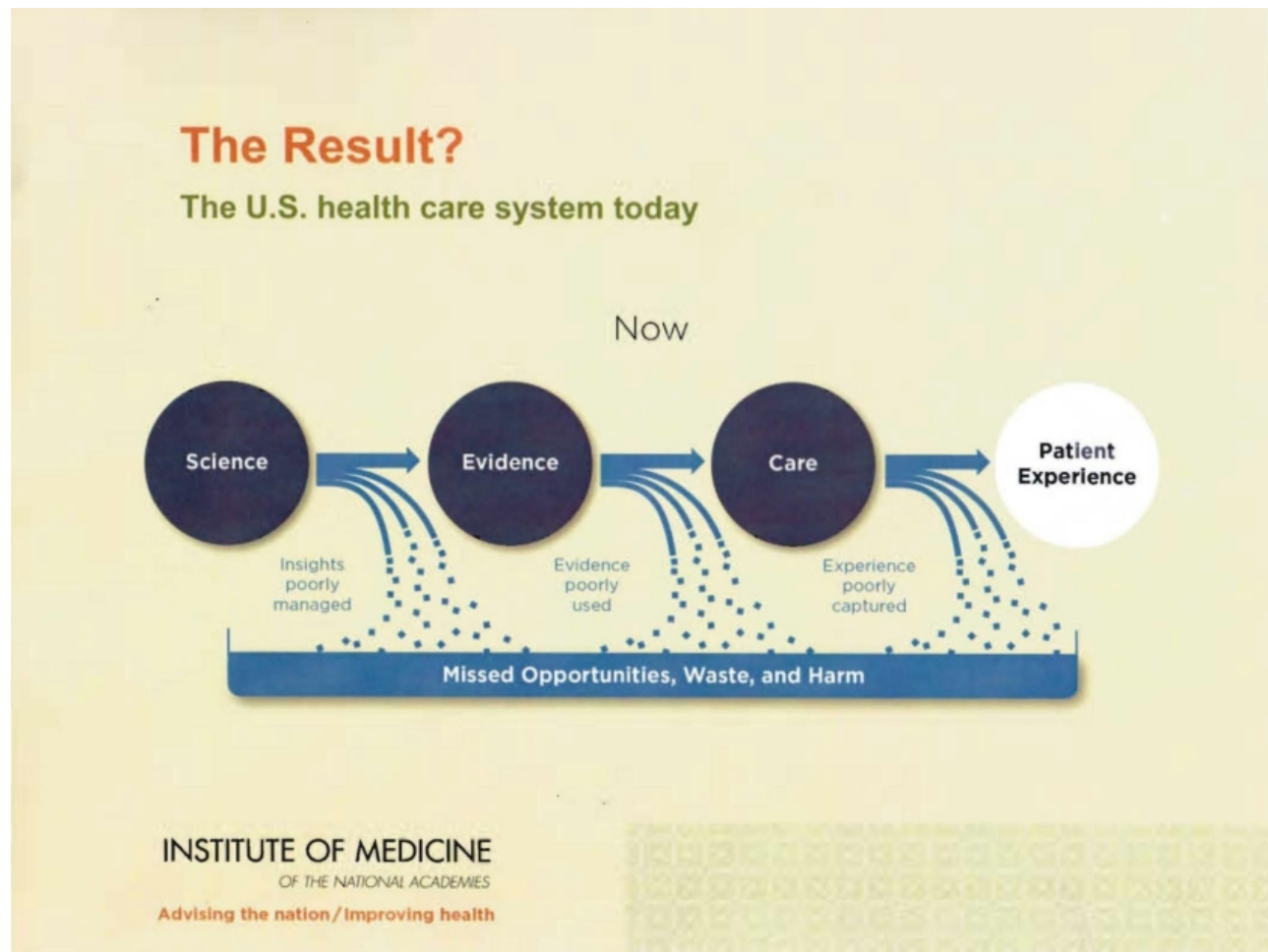3. Email alerts
4. Journal articles

Brownson/TIDIRH

EAST TENNESSEE STATE
UNIVERSITY

Learning Healthcare System

Parallel

Medical educators have raised concerns over the chasm between medical education theory and practice and the persistence of methods of learning and assessment with little valid or reliable evidence.

Check for updates

What Is Implementation Science and What Forces Are Driving a Change in Medical Education?

David C. Thomas, MD, MHPE[1], Arnold Berry, MD, MPH[2],
Alexander M. Djuricich, MD[3,†], Simon Kitto, PhD[4],
Kathy O'Kane Kreutzer, MEd[5], Thomas J. Van Hoof, MD, EdD[6,7],
Patricia A. Carney, PhD[8], Summers Kalishman, PhD[9], and
Dave Davis, MD, CCFP[10]

EAST TENNESSEE STATE UNIVERSITY

Impact = Effectiveness X REACH

(Miller, Munoz, & Christensen, 2010)

Research Translation

Dissemination and Implementation Science

Basic Science   Applied Science   Efficacy to Effectiveness

knowledge passes across the bridge in both directions

Journals

Grant Mechanisms

Models and Frameworks
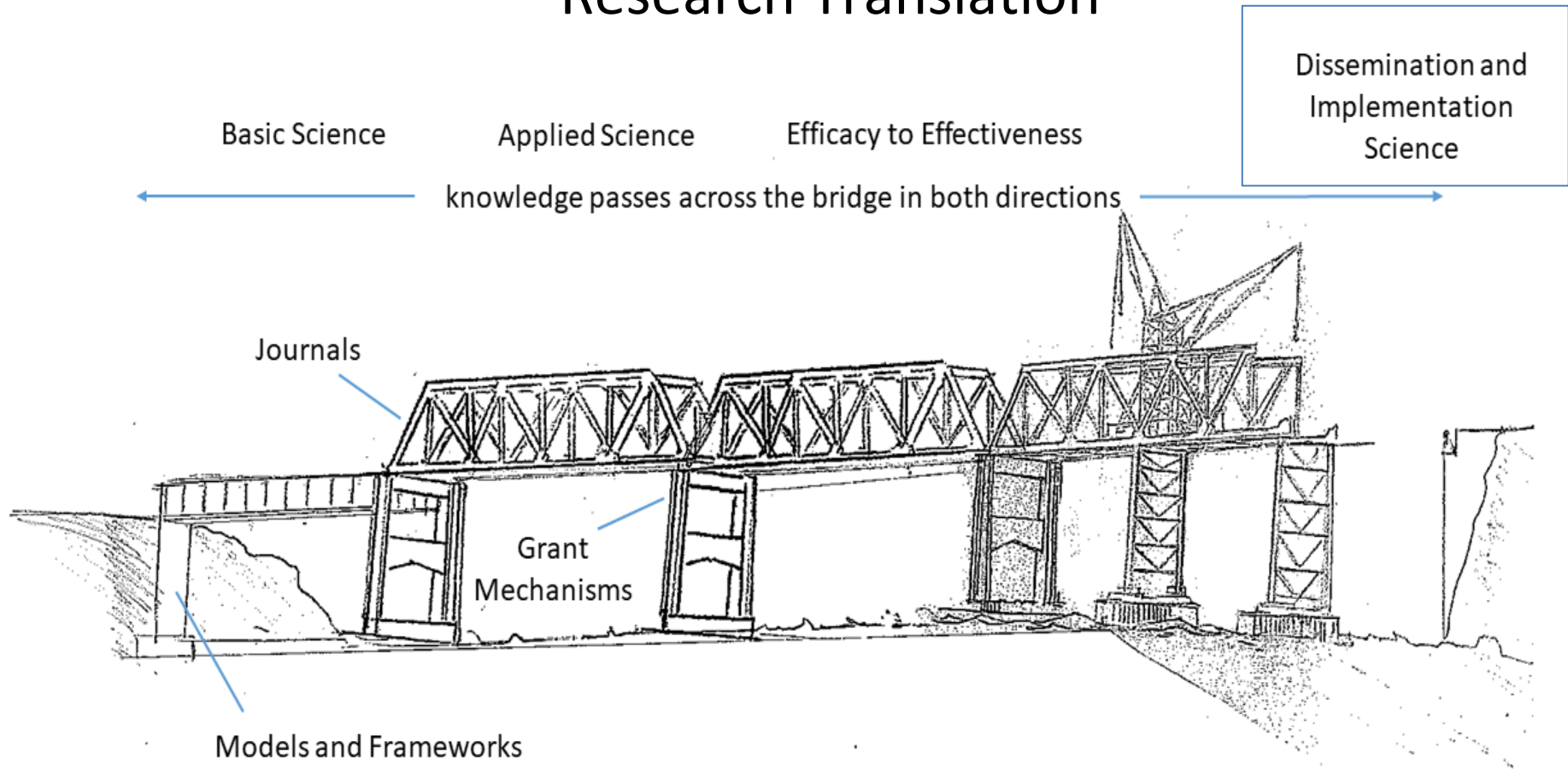
Zerhouni, 2002, *Science*

EAST TENNESSEE STATE UNIVERSITY

Definition

Implementation

- Introduce new practice or change in a way that gains traction and follow through in the real world. National Institute of Mental Health [NIMH], 1998
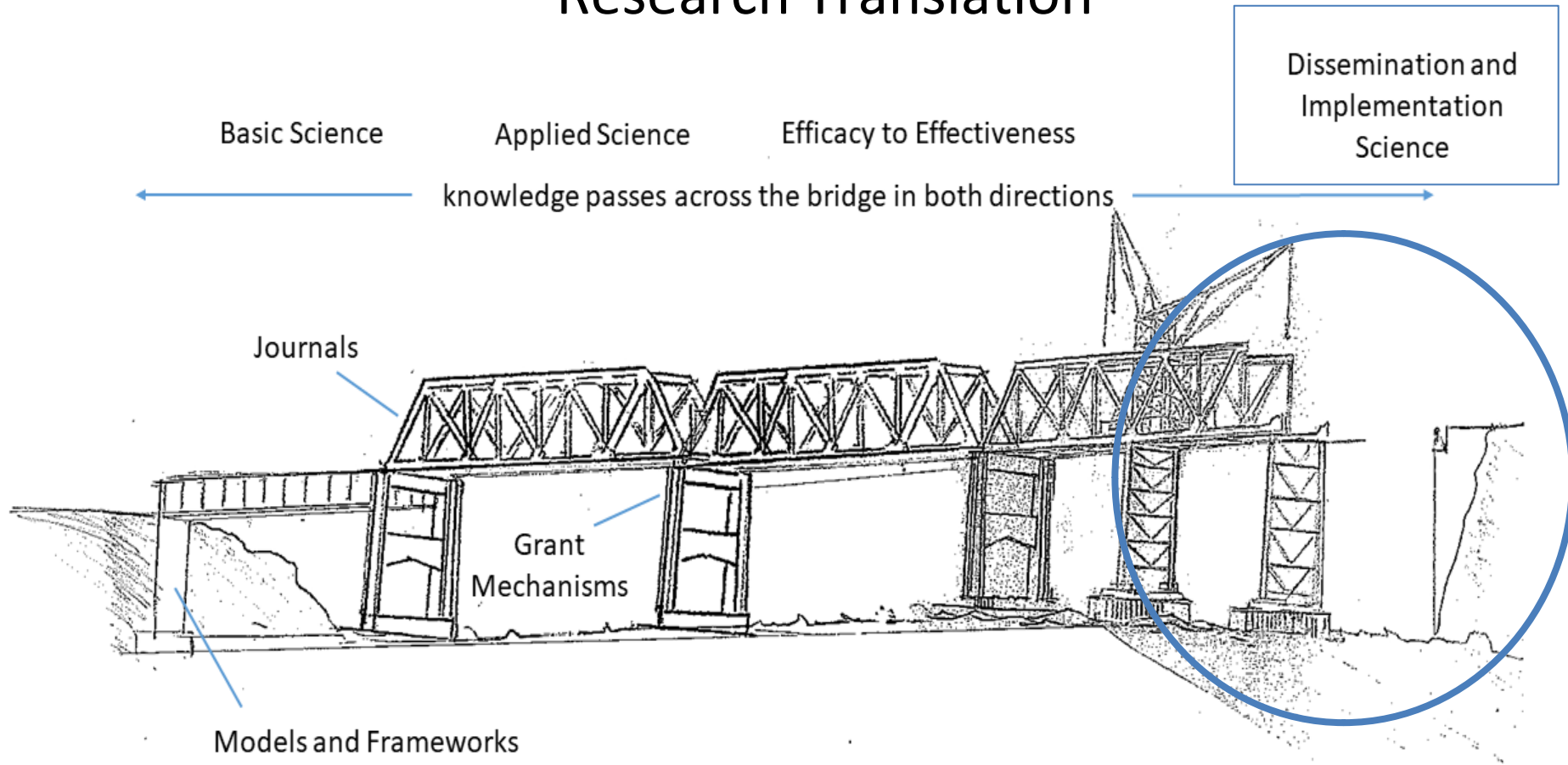
EAST TENNESSEE STATE
UNIVERSITY

Definition

Dissemination

- How information about a given intervention is created, packaged, transmitted or interpreted across different stakeholder groups. Chambers, Ringeisen, & Hickman, 2005

Research Translation

Basic Science

Applied Science

Efficacy to Effectiveness

Dissemination and Implementation Science

knowledge passes across the bridge in both directions

Journals

Grant Mechanisms

Models and Frameworks

Zerhouni, 2002, *Science*

Key Characteristics

- Focus on stakeholders
- Engagement of trans-disciplinary teams
- Incorporation of novel partners
- Innovation in methodology
- Rapid results, "high risk/high rewards"
- Emphasis on scaling up and sustainability

Key Challenges

- De-implementing bad practices
- Rapid and practical results vs. generalization
- Need for new methods
- Technology – making best bets
- Fidelity vs. adaptation

Getting the Evidence
to the Endpoint

Two Fields of Inquiry

Bridge Architecture

- Models and methods
- Journals, training, forums
- Funding sources
- Increasing policy infrastructure

Movement of Traffic

- Application/tests of models and methods
- Traffic moves two ways
- Why it makes everyone so happy

EAST TENNESSEE STATE UNIVERSITY

Movement of Traffic

Consideration of context driving uptake in medical education:

(1) availability of high-quality evidence,

(2) relevance and ease of implementation,

(3) timeliness of research,

(4) time and cost constraints, and

(5) incentives.

Implementation Practice

- Use of models and methods developed by IS to drive uptake
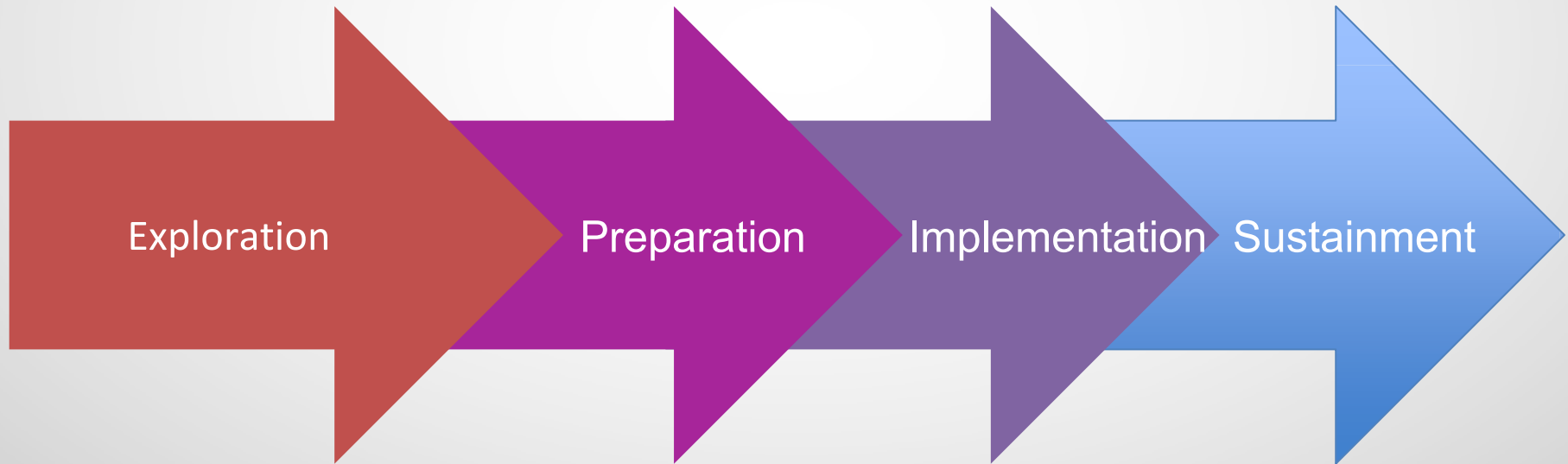- Also: Science of Implementation Practice

Example: Implementation Model

- Provides structure to the process of implementation

Exploration, Preparation, Implementation, and Sustainment Framework[1,2]

Exploration → Preparation → Implementation → Sustainment

Society for HEALTH PSYCHOLOGY

Exploration

Outer Context
Sociopolitical Context (legislation, policies, monitoring and review)
Funding (service/research/foundation grants, continuity)
Client Advocacy (consumer organizations)
Interorganizational Networks (direct and indirect networking, professional organizations, clearinghouses, technical assistance)

Inner Context
Organizational Characteristics (capacity, culture, climate, leadership)
Individual Adopter Characteristics (values, goals, social networks, perceived need for change)

Preparation

Outer Context
Sociopolitical Context (legislation, local enactment, "evidence")
Funding (support tied to federal and state policies)
Client Advocacy (national advocacy, class action lawsuits)
Interorganizational Networks (organizational linkages, leadership ties, formal and informal information transmission)

Inner Context
Organizational Characteristics (size, role specification, knowledge/skills/expertise, values)
Leadership (culture embedding, championing adoption)

Society for
HEALTH PSYCHOLOGY

Champion Teams: A Definition

- Our implementation strategy for building team based care

Putting Wheels on All Our Good Stuff

Essential Elements

- Key stakeholders
- Short, focused meeting schedule
- Short-term goals
- Data-driven

Example: Implementation Outcomes

Implementation Outcomes

Types of Outcomes In Implementation Research

Implementation Outcomes
Acceptability
Adoption
Appropriateness
Cost
Feasibility
Fidelity
Penetration
Sustainability

Service Outcomes

Efficiency
Safety
Effectiveness
Equity
Patient (Student)-centeredness
Timeliness

Client/Trainee Outcomes

Satisfaction
Function
Symptomatology
(Achievement)
(Competencies)

Proctor et al. (2011). Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Adm Policy Ment Health (38),* 65-76.

EAST TENNESSEE STATE UNIVERSITY