

Science of Science Management

Development of Priority Questions

October 2-3, 2008

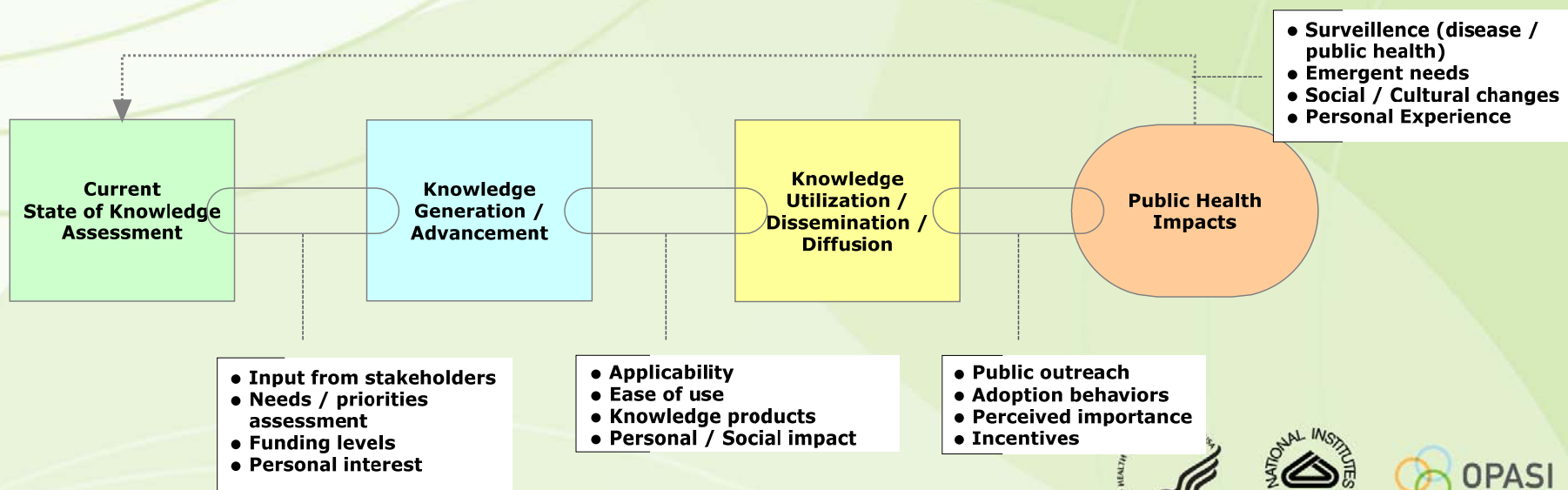
NIH Campus

Bethesda, MD

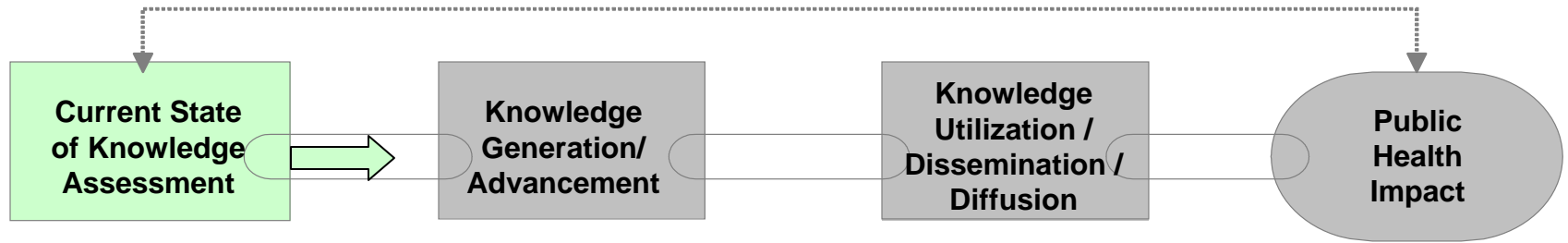


Development of Priority Questions

Current State of Knowledge Assessment



Current State of Knowledge Assessment



Focuses on how existing knowledge and needs can be assessed to identify research opportunities and possible gap areas

Transition from Knowledge Assessment to Knowledge generation examples:

- Funding levels
- Priority setting
- Input from stakeholder
- Scientific interest and incentives

NIH-WG & CoC Generated

1. What is needed to create a **standard framework**, which comprehensively assesses the current state of knowledge in a field (including **basic, clinical, and translational research**) and determines the **next generation of science** needed? How would we know that we captured enough information?
2. Once a particular field is assessed, how can science needs be prioritized and funds best allotted to fill the gap, to generate innovation, and to **focus research** in a particular area in order to **create an impact**? (including areas of basic, translational, and applied)
3. What are the **analytical tools or methods**, either currently available or in principle, for identifying research knowledge gaps and opportunities? How can these tools be leveraged to provide decision makers, peer reviewers, and PIs with **evidence-based information** that **fosters innovative and/or impactful research**?
4. How can NIH **portfolio analysis** be combined with other relevant tandem information to best plan for the next generation of science? What would that **other information** include to provide the best assessment of the current state of knowledge?

Invited Expert Focused

Overarching Guiding Question for Theme

What components should be included in a comprehensive **framework** of processes, analytic tools and methods that can be used to **assess and prioritize** the state of knowledge in a basic, clinical, or population-based research field to **encourage innovation and advancement**?

Breakout Group Priority Question

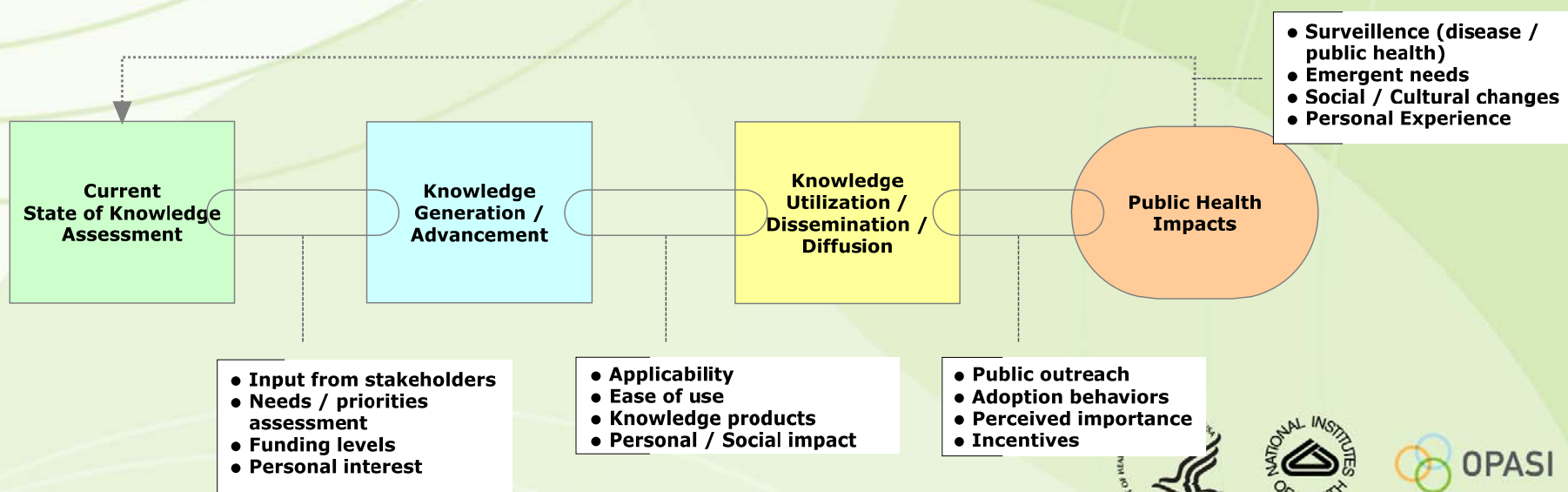
How do we assess the current state of knowledge to identify science opportunity for innovative research?

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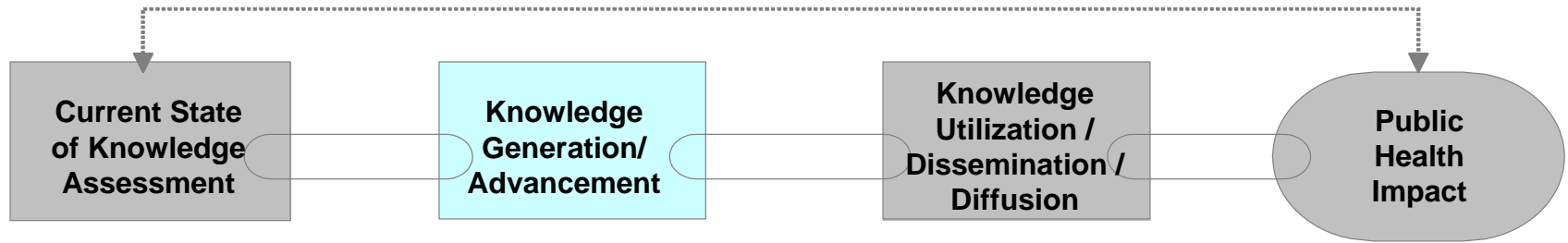
- Develop a model for assessing the question?
- Identify constructs and ways to assess each?

Development of Priority Questions

Knowledge Generation and Advancement



Knowledge Generation / Advancement



Addresses the need to develop more appropriate methodologies for assessing science, and for understanding the types of knowledge generated (in addition to publications) especially risk, innovation, and large systems

NIH-WG & CoC Generated

1. How can we comprehensively assess **science management processes, political and social influences, collaborations, and knowledge generation** in order to determine research outcomes that can best **inform decision-making**?
2. What standardized models and measures can be developed and potentially used as **benchmarks** for assessing the **likelihood of knowledge generation** from the different kinds of NIH programs with various funding mechanism approaches?
3. What are **indicators/metrics** across research and development fields that can best depict the generation of new knowledge and **assess the value** added of a large initiative, system assessment and/or science organization?
4. How can the knowledge generated from **“failed” or “negative” research** be assessed to facilitate the development of **high risk/high reward, innovative research**? What is the best method for assessing high risk science, as well as impactful science?
5. How do we assess “successful” research programs **beyond the use of bibliometrics**? How can these non-bibliometric measures be positioned in the management of science to be a useful component for assessing knowledge generation and **informing decision-making** during science planning and selection? How can bibliometrics be used more effectively in concert with non-bibliometric methodologies?

Invited Expert Focused

Overarching Guiding Question for Theme

What is needed for a comprehensive assessment of NIH knowledge generation and advancement?

Breakout Group Priority Question

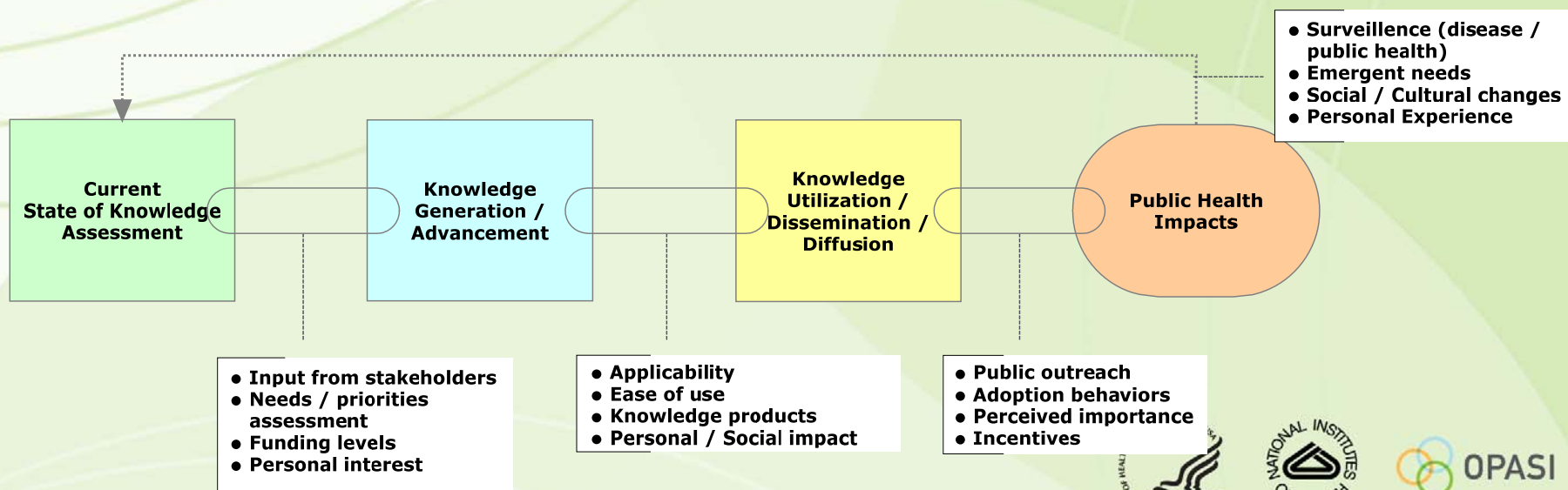
What is needed for the assessment of NIH knowledge generation?

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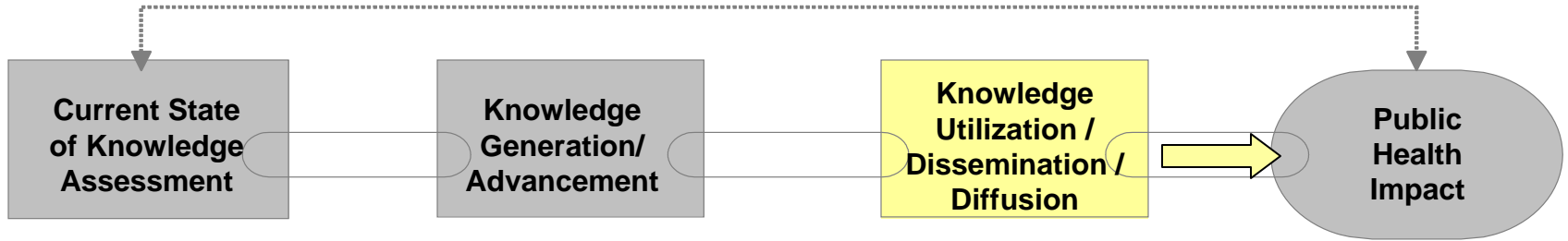
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Development of Priority Questions

Knowledge Utilization / Dissemination / Diffusion



Knowledge Utilization / Dissemination / Diffusion



Focuses on assessing how knowledge and resources generated from research results are communicated, distributed, utilized, and adopted into behaviors, standards of care, science policies, and the next generation of research.

Transition from Knowledge Utilization to Public Health Benefits, examples:

- Incentives
- Adoption of information
- Perceived importance

NIH-WG & CoC Generated

- How can NIH assess the **effectiveness of** various **communication** methods utilized in order to determine how to maximize our role in disseminating results of research information in a manner that **diffuses the results** into medical practice, industry adoption, public health practice, and policy development?
- How does NIH ensure that the “right” people are being trained for the “right” scientific fields in order to **maintain a continuum of scientist** for generations that can sustain a **viable scientific workforce**?
- When and how can **social networks and collaborations** facilitate the communication, dissemination, and utilization of research knowledge? Who are the key players and how can these **systems** be utilized to better foster their role in ensuring the application of the information?
- When and how are **stakeholders** critical in the **planning, implementation and reporting** of scientific advancements? How can research results be appropriately provided to them at key points in order to foster their input into the management of science?
- How can a **systematic approach for reporting** science advances and science management best practices be developed to better **inform decision-makers** during scientific planning, prioritizing and budgeting time periods? What tools could be used to best disseminate the information in real time and with realistic feasibility?

Invited Expert Focused

Overarching Guiding Question for Theme

How can **social networks and collaborations** among constituents/ stakeholders facilitate the exchange and use of relevant knowledge to enhance learning and innovation and to facilitate the **utilization** of the information in **practical applications and at key decision points**?

Breakout Group Priority Question

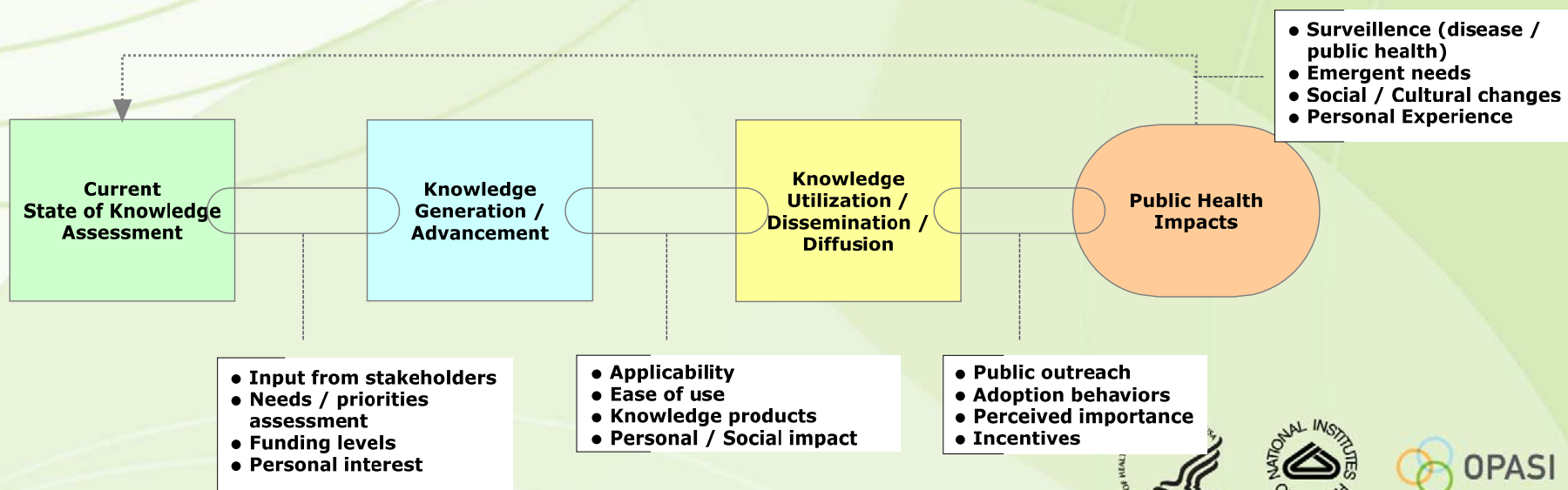
How can we best leverage social networks to facilitate information utilization?

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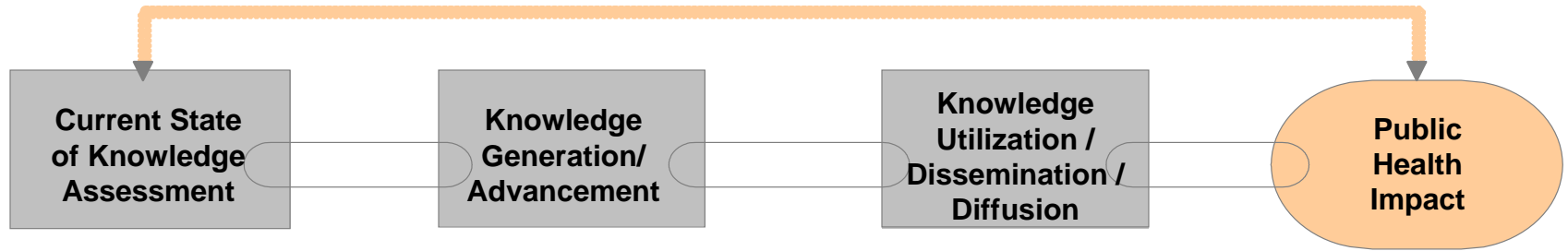
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Development of Priority Questions

Public Health Impact



Public Health Impact



Assessing the relationship between biomedical research and public health.

- Improved quality of life
- Reduced burden of disease
- Increased life expectancy
- Expanded availability of care

Transition examples:

- Emergent needs
- Disease burden
- Science Policy
- Experiences of the public

NIH-WG & CoC Generated

- How can NIH **capture the contribution** of basic, clinical, and translation research to **changes** in public health? What are the potential constructs, concepts or data that should be included?
- What are the **pathways of public health impact** offered by various research projects that were considered **high risk/high reward and innovative**?
- How can NIH appropriately **assess the impact** of research activities? What indicators would be most relevant and feasible given **quality of life, temporal, and economic factors**?
- How can a systematic model be developed that effectively incorporates **public health needs** into the **NIH decision making** process, assesses outcomes of the endeavors, and facilitates associated feedback loops?
- When and how can research findings be **translated** into public health science **policies and/or standards** of care to improve public health benefits? How can the impact be assessed?

Invited Expert Focused

Overarching Guiding Question for Theme

What **systemic models** for improved public health, including pathways and contexts, could be useful for informing multiple NIH **decision-making processes**?

Breakout Group Priority Question

How do we measure the impact of NIH research on public health?

Charge:

- Develop a model for assessing the question?
- Identify constructs and ways to assess each?

Meeting Conceptual Model

