

## Scientific Research Toolbox Instrument

### Motivation

Core Question: Does the principal value of research stem from its applicability for solving problems?

1. The principal value of research stems from the potential application of the knowledge gained.

*Disagree*

*Agree*

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I don't know

N/A

2. Cross-disciplinary research is better suited to addressing applied questions than basic questions.

*Disagree*

*Agree*

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I don't know

N/A

3. My disciplinary research primarily addresses basic questions.

*Disagree*

*Agree*

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I don't know

N/A

4. The importance of our project stems from its applied aspects.

*Disagree*

*Agree*

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I don't know

N/A

5. The members of this team have similar views concerning the motivation core question.

*Disagree*

*Agree*

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I don't know

N/A

## Scientific Research Toolbox Instrument

### Methodology

Core Question: What methods do you employ in your disciplinary research (e.g. experimental, case study, observational, modeling)?

1. Scientific research (applied or basic) must be hypothesis driven.

*Disagree*

*Agree*

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I don't know

N/A

2. In my disciplinary research, I employ primarily quantitative methods.

*Disagree*

*Agree*

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I don't know

N/A

3. In my disciplinary research, I employ primarily qualitative methods.

*Disagree*

*Agree*

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I don't know

N/A

4. In my disciplinary research, I employ primarily experimental methods.

*Disagree*

*Agree*

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I don't know

N/A

5. In my disciplinary research, I employ primarily observational methods.

*Disagree*

*Agree*

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I don't know

N/A

6. The members of this team have similar views concerning the methodology core question.

*Disagree*

*Agree*

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I don't know

N/A

## Scientific Research Toolbox Instrument

### Confirmation

Core Question: What types of evidentiary support are required for knowledge?

1. There are strict requirements for the validity of measurements.

*Disagree*

*Agree*

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I don't know

N/A

2. There are strict requirements for determining when empirical data confirm a tested hypothesis.

*Disagree*

*Agree*

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I don't know

N/A

3. Validation of evidence requires replication.

*Disagree*

*Agree*

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I don't know

N/A

4. Unreplicated results can be validated if confirmed by a combination of several different methods.

*Disagree*

*Agree*

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I don't know

N/A

5. Research interpretations must address uncertainty.

*Disagree*

*Agree*

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I don't know

N/A

6. The members of this team have similar views concerning the confirmation core question.

*Disagree*

*Agree*

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I don't know

N/A

## Scientific Research Toolbox Instrument

### Reality

Core Question: Do the products of scientific research more closely reflect the nature of the world or the researchers' perspective?

1. Scientific research aims to identify facts about a world independent of the investigators.

*Disagree*

*Agree*

1      2      3      4      5      I don't know      N/A

2. Scientific claims need not represent objective reality to be useful.

*Disagree*

*Agree*

1      2      3      4      5      I don't know      N/A

3. Models invariably produce a distorted view of objective reality.

*Disagree*

*Agree*

1      2      3      4      5      I don't know      N/A

4. The subject of my research is a human construction.

*Disagree*

*Agree*

1      2      3      4      5      I don't know      N/A

5. The members of this team have similar views concerning the reality core question.

*Disagree*

*Agree*

1      2      3      4      5      I don't know      N/A

## Scientific Research Toolbox Instrument

### Values

Core Question: Do values negatively influence scientific research?

1. Objectivity implies an absence of values by the researcher.

*Disagree*

*Agree*

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I don't know

N/A

2. Incorporating one's personal perspective in framing a research question is never valid.

*Disagree*

*Agree*

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I don't know

N/A

3. Value-neutral scientific research is possible.

*Disagree*

*Agree*

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I don't know

N/A

4. Determining what constitutes acceptable validation of research data is a value issue.

*Disagree*

*Agree*

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I don't know

N/A

5. Allowing values to influence scientific research is advocacy.

*Disagree*

*Agree*

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I don't know

N/A

6. The members of this team have similar views concerning the values core question.

*Disagree*

*Agree*

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I don't know

N/A

## Scientific Research Toolbox Instrument

### Reductionism

Core Question: Can the world under investigation be reduced to independent elements for study?

1. Differences in spatiotemporal scales impede useful synthesis in cross-disciplinary research.

*Disagree*

*Agree*

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I don't know

N/A

2. The world under investigation is fully explicable as the assembly of its constituent parts.

*Disagree*

*Agree*

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I don't know

N/A

3. The world under investigation must be explained in terms of the emergent properties arising from the interactions of its individual components.

*Disagree*

*Agree*

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I don't know

N/A

4. My research typically isolates the behavior of individual components of a system.

*Disagree*

*Agree*

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I don't know

N/A

5. Scientific research must include explicit consideration of the environment in which it is conducted

*Disagree*

*Agree*

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I don't know

N/A

6. The members of this team have similar views concerning the reductionism core question.

*Disagree*

*Agree*

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I don't know

N/A

## Scientific Research Toolbox Instrument

	<b>Demographic Profile (ID# _____ )</b>
1	Male _____ Female _____
2	Career phase: Early _____ (1-7 yrs) Mid _____ (8-20 yrs) Late _____ (20+ yrs)
3	# of years you have been participating in inter- or cross-disciplinary activities _____ yrs
4	What discipline(s) or profession(s) would you describe as your primary identity? 1. _____ 3. _____ 2. _____ 4. _____
5	Ethnicity: _____

Is there anything else that you would like to share with us?