

A world map with a grid overlay, showing continents in various shades of green, yellow, and orange, and oceans in light blue. The map is centered on the Atlantic Ocean.

# **Conceptualization of Research Topics and Formulation of Specific Aims**

**Presented as part of a workshop for junior researchers at  
the Global Health Council Annual Meeting  
Washington, DC 2011**

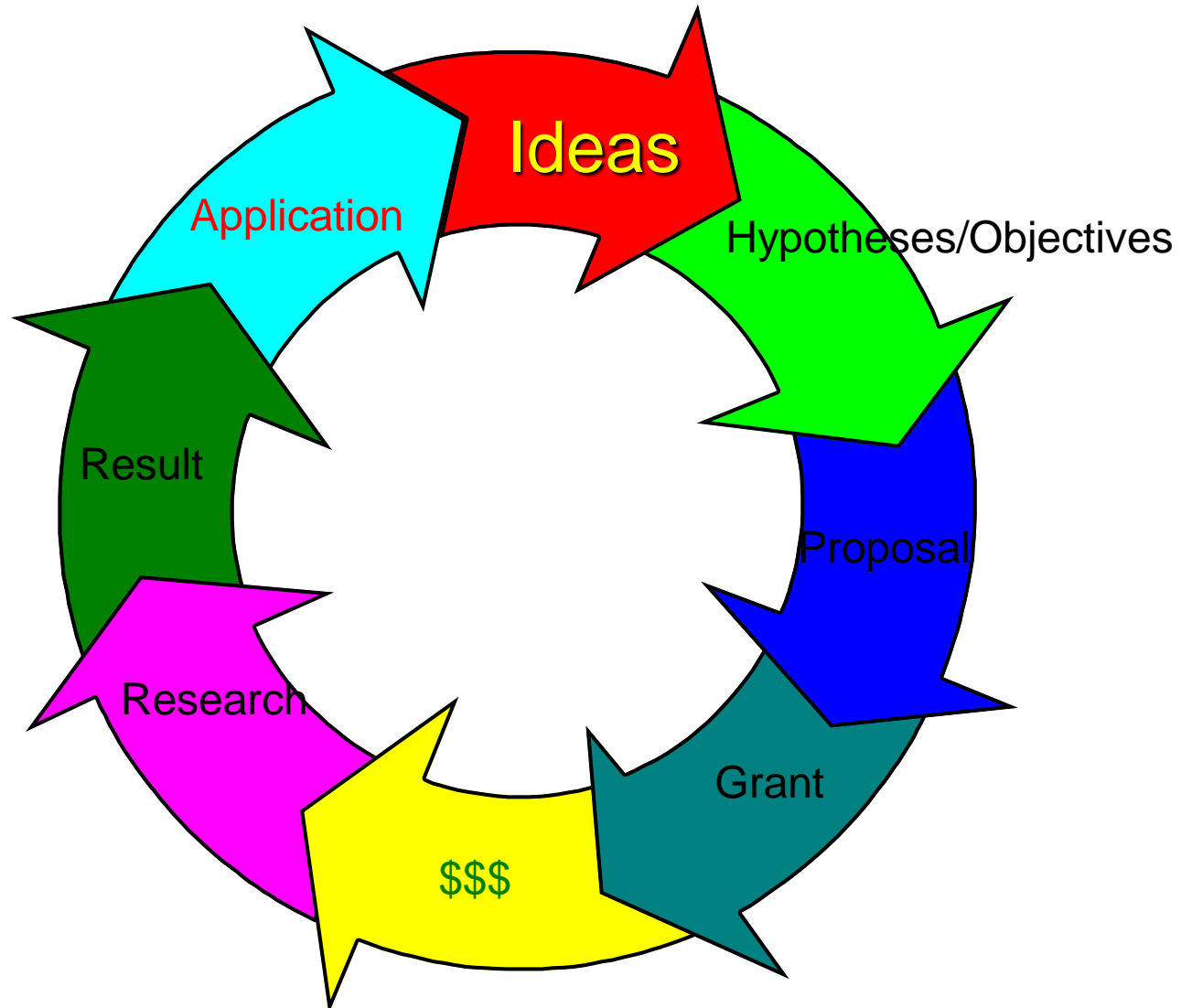
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# Goals of this Module

- Describe the difference between a research topic and a research question
- Describe the process of getting from one to the other
- Describe key aspects of well-written research questions and specific aims

# Asking the Right Question



# Finding a great idea

- The 3 Cs:
  - **Curiosity** to investigate and question situations
  - **Critical thinking skills** to refine your curiosity into a clearly stated idea
  - **Courage** to have “bad ideas”

# Research topics...

- **Broadly define the area of research**
- **Are not the same as the title of your research study**
- **Need further work to become feasible research projects**

# Conceptualizing Research Topics

- Finding your focus:
  - Which aspects of your discipline interest you most?
  - What have you observed that you have questions about?
  - What articles have you read that have raised questions in your mind?



# Conceptualizing Research Topics

- Where are the gaps in the literature?
  - By topic (what is not being looked at?)
  - Methods (what is not being done?)
  - Populations (who is not being studied?)
  - Comparisons (who is not being compared?)



# Where to start?

- **Read, read, read**
- **Detailed literature searches**
- **Attend seminars, conferences and presentations**
- **Discuss subject area with peers and seniors**
- **Listen**
- **Ask questions**



# Refining research topics

- **Discuss with fellow researchers**
- **Discuss with stakeholders**
- **Assess what is most critical to learn**
- **Assess research resources available**
- **“The Ideal” may not be realistic**

# Questions to Ask Yourself

Is this a good idea?

1. Has it been done?
2. Who cares?/ So what?
3. Can it be addressed using appropriate research methods?
4. Will it stimulates interest by others and the sponsor
5. Is it feasible/practical/doable?
6. Is it fundable?

# Research Topics -> Research Qs

- Research Topics need narrowing to become feasible projects

Examples?

“Infant health” → “Community perceptions of neonatal jaundice”

# Each Study is Only One Piece of the Puzzle



# Example: SARS

- Epidemiologic studies
- Economic impact
- Psycho-social impact
  - On those quarantined
  - On caregivers
  - On families left behind



# Specific Aims

- Aims, Hypotheses, Objectives...
- The Overall Objective is the main question that the researcher seeks to answer
- There may be three to five Specific Aims underneath that overall objective, driven by Hypotheses
- Within the specific aims may be Study Objectives, or exactly what you plan to do to achieve the broader aims

# Writing Specific Aims/Objectives

- **KEEP THEM SIMPLE**
- **S -- specific**
- **I -- immediate (why do this project now?)**
- **M -- measurable (what data will you gather?)**
- **P -- practical (realistic/feasible?)**
- **L -- logical (build to achieving goal)**
- **E -- evaluable (significance, how assess impact?)**

*Proposal Planning and Writing 2nd edition, Oryx Press, 1998*

# Refining Your Specific Aims

- Are your aims descriptive vs why? Fishing vs hypothesis driven?
- Do the aims link to the central hypothesis?
- Is each aim tied to a working hypothesis?
- Is each aim needed?
- Is there a relative balance between specific aims with effort and anticipated outcomes?
- Does the ability to meet one aim depend on the outcome of another?



# Problems with Specific Aims and Significance

- **Problems with specific aims:**
  - Too ambitious, too much work proposed
  - Unfocused aims, unclear goals
  - Limited aims and uncertain future directions
- **Problems with significance:**
  - Not significant nor exciting nor new research
  - Lack of compelling rationale
  - Incremental and low impact research

[http://www.ninds.nih.gov/funding/grantwriting\\_mistakes.htm](http://www.ninds.nih.gov/funding/grantwriting_mistakes.htm)

# Reasons for Rejections

- **Outcomes nebulous**
- **Objectives are global purposes rather than specific, measurable, achievable activities**
- **Realism of some objectives is questionable**
- **Confusing, nonspecific, nonmeasurable objectives**
- **Objectives are stated as activities**

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# WEB Resources

- Grantwriting 101:

<http://www.guidestar.org/rxa/news/articles/2006/grant-writing-101-resources-for-grant-writers.aspx>

- Writing a research proposal:

[http://www.meaning.ca/archives/archive/art\\_how\\_to\\_write\\_P\\_Wong.htm](http://www.meaning.ca/archives/archive/art_how_to_write_P_Wong.htm)

- Defining your research question:

<http://science.dodlive.mil/2010/10/04/defining-the-beginning-importance-of-research-questions-hypotheses/>

# Reminder: Goals of this Module

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# End of Conceptualization Module