You Want Me to Do What?!?!

Introduction to Research for ACSC OLMP Students

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This is a common student reaction when we explain the requirements of graduate-level research.

Why? Because graduate research is very different from what students usually have done at lower educational levels; or in one’s career.
The Purpose of Research at Different Educational Levels

- At lower levels, the task is often to:
  - find knowledge on a topic
  - compile it and/or analyze it
  - write a report of some sort on it

- At the graduate level the task is add to what the human race knows about a topic in as objective a manner as possible
  - (in the ACSC program, what the USAF or DOD knows about a topic)
It’s a key step in earning a master’s degree…

• …one aspect of being a “master” in some discipline is to show that you are capable of using the research process to add something to the existing state of knowledge/literature on the topic
Why not wait until I take the first research elective?

- It is extremely important to have a topic selected prior to entry into RE-5610/RE-1, because...
  - You will not have time to do preliminary research once you enter the frontloaded RE-1 course
    - An initial draft of your research question is due in week one of the course!!!
  - Students who enter the RE-1 course with no topic, and no preliminary research done, frequently struggle, and write on topics they have less interest in than students who prepare
    - There is a word for doing research on a topic you are not interested in... “TORTURE!!!”
Find a topic!

- If something strikes you as interesting in a course you are taking, investigate it further and discuss it with your instructor.
- If there is some Air Force- or broader defense-relevant topic that you are interested in learning about and advancing knowledge in, that might be a way to go.
- If there is a question or issue that has puzzled you related to your career specialty or profession, that could be the basis for a viable topic.
Where else can I look for ideas?

- Air University Research Information Management System. You may register at https://auportal.maxwell.af.mil/aurims/Welcome.action
- AURIMS Research Topics 2012
- USAF Institute for National Security Studies Topics 2011-2012
- US Army War College Key Strategic Issues List 2011-2012
So all I have to do is pick a topic from one of those databases?

- If only it were that easy!
- These topics and questions are gathered from various commands, agencies and other organizations that need answers and knowledge
- They are NOT built with ACSC research papers in mind
  - Many of these topics would need a book or books to provide a complete answer
  - An ACSC paper is required to be only 25 pages long
- You may need to find a “piece” of the topic or question you might be able to address with your paper – For example:
  - Too broad: What is the USAF role in planetary defense?
  - Narrower and better: What is the specific role of the USAF in preparing for the next “Tunguska” sized, roughly 40 ton asteroid, in the scheme of planetary defense, if given a decade to prepare?
You should conduct an initial literature review*

- The purpose of a literature review is to understand the state of existing knowledge on the topic, and it includes many types of sources
  - *A literature review for ACSC does not mean review of great literary classics like *Moby Dick*; it is a term used in academic writing for review of a collection of materials on a topic
  - If you don’t know the current state of knowledge on a topic, how can you find where gaps in that knowledge exist? You can’t—and doing research to fill a knowledge gap is how you will add to what we know
  - Initial literature review is essential to provide you with a solid foundation for your research proposal and paper!
What should the literature review do?

- Define the topic area; what are the key theories, concepts, ideas?
- Outline the major issues/debates, unresolved questions and problems
- Summarize/synthesize the arguments and ideas of others as objectively as possible
- Identify the key sources and experts
- Explain what we know to date, what we think we know, and what needs to be explored
- It should NOT include your new ideas
Some Basic Steps of a Literature Review-1

- Start with some general reading to familiarize yourself with the topic
- Consult subject-specific dictionaries, encyclopedias, and websites as applicable
  - Hint: Fairchild/AU Library has many topic-specific bibliographies already compiled on topic areas
- As you read, build a list of frequently used concepts/terms to help narrow your search
- Pay careful attention and note those authors who are frequently cited as “experts”
Some Basic Steps of a Literature Review - 2

- Find a logical method for recording what you find and how to cross-reference your materials
  - Hint: Could be chronological, by type of source (books versus journals; government versus business), by methodology (surveys versus technical data)

- Be systematic; keep records of what you have searched and the date completed
  - You may need to go back to do further searches of the same source using different terms
  - You may find a journal or newsletter related to your topic that is updated consistently and needs to be rechecked
  - Hint: While it takes more time initially, you will appreciate having those detailed notes later in the process
Prepare a list of likely relevant sources of information with notes to yourself that might be helpful later, and any leads to follow up on.

Fairchild/AU Library has subject and topic-area specialists that can assist you personally; go to the library website to find contact information.

- Hint: Fairchild/AU Library also has links to specific military and DOD-related search engines.

If your topic pertains to your career field, don’t forget you will probably have some subject-matter experts close at hand to consult.
As you read, be on the lookout for “gaps” in the literature you might fill with your research.

Communicate with authors who have recently published on your topic or other experts – ask them for suggestions on what you might investigate.

If you come up with a gap you might fill—in other words, a “research question” you might answer with your research—think about how you would gather additional data to answer it.

- A research question has to be “answerable” – you must be able to find open source data you can use to answer your question and write your paper.

- Hint: You cannot use classified information or “For Official Use Only” information for an ACSC OLMP research paper.
Graduate-level research requires you to create knowledge

- You are not writing a descriptive or argumentative term paper
- You are not writing an opinion piece; objectivity and critical analysis are the essential

The key is to begin your topic selection and literature review NOW!
References