Government Careers
(with Insights from Industry)

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How I Got Here

- PhD University of Texas, Prof. James Holcombe
- DuPont Chemicals
  - Analytical Technology Center
- DuPont Central R&D
  - Process Sensors and Analyzers
  - Bioprocess Development Center
- Los Alamos National Laboratory
  - Group Leader, Analytical Chemistry Sciences
  - Advisor, Iraq Survey Group (ISG)
What does a PhD mean?

- A doctoral program is meant to teach a process for learning and doing research
  - Also a means to specialize in a particular area

- The Dissertation Defense is not the end of the education process
  - It rather merely demonstrates that you can become an expert

- Successful people always learn new things, even specialize in them
  - Analytical Chemistry epitomizes this

- These 4-5 years do not have to define your future
Specialist vs Generalist

**Specialist**
- Specialize in a particular technique
- Often proceed through Technical Ladder
- Many job ads target a specialty
  - HPLC for Pharma
  - Instrument companies
- Post-doc offers opportunity to hone this specialty, or pick up another

**Generalist**
- Possess a broad analytical knowledge
- Often proceed through Management Ladder
- Some companies target generalists
  - Discuss during interviews
- Post-doc may not be necessary, esp. if targeting an industrial position
Are you a Starter or a Closer?

- Do you prefer to generate new ideas or start new projects?
  - “Starter”

- Do you prefer to take an existing idea to completion?
  - “Closer”

- Both are needed, but uncommon to excel at both

- You can either work on your weak area, or partner with a counterpart
Research vs “Programmatic” work

**Research**

- Must obtain funding
- Independent
- Instrumentation Development, complex methodology
- Can be exhilarating, but can be stressful

**Programmatic**

- Funding often provided
- Support role
- Method Development, sample analysis
- Can become monotonous, but can be less stressful
Opportunities at Government Labs

- National Laboratories
  - Weapons Labs, Energy Science Labs
- Forensics
  - FBI, ATF, DEA, DHS, local LE
- Military Laboratories
  - NRL, ARL, Edgewood, many others
- Intelligence
  - CIA, NSA, DOE, DHS
- USDA, EPA, FDA, NIH, CDC

Many of these have citizenship and/or security clearance requirements
DOE National Laboratories

- Weapons research and manufacturing

- Threat Reduction
  - Nuclear nonproliferation
  - Other Weapons of Mass Destruction
    - Biological
    - Chemical
    - Explosives

- Energy Research
  - Clean coal, solar, nuclear

- Basic Research in chemistry, other science and engg.
  - Often start projects that are completed elsewhere
    - E.g., Human Genome Project
DOE National Laboratories

- Los Alamos (NM)
- Sandia (NM)
- Lawrence Livermore (CA)
- Pacific Northwest (WA)
- Argonne (IL)
- Oak Ridge (TN)
- Idaho (ID)
- Savannah River (SC)
- Lawrence Berkeley (CA)
- Brookhaven (NY)
Opportunities at National and other gov’t labs

- **Post-doc**
  - 1-3 year assignment
  - Usual route to permanent position, but no guarantee

- **Post-Bac or Post-MS**
  - Usually only 1 year, then decide: Grad School or Technician?

- **Graduate Research Assistant**
  - Complete basic requirements at home university
  - Research performed at NL
  - Graduate from home university

- **Summer/short-term students**
  - High school, undergrads, grad students
"He who adds not to his learning diminishes it."
- The Talmud