Strategies for Your Career
Perspectives from a National Laboratory

Carmen Pancerella
Sandia National Laboratories

carmen@sandia.gov

CRA-WP
Computing Research Association
Widening Participation

About Me

Carmen Pancerella

Principal Member of Technical Staff, Sandia National Laboratories

- Ph.D., Computer Science, University of Virginia, 1994.
- Started at Sandia National Laboratories as a Post-Doctoral Researcher, 1994.
- Hired as a full-time employee at Sandia National Laboratories, 1995.
- Moved to the Greater Boston area, became a full-time telecommuter at Sandia National Laboratories, 1997-present.
- Managing Editor, *International Journal of Chemical Kinetics*, 2008-2012.

Research at National Laboratories

Sandia National Laboratories

- Render "Exceptional Service in the National Interest"

- DOE National Security Laboratory, FFRDC

- National Priorities: Energy, Critical Infrastructure, Nonproliferation, Defense, Cybersecurity, Homeland Security, Counterterrorism

- Research Foundations: Bioscience, Computing & Information Science, Engineering Science, Earth Science, Materials Science, Nanodevices and Microsystems, Radiation Effects & High Energy Density Science

- Lab-Directed R&D (LDRD): Investment in Research to Solve Nation's Challenges

Impact of R&D at a National Lab

- Multi-Disciplinary scientific teams, with access to unique resources, applied research, delivering solutions for the nation's most challenging national security issues.

  - Sandia has over 50 COVID-related projects that are designed to help the nation during the pandemic. These include R&D in biological sciences, engineering, high-performance computing, computer modeling, materials science, and others.

- Most projects involve collaboration: organizations within Sandia (NM and CA); and with Federal Agencies, other national labs, universities, and industry.

- Some R&D can be classified or proprietary (not publishable).

CRA-WP
Computing Research Association
Widening Participation

Career Path #1: Research

Career Goal: Senior Research Scientist at a National Laboratory

- Career Goal: Senior senior research scientist with both internal and external visibility

  - Branch out into new research areas that are of priority to the labs.
    - Don't limit yourself to a single area of expertise.
  - Become visible to senior lab management.
    - Take opportunities to give talks within the laboratory to senior leadership, sponsors, and visitors.
    - Learn the lab culture and understand your boundaries.
  - Build a network of collaborators for writing proposals and research papers.
    - Hire interns, and post-doc researchers to support your research.
  - Publish your research, and become an expert outside of the lab.
  - Be willing to work on both long-term, complex technical problems and also quick responses to urgent problems facing our nation.
  - Keep up with the current literature.

Career Path #1: Research

Funding, Networking, Performance Reviews

- **Internal funding:** carefully read the requests for proposals, do not be afraid to ask questions about a funding call, collaborate within the lab, and be willing to adapt to specific needs of the lab and to pick up new research areas.
- **External funding:** there are DOE, DARPA, NIH, and other calls that DOE labs can respond to; however, not NSF. Successful external proposals typically involve partnering with another lab, university, industry on a proposal that leverages lab expertise and resources.
- **Internal networking:** develop relationships with managers and researchers across the lab. Create an elevator pitch on your work so that you could explain to managers, funders, or Congress why your work is important.
- **External networking:** publish your research, join professional societies and try to become a senior member of societies, be active in strategic conferences and journals as a reviewer or on committees, invite external research colleagues to give a talk at the labs, get invited to universities or labs to present your work.
- **All networking:** Don't be afraid to ask internal and external colleagues to help you get your foot in the door!
- **Performance review:** set long-term career goals, discuss these goals with your manager, each year work on achieving steps towards these goals. Continue to get feedback!

CRA-WP
Computing Research Association
Widening Participation

Career Path #2: Management

Career Goal: Moving to high-level senior management at a national laboratory

- Career Goal: High-level senior management (director or VP level), managing very large laboratory-wide programs

  - Take advantage of management training to improve.
  - Participate in some laboratory-wide programs, professional development activities, recruiting, etc. However, be selective of your time.
  - Apply for management positions, and seek feedback afterwards.

  - Build relationships and trust with upper management.
  - Maintain relationships with R&D staff to understand current challenges and solutions.

  - Change focus to broader, visionary view.
  - Move from problem-solving to opportunity-seeking.
  - Shift from "doing" to "delegating and leading".
  - Think strategically.

CRA-WP
Computing Research Association
Widening Participation

Be Strategic and Flexible

You can do anything you want, just not everything all at once.

- Prioritize and focus your attentions.
- Find a mentor for the job you want.
- Show up and chose to be present. Engage in meetings. Have an impact on your projects, in your departments, in the laboratory, in external professional activities.
- Tell the truth without blame or judgment.
- Be open to the outcome, not attached to the outcome.
- Continue to seek feedback from managers, colleagues, and team members, both internal and external. Use feedback to improve.
- Take every task seriously and always produce good work products on time.
- In addition to being a "leader", be a good team member.
- Finally, don't burn any bridges!

CRA-WP
Computing Research Association
Widening Participation