

Initial NACEPT Advice Letter on EPA Workforce Planning

*Scientific & Technical Competencies
To Meet Tomorrow's Challenges*

Topics Covered in the Charge

1. Scientific & technical competencies to meet tomorrow's challenges
2. Strategies to obtain & retain scientific & technical expertise
3. Strategies to attract & retain superior executive leadership talent
4. Leadership capabilities & culture for "One EPA"
5. Ensuring Diversity

A Fundamental Question

posed at the beginning of the charge

“Given the complexity of EPA’s mission, the rapid pace of scientific and technological advances, and shifts in policy, science, engineering... what are the scientific and technical competencies necessary to support EPA’s mission today and ten years from now so that EPA is prepared for tomorrow’s challenges?”

A Recommendation in the charge

“Specifically, NACEPT should develop realistic future scenarios that capture evolving mission priorities and their drivers, then identify the scientific and technical competencies required to successfully accomplish developing mission areas.”

10 Scenarios

of evolving mission priorities and their drivers

1. Resource Constricted
2. Big Cross Cutting Problems
3. Encouraging Technological Innovation
4. Climate Becomes a Top Priority
5. New Environmental Justice Issues
6. Focus on Nanotechnology
7. Getting in Front of Change
8. Sustainability Emphasis
9. Sensor Rollout
10. Convergence of Communication Technologies

Implications for Needed Agency Competencies - an example

Encouraging
Technological
Innovation

- ‡ Increase capacity to speak the language of business and work cooperatively with entrepreneurs, corporations, venture capitalists, other sources of finance
- ‡ Increase ability to monitor and stay on the forefront of technological developments in green/clean technology
- ‡ Develop broader capabilities in computer science and IT, not just for internal program support but for understanding IT aspects of emerging clean technology, advanced environmental sensor systems allowing real-time understanding and action, data visualization, simulations, and many other purposes

EPA's Mission Critical Occupations (MCOs) related to science & technology

- Toxicologists
- Geneticists
- Ecologists
- Biologists
- Economists
- Chemists
- Physical Scientists
- Health Scientists
- Environmental & Mechanical Engineers
- Attorneys

Recommended New MCOs

or higher priority by other means

- Business & Finance
- Social, Behavioral & Decision Sciences
- Environmental Design
- Computer Science/Information Technology
- Environmental Foresight
- Partnership Development
- Public Outreach
- Trans-disciplinary Systems
- Statistical Analysis

Changing Emphasis Within Existing MCOs - 2 examples

Current MCOs	Subfields to consider for greater emphasis
Economists	Behavioral Economics Ecological Economics
Environmental engineers/Mechanical engineers	Ecological Design Industrial Ecology

Recommendations

- Consider a broad range of changes in circumstances over the decade ahead [10 scenarios]
- Consider adding new occupations to EPA's list of MCOs or elevating them by other appropriate means [9 occupations]
- Give new consideration to what subfields and specialties within the existing MCOs will become increasingly relevant over the next 10 years [Several suggestions]