

My view

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What is the right research topic for an individual, public sector, weed scientist to choose? Is there an inherently unethical research topic? Do public sector weed scientists have an obligation to pursue the best research topic they are capable of? These are difficult questions for many public sector scientists to answer. I will argue that doing the right thing is a complex issue for an individual and that it involves personal and social values as well as constraints inherent in public sector employment. The questions asked change as an individual's career changes from early pretenure decisions to those faced by a senior scientist nearing retirement. Specific, topical issues that may affect many of us as we choose our research must also be considered. Making an informed decision about what research topic to choose is often neither the best nor a wrong choice. Personal values and constraints dictated by the job description often find us in a philosophical and personal purgatory. The choices made aren't wrong, but somehow, they give us the uneasy feeling that our research is not the best we could achieve.

The Ethical Foundation: Values and Topic Choice

Personal beliefs and values are inevitable when a weed scientist chooses a research topic. How do an individual's values affect choice of a research topic? Do scientists have an ethical obligation to follow their values in their choice? Who is the audience that influences our personal choices?

Every choice about research topics is value laden. Additionally, in every public sector career, there are certain unavoidable value choices that have to be made. Some of these unavoidable choices are as follows:

1. **Respect and Credibility.** Often, gaining the respect and credibility we seek from others conflicts with choices that may take us in a new, untested direction.

2. **Making a Contribution.** Will my science mean anything to others? Deciding to do research that makes a real scientific contribution can come in conflict with doing smaller tasks that are often unrewarded in the long term.

3. **Power and Influence.** What values are operative when the desire to pursue fame dominates personal development and affects research topic choice?

4. **Funding.** What if a fundable grant conflicts with the right choice? Sometimes, we discover new, unusual insights that are less likely to be fundable than more conventional projects. What values determine how one decides to go with the sure thing or try the new direction?

5. **Career Advancement.** Is my science a stepping stone to: more science, administration, or industrial employment? There are many paths individuals can take in the public

sector, and sometimes, personal values lead us away from science toward other opportunities.

6. **Having Fun.** Do I enjoy going to work everyday? The best work is always the work we love and care about the most. Being rewarded for work we don't enjoy can lead to boredom and unhappiness.

7. **Beliefs from My Life Outside Work.** It is impossible to separate personal beliefs from research topic choice. Our religious, political, personal, and philosophical beliefs make research topic decisions complex.

The Ethical Foundation: Topic Choice

Many unavoidable factors modify free choice. Every public job comes with a description and explicit or implicit employer expectations. We must fulfill these obligations. Our values may conflict with employer expectations and constrain choice of research topic. Some constraints are:

1. **Job Description.** Making the right choice is sometimes difficult. Despite this, there is often leeway in interpretation, and over time, jobs change and are modified.

2. **Tenure.** What if I have to choose between topics ensuring tenure or the right choice? Tenure assures academic freedom and, at the same time, is a filter used to ensure only acceptable individuals are given that freedom.

3. **Peer Pressure.** What if the right choice deters approval from my colleagues? One of the most difficult things for a scientist to do is to go against the expectations of the group.

4. **Dogma.** What choices should I make if I feel the accepted science in a topic area is wrong? Many ideas become firmly entrenched, and following a research direction contrary to established thought is difficult.

5. **Hot Topic Mentality.** Many want to be regarded as brilliant scientists and mainstream heroes. Sometimes, achieving new insights puts one at odds with current trends, increasing the risk of being seen as an iconoclast or pariah.

The Life Cycle of a Career

Every academic career is divided into phases that present different opportunities and challenges. Most careers can be divided into three phases:

1. A new scientist is faced with a seemingly impossible conflict between doing the right thing while avoiding repeating the dissertation, striving to achieve tenure, obtaining credibility and approval, acquiring funding while balancing conflicting priorities, and attracting good people.

2. The middle phase is a time for reflection and planning. Frequent questions include: Should I switch directions or

keep on? Is boredom a daily challenge? Should I seek my lost youth or be content? Am I getting stale? Can I find new ideas? Do I need a sabbatical? or Should I switch gears and go into administration or industry?

3. As we near retirement, we reflect on what our career has meant and plan for the final phase. Common questions include: Am I ready to retire? What should I do to cap my career? What mark have I made? Should I retire early? and How do I gain the respect of the "young bloods"?

Joining the Issue: Confronting Complacency

Every public sector researcher is responsible to employers, taxpayers, and themselves for the choices made. Many do not take advantage of the freedom they are given. Our decisions are inherently personal and completely public. Below are several issues that may affect what you decide. Do you agree or disagree? Why? In each instance, what others believe is less important than how these challenges affect you.

1. Weed scientists lack diversity. There are more choices

available than are currently being made. We are often unimaginative in our choice of research topics.

2. Weed scientists are generalists. Many only superficially tackle many different research problems. Their programs lack focus. We resist specialization, and our lack of depth reduces our credibility with many outside our discipline.

3. The herbicide industry dominates the research agenda. Easy money has consumed the time and expertise of many public sector scientists and has diverted many away from basic and applied problems. Too many weed scientists focus on herbicide efficacy at the expense of agricultural sustainability and environmental problems.

Deciding how to do the right thing in research is complex and changes as we change over time. It is impossible to separate personal values from the process of research topic choice. We may have more freedom to choose than is currently used, especially if we have a clear goal and work to achieve that goal. We must reflect on and modify our choices frequently. We especially need role models in weed science to guide us and give us courage to do the right thing.