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Scientific Integrity in a Regulatory Context- An Elusive Ideal at EPA

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In this commentary, I attempt to explain why the union which represents professional employees at the headquarters office of the U.S. Environmental Protection Agency (EPA) considers the EPA's Principles of Scientific Integrity (Principles) so important. The Principles are a policy statement that was adopted by EPA's National Partnership Council and promulgated by Administrator Carol Browner in 2000. The union was the driving force behind the acceptance of the Principles, having worked for over a decade to secure their adoption by the Agency. The Principles appear at the end of this essay.

Management's Right to Direct Work

When I worked as a research and process development chemist in the private sector, I was almost always involved in research work that had a specific, management-directed goal in mind - make a plasticizer that won't mar polystyrene finishes on refrigerators, that won't degrade to produce odors that will affect food flavors - make a non-toxic plasticizer for blood bags that won't migrate into blood lipids, yet forms a stable plasticized container system at all temperatures - develop a manufacturing process for a phosphorus-based flame retardant that won't blow up the plant, yet produces high-quality product at a cost customers will bear, etc., etc. Management never told me to lie about how well a plasticizer performed in an extraction test or whether it marred a test surface. Management never told me to change the yield figures to make process economics look good. They never had to. It is obvious that faking it under such circumstances simply is not an option - as Richard Feynmann put it when he investigated the Challenger disaster - "Mother Nature will not be fooled."

EPA Science Outside the Laboratory

Those of us who work at EPA headquarters mostly don't have the pleasure of working at a research bench, asking Mother Nature questions, observing her answers and then deciding what next to do: publish what we think she is saying, if our confidence in our interpretation is high enough; or go back and ask more questions until our understanding and confidence are sufficient to publish. The way we deal with science at headquarters is quite different from that ideal.

There may be a court-ordered schedule of rule-making facing our Office management, and it might involve setting what amounts to a "safe" exposure level for humans or other species. On occasion, a manager has his or her own idea of what that "safe" level should be, or the manager gets orders from up the line, perhaps even the White House or Capitol Hill, that the "safe" level is some particular value. This is not hypothetical. This has happened and continues to happen. The manager then comes to a staff scientist and says, "This is the safe level that we are going to propose in the Federal Register. Write me a justification for it." What is sometimes overtly stated, sometimes not, is, "And I don't care what the literature says, my bosses have given me instructions on this, and if you want to stay on my good side, and if you want to see some award money, you will craft for me an elegant justification for this 'safe' level."

This situation, while not always the norm, does happen. When the literature does not support what management wants to do, it is a gut-wrencher for ethical scientists whose work involves reading the literature, making value judgments about the merits of the published work of other scientists, and writing technical support documents for Agency rule-making (or overseeing contractors who do that).

Certain statutes permit management to set "safe" levels based on factors other than the physical and biological sciences, for example, Maximum Contaminant Levels (MCL) for drinking water. MCLs are supposed to be set as close as possible to the Maximum Contaminant Level Goal (MCLG), which is supposed to be based solely on scientific considerations of toxicity, but the MCL can be set at a different level if economic, feasibility or other factors so indicate. We have no quarrel with that situation - it is, after all, what the law passed by Congress and signed by the President and adjudicated by the Courts, mandates - it is a Constitutionally right-on situation, and we are sworn to uphold the Constitution.

Where we do have a quarrel, however, is when management orders up a phony MCLG so that a politically dictated MCL will have scientific "cover." We do have a quarrel when management arranges it so that an EPA toxicologist is prevented from attending a pathology review at which all malignant tumors get down-graded so that an economically important pesticide can achieve a lower cancer rating. And when management collects data on indoor air pollutants within its own buildings, conducts and publishes a major survey showing that its own employees were sickened by the pollutants, privately (and in a newspaper article) admits that those pollutants made

the employees sick - and then disavows these results and statements - all to protect a large industry and avoid "getting involved in lawsuits," do we ever have a quarrel. These are just a few high-profile, real-life examples of what scientific integrity means - or doesn't mean - at headquarters.

Present Status of the Principles

We organized this union at headquarters in the early 1980's to fight the sort of distorted use of science described above, which impinges negatively on our working conditions, on our reputations, and ultimately on public health. It took almost two decades and much blood and tears finally to sway one set of senior EPA managers to acquiesce to establishing a set of professional ethics for EPA scientists, now called the Principles of Scientific Integrity.

But the job of establishing the Principles as a working policy is not complete, because a key component is lacking. There is no agreed-upon method of resolving disputes that arise involving the Principles. Under these conditions, the Principles are not much more than pretty window dressing to which EPA management can point, thump its chest and claim to the world that quality science underpins all of its regulatory work. The union has filed two grievances, citing violations of the Principles, and both times management has alleged that the grievance process doesn't reach to enforcing the Principles. We can, and we may yet, test this allegation before an arbitrator, but at the present time we are using another method to bring the Principles to fruition - public pressure.

Our work with EPA Headquarters employees who have taken ethical stands against distorted science has become public knowledge. Citizens and groups outside the Agency have inquired about our work with these employees and we have responded in ways that were useful to these citizens. When EPA tried to limit our ability to defend ethical employees and the public interest in the early 1990's, we called upon those citizens for help. We were successful then, and we have begun a new campaign on behalf of the Principles. We are asking citizens for help in making EPA see the need to make the Principles of Scientific Integrity more than mere window dressing. This campaign began on May 1, 2002 and was triggered by an incident in which a supervisor told a member of our bargaining unit, "It's your job to support me, even if I say $2+2=7$."

Historical and Philosophical Background

EPA Professionals Organize

In 1981, with the advent of an administration expected to be hostile to environmental regulation and to labor, professional employees at the U.S. Environmental Protection Agency headquarters decided to organize. After considering various options, the organizational structure chosen was a labor union. In the federal sector, the right to organize a labor union is protected, and unions have

the statutory right to bargain over certain working conditions. We considered then, and we consider now, that doing professional work in protecting the environment and public health according to high standards of professional ethics to be a working conditions issue.

As 1981 and 1982 rolled along, we witnessed wholesale dismantling of EPA's enforcement functions, were warned by bosses not to talk to the media, saw sweetheart deals cut with polluters and other atrocities that ultimately resulted in jail time or forced resignations for some senior EPA officials, including the Administrator. The times were interesting, and professional ethics was not an EPA management priority

Role of the Civil Service

While the three federal US government branches are headed by people elected by our citizens, or, in the case of the courts, directly appointed and approved by those who have been elected, the day-to-day functions of each branch are carried out by people who are not elected or directly appointed by those who have been elected; i.e. these functions are carried out by government employees in the military and the civil services. These day-to-day governmental tasks range from staffing Congressional offices, to processing Social Security paperwork, to conducting military operations in defense of the Nation.

While they are not elected or appointed officials, all of these government employees in the military and Civil Service are none the less "officers" of the government, and as such they take the same oath of office as the elected and directly appointed officers of government, the President, Members of Congress and U.S. Court Judges. That oath, among other things, binds all of us who serve in the federal government to "...support and defend the Constitution of the United States against all enemies, foreign and domestic..."

This oath is much more than a mere formality. The oath actually binds, by personal honor, each person who takes it to the faithful performance of duty to uphold the Constitution. A person's specific duty depends on which branch the person serves and that branch's responsibility under the Constitution.

We Civil Service scientific employees at the headquarters of the U.S. Environmental Protection Agency are scientific advisers, in essence, to the Administrator and her subordinate EPA managers, i.e. those government officers who have been elected or directly appointed to their positions and who carry the Constitutional authority and responsibility to faithfully administer environmental laws passed by Congress, signed by the President and adjudicated by the Courts. What we do on a day-to-day basis is use the best scientific principles to honestly and ethically evaluate scientific research work done by other scientists so that work can be applied to the laws EPA administers.

Our duty also requires us to be on guard to see that our work is not distorted or misused to subvert environmental laws - our oath to support and defend the Constitution requires this of us. Anyone who would misuse our work to subvert environmental laws is a "domestic enemy" referred to in the oath. The Principles of Scientific Integrity adopted by EPA give us a tool for carrying out this element of our duty "within the family" of EPA.

There are provisions in a number of other statutes that proscribe falsifying information or discriminating against employees who blow the whistle on management attempts to subvert the law, but these statutory tools are often cumbersome and difficult to use and can involve great personal risk to conscientious employees.

Having the Principles of Scientific Integrity as a fully functioning internal EPA mechanism to both resolve disputes and admonish employees and managers against less than faithful execution of the law will be a giant leap forward in improving the administration of the Nation's environmental laws and in making EPA headquarters a professionally satisfying workplace.

PRINCIPLES OF SCIENTIFIC INTEGRITY

It is essential that EPA's scientific and technical activities be of the highest quality and credibility if EPA is to carry out its responsibilities to protect human health and the environment. Honesty and integrity in its activities and decision-making processes are vital if the American public is to have trust and confidence in EPA's decisions. EPA adheres to these Principles of Scientific Integrity.

EPA employees, whatever their grade, job or duties, must:

- *Ensure that their work is of the highest integrity - this means that the work must be performed objectively and without predetermined outcomes using the most appropriate techniques. Employees are responsible and accountable for the integrity and validity of their own work. Fabrication or falsification of work results are direct assaults on the integrity of EPA and will not be tolerated.*
- *Represent their own work fairly and accurately. When representing the work of others, employees must seek to understand the results and the implications of this work and also represent it fairly and accurately.*
- *Respect and acknowledge the intellectual contributions of others in representing their work to the public or in published writings such as journal articles or technical reports. To do otherwise is plagiarism. Employees should also refrain from taking credit for work with which they were not materially involved.*
- *Avoid financial conflicts of interest and ensure impartiality in the performance of their duties by respecting and adhering to the principles of ethical conduct and implementing*

standards contained in Standards of Ethical Conduct for Employees of the Executive Branch and in supplemental agency regulations.

- *Be cognizant of and understand the specific, programmatic statutes that guide the employee's work.*
- *Accept the affirmative responsibility to report any breach of these principles.*
- *Welcome differing views and opinions on scientific and technical matters as a legitimate and necessary part of the process to provide the best possible information to regulatory and policy decision-makers.*

Adherence by all EPA employees to these principles will assure the American people that they can have confidence and trust in EPA's work and in its decisions.