The intent of this column is to have you think about the future of environmental health and the kind of issues that our profession may address in the years to come. I have presented this topic to several of our affiliates at their annual meetings and thought I would share these thoughts with all of the NEHA members. At the time I started to write this column, I was sitting in an airport in Lexington, Kentucky, having spent the previous three days with my friends and colleagues at Eastern Kentucky University, where I gave the keynote presentation at their 15th Annual Environmental Health Symposium. I also had the opportunity to speak in three of their environmental health classes. I presented this column’s topic at the symposium and an abbreviated version to one of the environmental health classes. During my classroom presentation, I had a slight epiphany. In this case, the envisioned future that I presented was not just an academic exercise, but I was, or at least I felt that I was, predicting the future lives of the emerging professionals who currently are today’s environmental health students at EKU and other academic institutions.

In last month’s column (JEH 72[8]), I discussed the mentor-mentee relationship and how mentors could project their influence into the future. In this column, I would like to characterize that future somewhat. As environmental health students and young professionals learn and master the profession, they should be aware of future issues and developments in the discipline and practice, and tailor their learning to prepare to address them. Likewise, mentors also need to be aware of what the future may bring so that they can guide and counsel our emerging professionals. The messages from this column, therefore, span generations as the future, in fact, affects us all and those to come.

What is the future of environmental health? As we experience recent issues and associated limitations with finances and budgets, environmental health programs currently are adjusting, which some people may identify as a major factor in shaping the future of environmental health. My focus here, however, goes beyond what only is happening today; I want to look at where environmental health may be in 10 to 50 years from now.

When I was in the military, I learned that the command responsible for how the army conducts warfare, i.e., its training and doctrine, used the services of futurists (people who practice strategic foresight [Floyd, 2009]) to envision the future for their planning efforts. I will take the same approach here, but instead of planning how to fight wars, I will identify some possible environmental health concerns and directions that we may face in the future. Some of these, in fact, already may have started. Please note that this is only one of many possible futures and that the projected impacts to environmental health are my personal opinion.

One futurist, Joanna Glasner (2005), discusses “social mobilization” and its current impact that we are experiencing in terms of the use of cell phones, personal digital assistants (PDAs), and now “smart” phones. Communication and information access is now, literally, at our fingertips. She projects that this technology may be used with “mapping programs that show us whether anyone we’d like to see is nearby.” I see a similar environmental health application for such mapping-like programs that are able to show where and when food establishments will produce conditions that are sure to cause foodborne illness or when recreational waters will cause a waterborne illness. Then, environmental health professionals can intervene and prevent such outbreaks. It would be even better if such programs could predict such conditions days or weeks before they occur. Ray Kurzweil, another futurist, predicts that as early as the year 2020 our...
lifespan will lengthen by more than a year for every year that we live (Rogers, 2006). I immediately think of environmental health standards as they often are based upon how long people live. For example, when I was detailed to the U.S. Environmental Protection Agency's (U.S. EPA’s) Office of Drinking Water, I developed Drinking Water Health Advisories for munitions chemicals. The presumed population that the advisory values were designed to protect ranged from very young infants to the very old senior, and the lifetime exposure period was considered to be about 75 years. If people live longer, then that exposure period may need to be raised, and will affect current environmental health regulatory and advisory levels. Occupational exposure limits also may be affected. Currently, occupational exposure limits promulgated by the Occupational Safety and Health Administration (OSHA) generally are based on a 40-year work span. If lifespan increases, so may the number of work years, thus necessitating changes in some OSHA workplace regulations.

Dr. James Canton (2006), CEO and chairman of the Institute for Global Futures, identifies the critical role that energy will play in our lives in the 21st century, especially the role of fossil fuel alternatives. We already are seeing economic and political consequences of energy issues. Sustainability increasingly has become an area of environmental health interests that encompass pollution prevention, energy conservation, and community planning, including a focus on the built environment. Even now, some environmental health programs are working with planners to help design and build communities in ways that will limit or prevent pollution and promote healthy lifestyles. Dr. Canton also predicts that innovations in the areas of nano-, bio-, information, and neurotechnologies will affect our society economically, and that the “Next Workforce” will be more diverse culturally and more female.

Nanotechnology already is a major influence in our society and has significant environmental health concerns. Numerous products, such as clothes, cosmetics, paints, coatings, medical products, etc., employ nanosized materials for their innovative properties and uses. Unfortunately, they have been introduced into use without the knowledge of their environmental health and safety impact … this will be a subject of research in the years to come.

The U.S. population continues to increase in its diversity. According to the U.S. Census Bureau, by 2042 ethnic groups now considered to be minorities will become the majority groups (Bernstein & Edwards, 2008). I served on the Crumbine jury for about eight years and reviewed applications from many food safety programs throughout the nation. Many of these programs identified diversity as a challenge that they faced because food service employees were from a variety of different cultures, such that food safety literature and training aids needed to be translated into several languages. Also, food establishments that prepare and serve ethnic foods to the growing diverse populations are increasing. Food safety inspectors therefore need to be able to communicate with the owners and operators and staff who speak little to no English. Also, they also need to be aware of and understand cultural nuisances that may affect food safety. I expect this trend to carry into other areas of environmental health, which means that increasingly there will be a need for more diverse environmental health professionals.

Canton (2006) identifies several other features of our future that, while all may not have an obvious direct impact on environmental health, they do illustrate a world of high technology and innovation. Some of these include genomics, teleportation, multiple universes, increased globalization (in terms of trade and competition), consequences of climatic change, the freedom of the individual (e.g., compared to institutions, governments, and ideologies), and the destiny of America with respect to global democracy, innovation, human rights, and free markets.

In addition to changes in diversity, other population dynamics will affect both the science and practice of environmental health in this country. These include possible shifts in the gene pool, which may affect variability between individuals and susceptibilities and thresholds to effects from environmental health stressors. Increases in lifespan may affect the age distribution of our society with increases in the number of people in our older population. Such changes may affect how environmental health regulatory values are derived, depending upon whether the older population is more, or even less (due to advances in medical- and health-related technology) susceptible to environmental health stressors.

There are some references that can help identify some near-future environmental health issues and trends. U.S. EPA periodically publishes a Report on the Environment, and a Report on the Environment: Highlights of National Trends, the most recent of each were published in 2008. Both can be found on U.S. EPA’s Web site at http://www.epa.gov/roe. Examples of emerging issues addressed in these publications, and that I expect to carry into the future, include brominated flame retardants, pharmaceutical residues, personal care product residues, air pollutants related to the use of alternative fuels, new chemicals and new uses for existing chemicals, wastes that contain multiple materials that are challenging to separate (particularly for recycling and reuse), the potential release of engineered nanomaterials to the environment, and diseases and conditions for which there is emerging evidence that exposure to environmental contaminants may be a risk factor.

The other publication that I want to highlight is published periodically by the U.S. Department of Health and Human Services (DHHS). At the time that I am writing this column, the most recent version of the document is Healthy People 2010, but by the time this column is published, the next version, Healthy People 2020, should be published. DHHS describes this publication as one that provides science-based, 10-year national objectives for promoting health and preventing disease, and that leads the way to achieve increased quality and years of healthy life and the elimination of health disparities. There is a specific chapter titled Environmental Health; other related chapters are Educational and Community-Based Programs, Food Safety, Injury and Violence Prevention, and Occupational Safety and Health. There may be additional chapters and topics in the 2020 edition. These future possibilities for environmental health concerns and issues only demonstrate the dynamics of the science and the profession. Even given the current fiscal difficulties that are affecting environmental health today, I feel certain that the need for the profession will grow and its future is very promising. Our young and emerging environmental health professionals will find that their expertise to

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Staff Profile: Terry Osner

I’m reminded of Paul McCartney’s song, “The Long and Winding Road,” when someone asks about my background. I’ve lived in several cities and countries, including Hawaii and Japan, but now call Denver home. I earned my bachelor’s degree from the University of Northern Colorado in a little over three years, and obtained my master’s in education from the University of Hawaii. I am a consummate learner with enough graduate hours beyond my master’s for another degree or two. My experience includes teaching high school physics, being a vice principal, academic dean, and instructional designer. Each of these experiences had unique challenges and opportunities that only added to my knowledge and skills.

I felt privileged when asked to join NEHA as the senior advisor last fall, and it has been a steep learning curve ever since! As senior advisor, my work includes a variety of projects including board of director activities and meetings, policy issues, AEC & Exhibition planning, research, and data analysis. Outside of NEHA, I enjoy a number of activities, including photography, astronomy, reading, technology, cooking, and music. I also facilitate graduate-level courses for an online university, so there is no rest for the weary—but isn’t that what learning is all about?

References