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Preface: Biomedical Engineering, Physics, & Medicine

The articles selected for this issue cover interesting aspects of ethics applied to the fields of biomedical engineering, physics, and medicine. Although they do not cover the entire spectrum of issues, they do cover topics that are highly relevant to our times.

Dr. Doyle wrote an article entitled "Modern Medicine and the Postmodernist Challenge: Examining the Issues." The article discusses the impact of postmodern thinking on the practice of contemporary medicine. It examines "alternative medicine" and its origin in a postmodern world view. Dr. Doyle argues that postmodern thinking has led to a belief by some people that the current evidence-based, positivist approach to clinical management should be abandoned; the authors points out that such thinking is not without its attendant dangers.

Another article addresses the matter of teaching ethics to biomedical engineers and physicists. Adrian Chan, with co-authors Monique Frize, Colleen M. Ennett, Daphne Ong, and Amanda Cherpak, submitted the article titled " A Reflection on Biomedical Engineering Ethics Education from Multiple Perspectives." To date, discussions on this important topic arose mainly from the perspective of instructors. However, this paper integrates the perspectives of students in biomedical engineering and in medical physics as well as those of biomedical engineers in the workplace to those of instructors. The article suggests the topics that should be included in a biomedical engineering ethics course. Because all institutions require some form of ethical clearance prior to performing research or testing on humans or animals, it is critical that students become familiar with the process of applying for ethical clearance. Finally, students should learn how to assess the impact of technology or science on people and on society. This aspect is complementary to ethical decision-making and just as important.

Another article was submitted by James Giordano, with co-authors Elisabetta Lanzilao and Roland Benedikter: "Advancing Innovative Neurotechnologies: Grand Challenges, Big Science and the Necessity of Neuroethical Engagement." The authors address the legal and social aspects of neuroethics issues originated by globalization. They propose a methodology to address such issues, questions, and problems to generate prudent resolutions. The approach is not inherently proscriptive, but it is meant to foster scientific–social–legal preparedness. The authors conclude that neuroethics should include a cosmopolitan worldview, including the bio-psychosocial commonalities and differences reflected in various philosophies and perspectives around the globe.

Drs. Janice Graham and Robert Nuttall submitted an article titled "Faster Access to New Drugs: Fault Lines Between Health Canada's Regulatory Intent and Industry Innovation Practices." The article discusses the development of policies by national health agencies to modernize the regulation of new drugs. The authors examine data accumulated over a decade about drug approvals in the Canadian setting; the aim was to determine whether the policies promoted innovation while maintaining safety. The

article concludes that, despite an increase in supplementary product submissions, there was no sustained increase in *new* active pharmaceutical or biologic products; their results also point out that the new regulatory policies, intended to stimulate industry innovation of new and safer drugs, do not seem to work.

Dr. Vallero explores how environmental and biomedical ethics converge to address the contemporary issues in an article titled "Air Pollution from Environmental and Biomedical Ethics Perspectives." The article suggests that physicians, engineers, and research scientists address the problems posed by lead and mercury pollution, but each with a different focus. The physician gives priority to the patient's well-being. The engineer is concerned about the safety, health, and welfare of the public. The researcher must obtain the consent of subjects and conduct the project within all the constructs of ethical research. In the end, Dr. Vallero recommends that all aspects be interwoven to provide the most complete information on pollution and its impact on people.

The final paper by Drs. Tschaepe and Solymosi titled "Reconsidering Risk Groups: A Case of Ethical Reconstruction" discusses the initial and continual identification of risk groups as an ethical decision at all levels of discourse. In their paper, the authors offer a set of ethical tools with which to reconsider risk regarding the community as a whole and the specific behaviors that increase risk within the community. They use the case of AIDS as an example of the problems concerning normativity and risk groups, with the initial labeling of homosexual men as the risk group for the disease. The authors argue that this has been an ethically precarious approach with dangerous consequences.

It was a pleasure to be a guest editor for this issue; it exposed me to a variety of very interesting articles. I hope everyone enjoys them as much as I have.

Guest Editor:
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