Author Contributions: All authors confirmed they have contributed to the intellectual content of this paper and have met the following 3 requirements: (a) significant contributions to the conception and design, acquisition of data, or analysis and interpretation of data; (b) drafting or revising the article for intellectual content; and (c) final approval of the published article.

Authors’ Disclosures or Potential Conflicts of Interest: No authors declared any potential conflicts of interest.

References

News & Views

“Teaching for the Masses”—The e-Learning Revolution
Roy W.A. Peake1*

The traditional mechanism by which education is delivered has changed. In today’s competitive business environment, accessing a product via only a single route is no longer acceptable to the consumer, and education is no exception. Universities are increasingly embracing the concept of e-learning by hosting so-called massive open online courses (MOOCs). This report, based on an article by M. Mitchell Waldrop, briefly discusses the reasons why universities are now offering such courses and how laboratory medicine could also benefit from adopting a similar approach (1).

Drivers for Change

The origin of MOOCs may be traced back to Stanford University in the early 1990s. Then, the project was driven by a handful of individuals in research centers who were dedicated to developing open-source education initiatives. In the years since, the explosion of the Internet and technological advances in broadband, smartphones, and the growth of social media have made MOOC a reality. The financial crunch has also proved to be a major factor in driving this change. In the US, the higher-education system is facing a financial “time bomb,” with spiraling tuition fees contributing to unacceptable levels of student debt. Thus, universities are coming under increasing pressure to deliver courses to more students in a cost-effective manner.

MOOC: The Solution?

The obvious advantage of online courses is the sheer scope of their influence; a single lecture or course may be accessible by countless individuals anywhere at any one time. That serves not only to expand the reach of the campus but also to ease the workload on educators and maximize their output. Advances in software have allowed more-efficient data collection, enabling more-effective and more-elaborate means of providing feedback to students. This change not only enriches the students’ learning experience but also helps shape their studying behavior; however, the responsibility ultimately remains with the individual to complete the courses. Therefore, the success of online courses is highly dependent on the quality of the material and the ability to connect with the individual to enhance the learning experience. In 2010, Bill Gates said, “Five years from now on the Web for free you’ll be able to find the best lectures in the world. It will be better than any single university.” Perhaps in the future, the only activity remaining on campus will be the parties!

Closer to Home

In May 2011, the Journal launched the Clinical Chemistry Trainee Council (CCTC), a website that houses learning resources to aid clinical laboratorians in their professional development. At the time of writing, the CCTC has over 4000 registrants who log on from 134 countries. Unlike university-based e-learning tools, the CCTC is nonprofit
and relies solely on sponsorship, ensuring that access remains free for all registrants.

The economic crisis has increased the pressure on laboratory-training programs all over the world. In the UK, for example, the training of clinical scientists within the National Health Service has been reformed and condensed in an attempt to adopt a more streamlined and integrated approach. These changes have raised concerns, however, that programs may lack the necessary depth and that trainees will be under greater pressure to meet the knowledge requirements in the time allocated. In the US, there are 21 fellowship programs, which differ considerably in their structure and delivery of training. The program directors have a degree of autonomy to tailor their versions according to the needs of their trainees. Consequently, some programs favor a large didactic component, whereas others focus heavily on research and development. Regardless of location, it is imperative that all trainees have access to the learning tools that give them equal opportunities to develop so that we can adequately meet future demands. Our profession should give full support to initiatives such as the CCTC, because we need their help more than ever to help fill in the knowledge gaps.

**Author Contributions:** All authors confirmed they have contributed to the intellectual content of this paper and have met the following 3 requirements: (a) significant contributions to the conception and design, acquisition of data, or analysis and interpretation of data; (b) drafting or revising the article for intellectual content; and (c) final approval of the published article.

**Authors’ Disclosures or Potential Conflicts of Interest:** Upon manuscript submission, all authors completed the author disclosure form. Disclosures and/or potential conflicts of interest:

- **Employment or Leadership:** None declared.
- **Consultant or Advisory Role:** R.W.A. Peake, Shire Human Genetic Therapies.
- **Stock Ownership:** None declared.
- **Honoraria:** None declared.
- **Research Funding:** None declared.
- **Expert Testimony:** None declared.
- **Patents:** None declared.

**Reference**


**Clinical Chemistry 2014 Special Issue: Women’s Health**

*Clinical Chemistry* is pleased to announce the special issue on Women’s Health in January 2014 by Editors Drs. Ann M. Gronowski, JoAnn E. Manson, Elaine R. Mardis, Samia Mora, and Catherine Y. Spong titled “Advancing Women’s Health: The Impact of Biomarkers and Genomics.” The purpose of this issue is to highlight recent advances in biochemical and genetic markers used for the diagnosis, therapy, and preventive care of women during all stages of life. This issue includes diverse themes such as cancer, cardiovascular disease, osteoporosis, metabolic disease, normal and abnormal pregnancy, infertility, and infectious disease. Don’t miss this exciting issue!