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An effort to bridge the talent gap in biomedical science and
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<AT>Biomedical Big Data Training Collaborative (BBDTC): An effort to bridge the talent gap in biomedical science and research

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<ABS-HEAD>Highlights ► A framework for open knowledge dissemination in the biomedical community is presented ► The BBDTC enables course content personalization through the playlist feature ► It supports cross-platform operability to reduce effort duplication and encourage innovation ► The BBDTC exploits virtualization technologies to enable smooth user experience ► The framework tracks content consumption and usability through usage statistics and user scenarios

<ABS-HEAD>Abstract

<ABS-P>The BBDTC (<https://biobigdata.ucsd.edu>) is a community-oriented platform to encourage high-quality knowledge dissemination with the aim of growing a well-informed biomedical big data community through collaborative efforts on training and education. The BBDTC is an e-learning platform that empowers the biomedical community to develop, launch and share open training materials. It deploys hands-on software training toolboxes through virtualization technologies such as Amazon EC2 and Virtualbox. The BBDTC facilitates migration of courses across other course management platforms. The framework encourages knowledge sharing and content personalization through the playlist functionality that enables unique learning experiences and accelerates information dissemination to a wider community.

<KWD>Keywords: *e-learning; biomedical; collaborative; big data; education*

<H1>1 Introduction

Researchers increasingly rely on Big Data, Computational Data Science, and High Performance Computing (HPC) to solve problems within scientific domains and explore them in new ways [10]. However, it is often difficult to effectively apply these approaches in practice. They draw heavily from domains including computer science and applied mathematics, and most researchers are not substantially invested in them [2]. Moreover, petascale and exascale datasets require new data science techniques to process and manage. Many practitioners have not encountered these new techniques in their studies or work [10].

University training is largely offered through a multidisciplinary Computational Science discipline, or as specializations in existing domains such as computational

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