



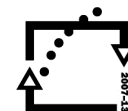
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## INVESTMENTS IN EDUCATION DEVELOPMENT

Interconnection of education between Molecular and Cell Biology  
and Ecology and Environmental Protection study programmes.

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Theme: **Molecular Techniques for Disease Detection and Diagnosis**

### Abstract:

Effective control or management, and disease-related regulations require the development of accurate and reliable diagnostic techniques. All diagnostic techniques or tools have limitations that often involve issues of concern such as; specificity, sensitivity, the time required to complete the test, cost, complexity, and the need for specific expertise. To help improve reliability a combination of diagnostic techniques may be used for more accurate diagnosis. Attempts are made constantly to improve existing techniques or to develop new techniques that address and solve some of the existing limitations. Development of polymerase chain reaction (PCR) by Kary Mullis transformed the world of molecular diagnosis, for which he was awarded the Nobel Prize in 1993. Molecular detection and identification techniques such as Barcoding, Loop-mediated isothermal amplification (LAMP), Luminex(R) xMAPTM Bead-based suspension array, and Next Generation Sequence (NGS) are new technologies that have the potential to overcome some of the limitations of existing techniques. They too have their advantages and disadvantages.