

TITLE: Adopt a Lab: Real Lab Day – A new approach to learn microbiology with research.

AUTHORS: PIANTOLA, M.A.F.; MORENO, A.C.R.; MORAES, C.T.P.; MALDONADO, G.P.; GOMEZ, J.G.C.; TIMENETSKY, J.; SILVA, L.F.; RIBEIRO, M.N.D.; BALDINI, R.L.; ELIAS, W.P.; ARAUJO, W.L.; FERREIRA, R.C.C.

INSTITUTION: INSTITUTO DE CIÊNCIAS BIOMÉDICAS DA UNIVERSIDADE DE SÃO PAULO. SÃO PAULO, SP (AV. PROF. LINEU PRESTES, 1374, CIDADE UNIVERSITÁRIA, CEP 05508-000, SÃO PAULO-SP, BRAZIL)

ABSTRACT:

The “Adopt a Lab: Real Lab Day” is a continuum of a biggest Project named “Adopt a Bacteria”. To this approach we develop a new methodology to students learning microbiology seeing “how to do microbiology in real life” in collaboration with research laboratories into and out of university. We apply that in the Bacteriology course at ICB/USP. The methodology consists in divided students in groups, and during two days, in the same hour that students should be in a classroom, they go to research laboratories to hands-on learning doing bacteriology experiments. The third lab day is reserved to students discuss the results of experiments and make a poster about the experiment that they conducted. The posters are present to other students with a strategy named integrated panel. With this strategy we get that all students be access to explanation of all experiments, and all students present the experiment. At the end of presentations, students fill an anonymous and voluntary survey, to evaluate the approach, researchers that received students in their labs, are invited to fill the survey too; 105 students and 26 researches filled the survey. In students survey we question they about their evaluation of the “Adopt a Lab – Real Lab Day” as a toll to interact undergraduate learning and applied microbiology research, 95% (100) students evaluate as good or great and 5% (05) students evaluate as regular; when asked if they apply in the laboratory experiment the knowledge that they learning in traditional classes, 94% (99) students answer “YES” and 6% (06) answer “NO”; when asked about the “Adopt a Lab – Real Lab Day” collaborate to understanding the bacteriology topics taught in the classroom, 90% (95) students answered “YES” and 10% (10) answered “NO”. We ask them about their levels of interest in microbiology applied research before and after the “Adopt a Lab – Real Lab Day”, 44% (46) students increase the interest, 51% (54) maintain the same interest and 5% (05) decrease the interest in microbiology applied research. In researchers survey the main question was how they evaluate the “Adopt a Lab – Real Lab Day” as an interaction toll between undergraduate teaching and applied research, and all researchers evaluate as great (22) or good (04). We conclude that this interaction between traditional classes and “real” applied research, added to an active results presentation, motivate and empowered students, making easier the develop of a meaningful learning environment.

Keywords: Microbiology Education, Active Learning, Teach with Research.