

Introducing medical students to scientific research: an early electron-microscopy laboratory attendance experience

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In the light of importance that "evidence-based medicine" has assumed in recent years (Snelgrove et al. 2009), we offer to the students of the first-year medical-degree the chance of an early exposure to the work in the ultrastructural research laboratory "Pietro M. Motta". On an elective basis, students attended the laboratory in small groups. They were guided and supported by a qualified researcher, a post-graduate student, a graduate student and a technical-staff unit. During the week of attendance students performed several activities: at first they have visited the laboratory where the technicalities of the equipment were illustrated, than they have taken part to a lecture on the methods used to prepare the biological samples for Scanning and Transmission Electron Microscopy. In the following days preparation of samples for Scanning and Transmission Electron Microscopy was carried on and a guided discussion on scientific articles concerning the samples used in the experiments was conducted (Familiari et al. 2006). Later, samples were observed using a light microscope and both transmission and scanning electron microscope. At the end of the week students had taken hands-on in various stages of preparation, observation and analysis of the samples. The discussion with the researcher and the post-graduate doctors/students provided the attendant students with key concepts regarding scientific work that are the basis of theory and practice of biomedical research projects, not only of ultrastructural type. The students' early exposure to the work and methodology characteristic of ultrastructural research may prove useful, not only when promoting in-depth understanding of microscopic anatomy, but also as a motivational base upon which to instil a correct approach to scientific research in future doctors.

References

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Keywords

Electron microscopy, medical education, learning by doing, active learning.