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P311-003
Historical milestones and discoveries which shaped the toxicology sciences

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Knowledge of the toxic and healing properties of plants, animals, and minerals has shaped civilization for millennia. The foundations of modern toxicology are built upon the significant milestones and discoveries of serendipity and crude experimentation. Throughout the ages, toxicological science has provided information that has shaped and guided society. This poster presentation examines the development of the discipline of toxicology and its influence on civilization by highlighting significant milestones and discoveries related to toxicology. The examples shed light on the beginnings of toxicology, as well as examine lessons learned and re-learned. This project is also an effort to examine how toxicology and the toxicologist have interacted with other scientific and cultural disciplines, including religion, politics, and the government. Toxicology has evolved to a true scientific discipline with its own dedicated scientists, educational institutes, sub-disciplines, professional societies, and journals. It now stands as its own entity while traversing such fields as chemistry, physiology, and pharmacology. We invite you to join us on a path of discovery and to offer your suggestions as to what are the most significant milestones and discoveries in toxicology. An interactive or clickable version of this poster is available at www.toxipedia.org. There is an expanded selection of historical event related to toxicology as well as additional information in the history sections of Toxipedia (http://www.toxipedia.org/display/toxipedia/History+of+Toxicology).

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P311-004
Toxipedia - toxicological information in the context of history, society, and culture

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Creating responsible public health policies requires not only the best scientific information but also placing in the context of history, society, and culture. Toxicological research provides a seemingly overwhelming amount of information, but the discipline has struggled to harness information technology to convey its significance to the public. New web based tools, sometimes called Web 2.0, are making it easier to share and access information and ultimately to place it in a current and historical context. Recent advances in this area include Toxipedia (www.toxipedia.org), a wiki-site concept that is designed to encourage toxicologists and public health professionals to share their knowledge. The goal of Toxipedia is to be a definitive, yet accessible, information resource on the hazards and history of chemical and physical agents, regulatory requirements, and risk management. Toxipedia has steadily built content, partnerships, and even incorporated existing projects into its purview. For example, the global toxicological resource center the World Library of Toxicology (www.wltox.org), originally developed by the National Libraries of Medicine is now being managed by Toxipedia. The WLT is designed to encourage toxicologist from around the world to share country specific information. Toxipedia, in conjunction with other partners, recently launched its new integrated pest management resource center IPMopedia (www.ipmopedia.org) to encourage sustainable gardening practices. A teaching resources includes material for a basic one toxicology course as well as other teaching resources. An ethical considerations and emerging issues section address a range of issues relevant to the toxicological sciences and public health. This session will examine wiki-based technology, Toxipedia, and how the toxicology community can use these sites to share knowledge and make better use of information technology to promote science to shape a healthier and more sustainable world.

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P311-005
Metals, environment and life - interference of vanadium in living systems and their contextualization in teaching experimental sciences

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The ammonium metavanadate (V+5), widely used in chemical industry is a toxic compound which is involved in several cases of enzyme inhibition. The alkaline phosphatase (ALP) a zinc-glycoenzyme implicated in cell growth and apoptosis can be affected by the presence of metals like vanadium. The main objective of this study was to interest young students to the toxicity of metals, exploring the effects of vanadium on the ALP activity, using Saccharomyces cerevisiae as biological model. This activity was developed by a pilot group of students from Dom Manuel Martins high school of Setúbal, Portugal, which follow the yeast growth at 640 nm and obtained cell extracts from S. cerevisiae growing at 28 °C in YPD medium (glucose 2% (w / v)) in absence and presence of 25 or 75 mM NH4VO3, for the quantification of proteins at 720 nm by Lowry's method and ALP activity determination at 405 nm, using pNPP as substrate. The young people observed a growth inhibition of yeast cells exposed to vanadium as well as a decrease of total proteins and ALP activity level, facts which put in evidence a sharp toxicological effect of vanadium in eukaryotic cell. The average score obtained before and after the experimental activity (41%) and (63%), respectively, using the same set of questions-problem, revealed an overall positive performance of skills developed by students, in the scope of metals toxicological effects in eukaryote cells. In more detail, it was also observed a positive and significant effect in each experimental phase ($p < 0.05$), before and after the development of the action. The assessment of skills developed by students showed an improvement of their compliance level, thereby acquiring a significant learning. The results for the opinion survey showed that most respondents classified the activity and its difficulty degree as good.

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