L'**Equipe Biomarqueurs et Bioindicateurs Environnementaux**

de l'Institut Méditerranéen d'Écologie et de Paléoécologie

a le plaisir de vous inviter

le **lundi 31 mars 2008, à 10 heures** dans l'amphi Marion, bât 5 (campus St Charles)

aux **CONFERENCES :**

"Plant Selenium Metabolism: Genetic and Genomic Studies, Phytoremediation Applications and Ecological Implications"

Elizabeth A.H. Pilon-Smits, Biology Department, Colorado State University, Fort Collins, CO 80523, USA. epsmits@lamar.colostate.edu

The insight into the ecology of Se hyperaccumulation provided by this project will be of significance since little is known about ecological implications of plant elemental hyperaccumulation of any element, not just Se. The findings from this project may have broad implications, since the effects of hyperaccumulation of Se on herbivores and other ecological partners are probably similar for other toxic metals or metalloids. Understanding trophic movements of hyperaccumulated elements will be critical to the development and practice of phytoremediation and of cultivating fortified foods.

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"Copper Delivery for Photosynthesis: Transporters, Metallo-Chaperones and Regulation by Small RNA"

Marinus Pilon, Associate Professor, Biology Department Colorado State University, Fort Collins, CO 80523, USA

About a third of all proteins require a metal ion cofactor for activity. The growth environment often limits the availability of metal cofactors. Under limitation cells must prioritize delivery to specific targets and coordinate delivery with apo-protein expression as well as varying metabolic demand. Targets for copper (Cu) delivery in plant chloroplasts are plastocyanin in the thylakoids and Cu/Zn-superoxide dismutase (Cu/ZnSOD) in the stroma. PAA1 and PAA2 encode Cu-transporting P-type ATPases in the chloroplast. Characterization of paa1 and paa2 mutants showed that the two transporters have distinct functions. Both transporters are required for Cu delivery to plastocyanin and efficient photosynthetic electron transport. We found a signaling pathway, which senses the Cu that is available to the chloroplast and which mediates the microRNA-mediated down-regulation of non-essential nuclear-encoded Cu-proteins under Cu limitation.