Graduate Institute of Sustainability Management and Environmental Education

Impact of Global Change on Wetlands, Environmental Sustainability and Stakeholders

My research interests are varied, spanning the academic and applied sectors, but the environment is the element that unites these interests.. My academic research examines how plants have responded to global change in space and time. The results of these analyses may provide us with a better understanding to the current global changes. **In industry** we were responsible for cleaning legacy contamination associated with energy production that was considered to be a normal part of business. The use of approaches to clean/remove contaminants such as phytoremediation are innovative and contribute to the sustainability of our natural resources. In many cases wetlands are created to remediate the contaminants but to return water back to the ground. This work requires a deep understanding of stakeholder needs and open communications between groups. Recently, the opportunity to work with Taiwan's indigenous people such as the Smangus tribe, are providing an opportunity to work closely with indigenous scientists and their knowledge and environmental management base.

Techniques: Field studies, light and SEM microcopy, PCR, palynology, morphological analyses, multivariate statistics (PCA, DCA), soil, water, sediment and air sampling/analyses, wetland design and construction, brownfield redevelopment, remediation, sustainability, stakeholder engagement, communication.

Ben LePage, Distinguished Visiting Chair
Professor National Taiwan Normal University, No. 88, Section 4, Ting-Chou Road, Taipei 11677, Taiwan

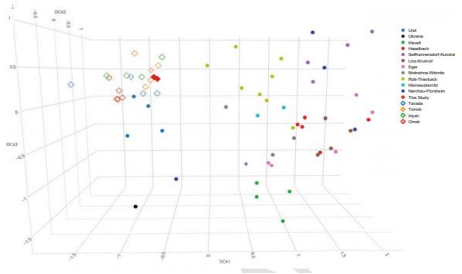
Background:

BSc. Hon, Biology, Ph.D. Geology, U Sask., Saskatoon Canada

- Remediation Program Manager, PG&E Corp, San Ramon, CA, USA
- Senior Remediation and Env. Project Mgr., PECO Energy Company, Philadelphia, PA, USA
- Senior Environmental Scientist, URS Corp. PA, USA

***Teaching Domain: Ecology, geology*; philosophy of science; stakeholder engagement and communication.**

Academic Research and Industry Projects



Using multivariate statistics we examined ancient floras from Europe and western Siberia to assess how plants moved in space and time in response to global climate change about 25 million years ago (Dolezych et al., 2021).

Stakeholder engagement and communications are crucial elements of remediation projects. In San Francisco we decommissioned and remediated a former power plant and converted the cleaned land into a nature trail/park that was made available and memorialized the local community

In Eureka, CA, the former power plant, which included the nation's first commercially licensed nuclear unit, was decommissioned and remediated. Much of the power plant's footprint was returned to coastal wetlands.

Publications and Expertise https://www.linkedin.com/in/ben-lepage-0815a215)

Fang-I Kuo et al., 2021. Proactive environmental strategies in the hotel industry: eco-innovation, green competitive advantage, and green core competence. *Journal of Sustainable Tourism.*DOI:10.1080/09669582.2021.1931254

Song, K.-S., et al., 2021. Managing water and wetlands based on Taiwan's Tayal indigenous tribal knowledge system founded on their philosophy of Utux and Gaga. *Wetlands*.

Wang, H.-W., et al.,2018. Science as a bridge in communicating needs and implementing changes towards wetland conservation in Taiwan. *Wetlands* **38**:1223-1232.Tang, C.Q., et al., Nature *Communications* ***9****: Article number:* **4488**.

LePage, B.A. 2013. Wetlands: A Multidisciplinary Perspective. Pp. 3-28. In *LePage, B.A. (ed.).* Wetlands – Integrating Multidisciplinary Concepts. *Wunan, Taipei*