Meet Justin Richardson

Justin Richardson joined the CZO National Office as a Postdoctoral fellow in September 2015. Justin got his B.S., Environmental Science, U. California, Riverside in 2010 and his PhD at Dartmouth College in 2015. His dissertation investigated anthropogenic changes to biogeochemistry of trace metals in forest soils. His interest in the movement of elements from non-living materials into and out of organisms requires knowledge of many disciplines, both a backbone to biogeochemistry and CZ science. Currently at Cornell U., Justin focuses on two tasks: 1) to be a broadcaster of the research conducted by the CZO network to ensure it is reachable and understandable to non-academics and scientists alike and 2) cross-CZO research to understand major and trace metal behavior during soil development. Welcome Justin!
CZO Spotlight: The Coming Blue Revolution

IML Co-Director Praveen Kumar’s paper “Hydrocomplexity: Addressing water security and emergent environmental risks,” published in Water Resources Research (July 2015), was featured in “The Coming Blue Revolution” by Kate Wheeling, an article in the February 2016 issue of EOS. Wheeling describes Kumar’s concept of hydrocomplexity as an integrated framework of the water cycle and humanity’s place in it. It is a first step toward managing inevitable future water security challenges from climate change, intensive land management, and limited resources. Using cross-disciplinary approaches, the framework aims to identify the best practices for addressing emergent threats against water security and reveal innovative, holistic solutions. Kumar argues the complexity of interconnected water, carbon, nutrients and energy cycles requires a comprehensive understanding of processes involved to be able to model how perturbations will propagate throughout the cycles. He also suggests that model integration of the large amount of diverse observational records will reveal hydrologic patterns.

International Critical Zone Workshop

With support from the National Office’s Science Across Virtual Institutes (SAVI) project, an International Critical Zone Workshop was held on December 13, 2015, prior to the AGU Fall Meeting, San Francisco, CA. Over 20 countries were represented by 47 scientists who met to discuss cross-site CZ questions potentially applicable at an international scale. An introduction by Tim White (Penn State) was followed by presentations to introduce established CZO Networks: Steve Banwart (U. Sheffield, SoilTrEC), Harry Vereecken (Jülich Research Centre, TERENO), Guillaume Nord (U. Joseph Fourier, RBV/Critex), Henry Lin (Penn State, China CZOs) and Suzanne Anderson (CU Boulder, U.S. CZOs). These were followed by 20 two-minute lightning talks during which speakers described the site characteristics and research focus of individual CZOs. Jon Chorover (U. Arizona) spoke of the CZ common science themes, questions and measurements that have emerged in past CZO workshops and proposals. A room discussion lead 3 working groups to break out based on themes of carbon fluxes, concentration/discharge relationships, and depth of the Critical Zone. Results from the working groups will be used to drive international collaborative research through combined resources, data, infrastructure, and the development of an expanded environmental gradient of CZOs.

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