



CRMSE Colloquium Announcement

Igal Galili

Hebrew University of Jerusalem

Cultural Content Knowledge and Science Education

Friday, February 10, 2012
1:00 – 2:00 pm
6475 Alvarado Road, Suite 128

RSVP: <https://crmse.wufoo.com/forms/crmse-colloquia/> or
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Abstract: Subject matter in science education usually follows the tradition of considering strict disciplinary content. Also, within physics curricula, different disciplines are considered as harmonious components – complementary aspects of one true picture of the world. This view is deconstructed in our effort to see the subject matter of science as a culture, in the specific sense that emphasizes the discursive nature of science. A new structure of science curriculum of introductory courses is suggested. In the "big picture", a scientific discipline is comprised of fundamental theories and each possesses triadic structure of content: nuclear-body-periphery. The nucleus includes the fundamental principles, the paradigm. The body comprises the application of the nucleus, and the periphery includes elements challenging the nucleus. It is the periphery that upgrades discipline to discipline-culture and disciplinary knowledge – to cultural content knowledge (CCK). This structure uses elements of history and philosophy of science, and suggests changes in the training of prospective teachers. The CCK structure visualizes the scientific revolutions and individual conceptual change. Given the subject matter arranged culturally, a new typology of students is introduced, characterizing students according to their preference for either the nucleus, body or periphery, and replaces the dichotomy of C. P. Snow. I will illustrate the novel teaching materials by the units developed within the European project HIPST (2010). All together, it is argued that CCK is appropriate for the modern culture and society.

