



Pacific Institute *for the*  
Mathematical Sciences

# Indigenous Knowledge in STEM Education

Friday, March 8 2013

4:30 pm

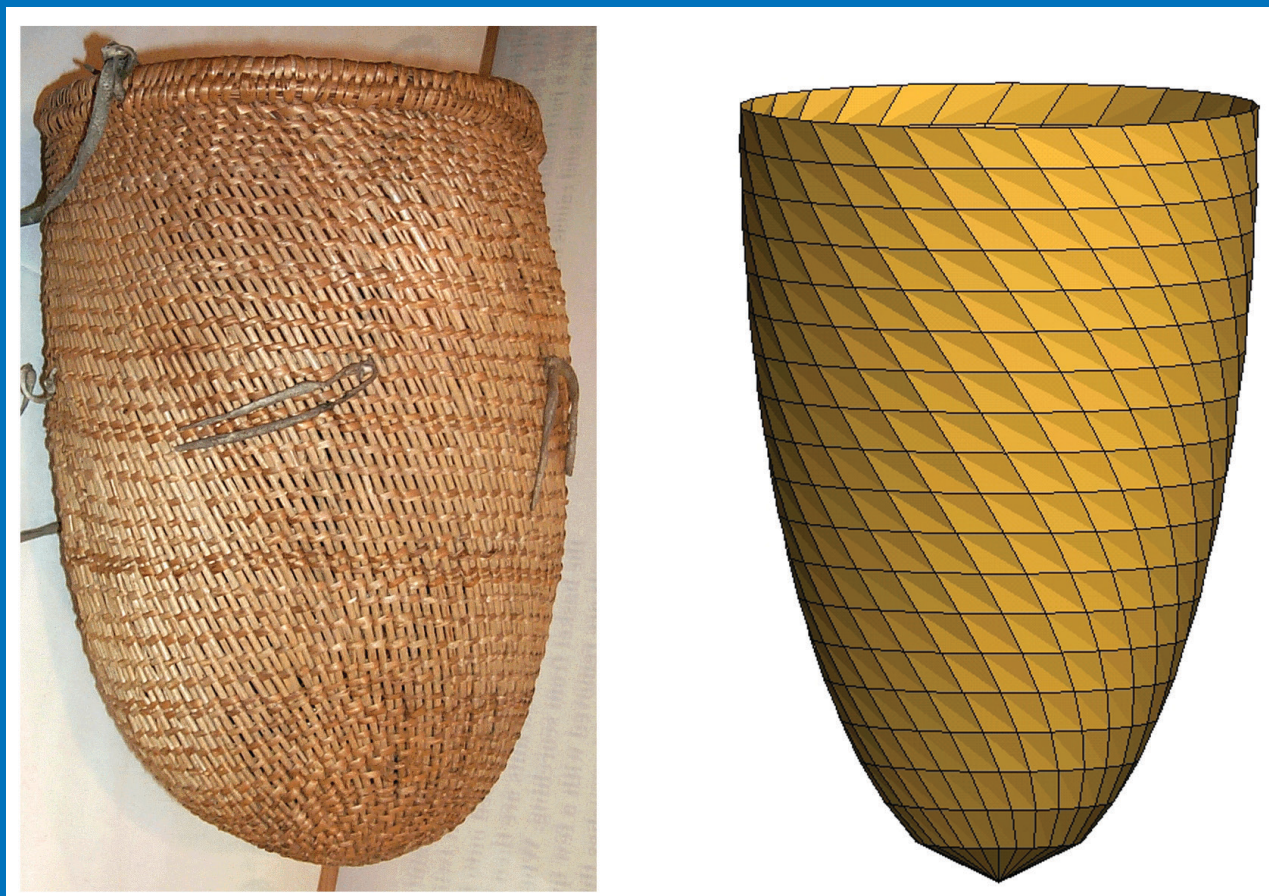
University of British Columbia

ESB 2012 (2207 Main Mall)

4:00pm pre-lecture refreshments

**SPEAKER: Ron Eglash** (Department of Science and Technology Studies, Rensselaer Polytechnic Institute)

Computing with Culture From fractals in African architecture to algorithms in First Nations beadwork, simulations of indigenous designs reveal complex concepts and practices that can be mapped onto analogous principles in math, science and computing. Applications for this work include outreach to K-12 students as well as contributions to sustainable development.



*DR RON EGLASH is an American cyberneticist, university professor, and author widely known for his work in the field of ethnomathematics, which aims to study the diverse relationships between math and culture. His research includes the use of fractal patterns in African architecture, art, and religion, and the relationships between indigenous cultures and modern technology, such as that between Native American cultural and spiritual practices and cybernetics.*

*Ron Eglash has also conducted studies in teaching children math and computing through simulations of indigenous and vernacular cultural practices. He explains that the simulations do not impose math externally, but rather translate the mathematical ideas already present in the cultural practices to their equivalent form in school-taught math.*

*Examples include transformational geometry in cornrow braiding, spiral arcs in graffiti, least common multiples in percussion rhythms, and analytic geometry in Native American beadwork. His approach is one of many attempts to draw the inspiration to learn out of students' own cultural backgrounds*

*To ensure sufficient refreshments, please RSVP by March 7 to [melania@pims.math.ca](mailto:melania@pims.math.ca).*

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