

**NSE's future is ultimately rooted in education: Towards the modern nano-education construct**

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Virginia Tech's NSF nano-based IGERT grant spanned seven years and 30 PhD dissertations. This grant was the primary catalyst for three major nano-education programs that will ultimately have more long-term and wide-ranging impacts.

1) Nano2Earth is our secondary school science curriculum for chemistry, biology, geoscience, and environmental science classes that brings nanoscale science and technology to life. It was conceived, written, and classroom-tested by five high school science teachers, four VT professors, and several graduate students over five years. Nano2Earth is now sold and distributed worldwide by the National Science Teachers Association.

2) We have developed a nanoscience undergraduate major that is currently pending approval from the Commonwealth of Virginia. This four-year major includes eight new courses in nanoscience extending from the freshman through senior years, consisting of 43 credits out of 120 needed for a Bachelor of Science degree.

3) SuN IGEP (Sustainable Nanotechnology, Interdisciplinary Graduate Education Program) is funded by VT's Graduate School, and provides a home (in terms of courses, labs, and mentorship) for graduate students from across campus who are working on PhD dissertations in some aspect of the incorporation of sustainable design concepts in the nanotechnology field.

Hochella is University Distinguished Professor at Virginia Tech. He has been a Fulbright and Humboldt Scholar, President of the Geochemical Society and the Mineralogical Society of America, and Virginia Scientist of the Year. He has been awarded the Dana Medal, the Brindley Lecture Award, and is a Fellow of six international scientific societies.