## **Matt Dawber**

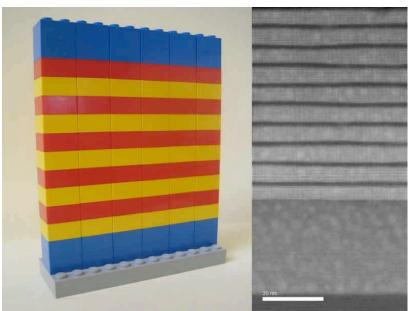
## Physics and Astronomy Stony Brook University



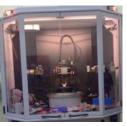
## DMR1055413 CAREER: Engineered Ferroic Superlattices for Science, Technology and Education





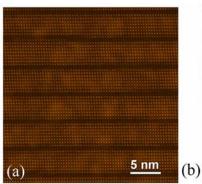




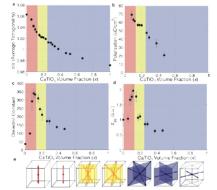


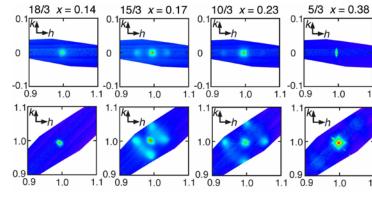


We use off-axis RF Magnetron sputtering to make very finely layered ferroelectric superlattices, which we characterize by XRD, TEM, AFM, electrical measurements, etc. We are also heavy users of the NSLS and the CFN at BNL.



Ideal symmetry breaking interface	Sr excess symmetry conserving interface	Ru excess symmetry conserving interface
0 0	0 . 0	0 . 0
0 0 0	0 0 0	000
0 0 0	0.0	0 . 0
0 0 0	0 0 0	0 0 0
0 • 0	0 . 0	0 . 0
0 0 0	0 0 0	0 0 0
0 . 0	0 . 0	0.0
000	0 0 0	. 0 .
0 . 0	0.0	0 . 0





Recent Research Highlights: PbTiO<sub>3</sub>/SrRuO<sub>3</sub> superlattices with compositionally broken inversion symmetry PbTiO<sub>3</sub>/CaTiO<sub>3</sub> superlattices with engineered polarization rotation