ORAL PRESENTATION

# THE BUCKLING OF DIATOM VALVES

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The valves of many centric and pennate diatoms have undulations that may be attributable to buckling of the silicalemma and/or its contents during valve morphogenesis (Gordon & Drum, 1994). This is supported by the notion that valve morphogenesis occurs in two stages: rapid two dimensional silica growth taking minutes, followed by 3D valve thickening taking hours (Gordon & Drum, 1994; Hildebrand et al., 2006; Hildebrand, 2008; Gordon et al., 2009). The thin 2D nascent valve may be very flexible and thus readily susceptible to buckling forces. We quantitate buckling where possible in terms of sine waves or Bessell functions, and show the variety of buckling patterns exhibited via SEM and light microscopy, with quantitative comparisons of wavelengths and amplitudes measured by both methods.

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