



nature publishing group



► **COVER:** 'Hedgehog road block' by Lara Crow, inspired by the Review on p493, which discusses the latest results with Hedgehog pathway inhibitors.



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The use of acronyms is common in many scientific disciplines, and we are all familiar with those used most often in our chosen area of research. For example, on page 481 of this month's issue, Boris G. Wilson and Charles W. M. Roberts discuss the function of the SWI/SNF family of chromatin remodellers in cancer, and on page 493 Jessica M. Y. Ng and Tom Curran present the latest data on Smoothed (SMO) inhibitors that target the Hedgehog (HH) pathway. However, as cancer research advances into new territory — that of the physical sciences — there are many new terms to which we need to become accustomed.

On page 523, John J. Tyson and colleagues present the first steps towards building complex mathematical models of breast cancer. Their initial, rudimentary model focuses on signalling pathways in this disease, and they have broken these down into modules. For each of these they have produced a wiring diagram, and from this they have devised a set of equations to represent the signalling pathway. They hope that these mathematical formulas will help us to better understand the complexity of the crosstalk between signalling pathways in breast cancer. Similarly, on page 512, Peter C. Searson and colleagues have looked at the process of metastasis from a physical perspective. Understanding the physical forces that cells encounter once they move into the extracellular matrix should provide new targets to prevent invasive growth. They also present a series of equations that should help us to understand how circulating tumour cells adhere to capillary endothelial cells and extravasate.

Getting to grips with a mathematical and physical view of cancer is not something to be avoided: after all, equations are just shorthand — much like acronyms.

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