Computer simulation reveals how cancer cells evolve

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Could Charles Darwin help us to fight cancer? The answer is an emphatic yes according to an Anglo-American team that unveiled eerily <u>beautiful videos</u> that model the evolution of a tumour in three dimensions.

In one set of <u>computer simulations</u>, a rogue cell blooms into a kaleidoscope of cell types, then melts away when treated with a cancer drug, only to blossom once again with renewed vigour into deadly and malignant masses of billions of cells.

Recent years have seen the development of drugs that target cancer cells with specific mutations. These drugs shrink tumours during the first months of treatment but the cancer cells often become resistant as new mutations help to outwit the drugs, and the disease returns.

Now the collaboration between Harvard, Edinburgh, and Johns Hopkins Universities has come up with a mathematical portrait of the evolution of solid tumours of the kind found in the breast, ovary or colon.

The new work, published in the journal <u>Nature</u>, is a joint project by a team that includes Bartek Waclaw a physicist and computer wizard at Edinburgh, the distinguished cancer researcher Bert Vogelstein of Johns Hopkins, and Martin Nowak, Director of Harvard's Program for Evolutionary Dynamics, who has spent decades trying to put biology on a mathematical basis, along with his colleague in Harvard University, Ivana Bozic.

Read full, original post: The Evolution of New Cancer Treatments