



# Data visualization and user interfaces

10:45 – 11:10 User Interface Design (*Scooter Morris*)

11:15 – 11:40 Data Visualization (*Nils Gehlenborg*)

11:45 – 12:10 Visual Analytics (*Carsten Görg*)

12:15 – 12:40 Discussion (*Seán O'Donoghue*)

Additional organizers: *Lawrence Hunter & James Procter*



# Data visualization and user interfaces

*12:15 – 12:40 Discussion (Seán O'Donoghue)*





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Thymocyte apoptosis induced by p53-dependent and independent pathways

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## letters to nature

*Nature* 362, 849 - 852 (29 April 1993); doi:10.1038/362849a0

### Thymocyte apoptosis induced by p53-dependent and independent pathways

A. R. CLARKE, C. A. PURDIE\*, D. J. HARRISON, R. G. MORRIS, C. C. BIRD, M. L. HOOPER & A. H. WYLLIE

Cancer Research Campaign Laboratories, Department of Pathology, University Medical School, Teviot Place, Edinburgh EH8 9AG, UK  
\*Present address: Department of Pathology, University of Glasgow, Western Infirmary, Glasgow G11 6NT, UK.

**DEATH** by apoptosis is characteristic of cells undergoing deletion during embryonic development, T- and B-cell maturation and endocrine-induced atrophy<sup>1</sup>. Apoptosis can be initiated by various agents<sup>1-5</sup> and may be a result of expression of the oncosuppressor gene p53 (refs 6-8). Here we study the dependence of apoptosis on p53 expression in cells from the thymus cortex. Short-term thymocyte cultures were prepared from mice constitutively heterozygous or homozygous for a deletion in the *p53* gene introduced into the germ line after gene targeting. Wild-type thymocytes readily undergo apoptosis after treatment with ionizing radiation, the glucocorticoid methylprednisolone, or etoposide (an inhibitor of topoisomerase II), or after Ca<sup>2+</sup>-dependent activation by phorbol ester and a calcium ionophore. In contrast, homozygous null *p53* thymocytes are resistant to induction of apoptosis by radiation or etoposide, but retain normal sensitivity to glucocorticoid and calcium. The time-dependent apoptosis that occurs in untreated cultures is unaffected by *p53* status. Cells heterozygous for *p53* deletion are partially resistant to radiation and etoposide. Our results show that *p53* exerts a significant and dose-dependent effect in the initiation of apoptosis, but only when it is induced by agents that cause DNA-strand breakage.

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Species

Protein

Synonyms

Domains

Sequence

Reflect - p53

Protein Wikipedia Add About Edit

TP53 (ENSP00000269305) ▼ H. sapiens

p53; p53 tumor suppressor; tumor suppressor p53; Trp53; Mutant p53; P04637, Sequence, Domains, Structure, Locus, Literature

MBEPPQSDPSVEPPLSQETFSDLWKLLPENNVLSPLPSQAMDDLML

Structure Interaction partners Subcellular location Organism

Acts as a tumor suppressor in many tumor types; induces growth arrest or apoptosis depending on the physiological circumstances and

Chemical

Reflect - etoposide

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CID000003310 BioActivity Structure Search

etoposide; VP-16; VP16; VP-16-213; VP 16-213; VP 16; Vepesid; vepes

▼ 2D

A semisynthetic derivative of podophyllotoxin, a substance extracted from the mandrake root Podophyllum peltatum. Possessing potent

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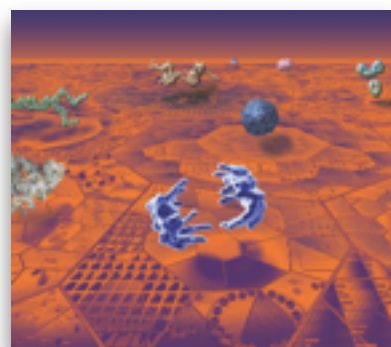
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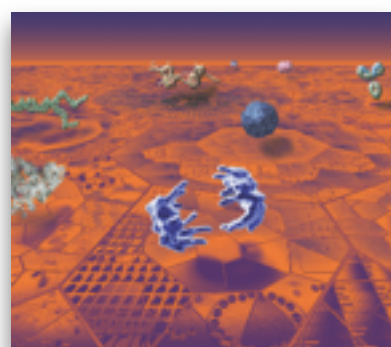
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NATURE METHODS | THIS MONTH

## Points of view: Color coding

Bang Wong

Nature Methods 7, 573 (2010) | doi:10.1038/nmeth0810-573

Color can add dimensionality and richness to scientific communications. In figures, color is typically used to differentiate information into classes. The challenge is picking colors that are discriminable. A systematic approach to choosing colors can help us find a lineup effective for color coding.

Occasionally, authors use a sequence of colors, such as the 'rainbow' color scheme, to represent a range of values. Color, however, is not ideal for encoding quantitative data because of the inherent ambiguity in how the different colors should be ordered. For instance, does yellow represent a smaller value than blue? One could pattern the sequence after the ordering of visible light by wavelength (remembered by the mnemonic ROYGBIV), but use of this color spectrum is inherently problematic. The transitions from red to yellow to green and so on are uneven, breaking the correspondence between color and numerical value. Visually, certain colors in the rainbow spectrum seem to run on, whereas others are short lived. Even when we limit the spectrum to just a few colors, the incremental change in mapped value still might not translate to the magnitude of change we see.

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- Bang Wong's series in Nature Methods

- Scooter: 'appropriate training time'
- Scooter: you're not user, but team is?
- Carsten: untangle hairball > Beaton