

情報可視化

LX1: 情報可視化とは

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What's **Vis**, and why do it?

Definition

Computer-based visualization systems provide visual representations of datasets designed to help people carry out tasks more effectively.

Visualization is suitable when there is a need to augment human capabilities rather than replace people with computational decision-making methods. The design space of possible vis idioms is huge, and includes the considerations of both how to create and how to interact with visual representations. Vis design is full of trade-offs, and most possibilities in the design space are ineffective for a particular task, so validating the effectiveness of a design is both necessary and difficult. Vis designers must take into account three very different kinds of resource limitations: those of computers, of humans, and of displays. Vis usage can be analyzed in terms of why the user needs it, what data is shown, and how the idiom is designed.

Why have a human in the decision-making loop?

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Variants

Mutation Type
Reference A.A.s
Variant A.A.s

Transcript

trans-anon

Protein

A.A. Chain
Signals
Domains
Regions
Topo. Domains
Transmem.
Active Sites
NP Binding
Metal Bind.
Bindings
Mod. Residue
Carbohyd.
Disuf.

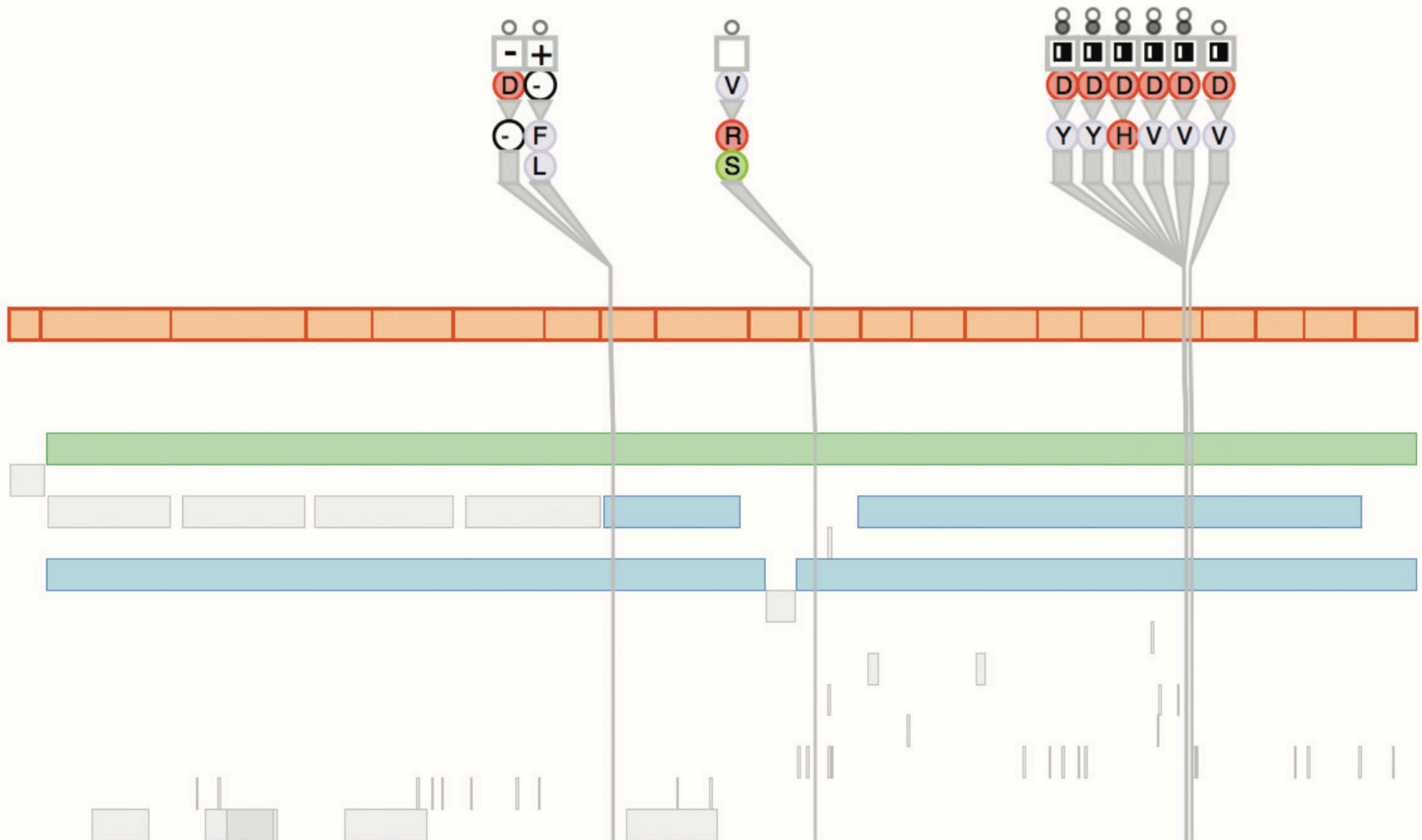
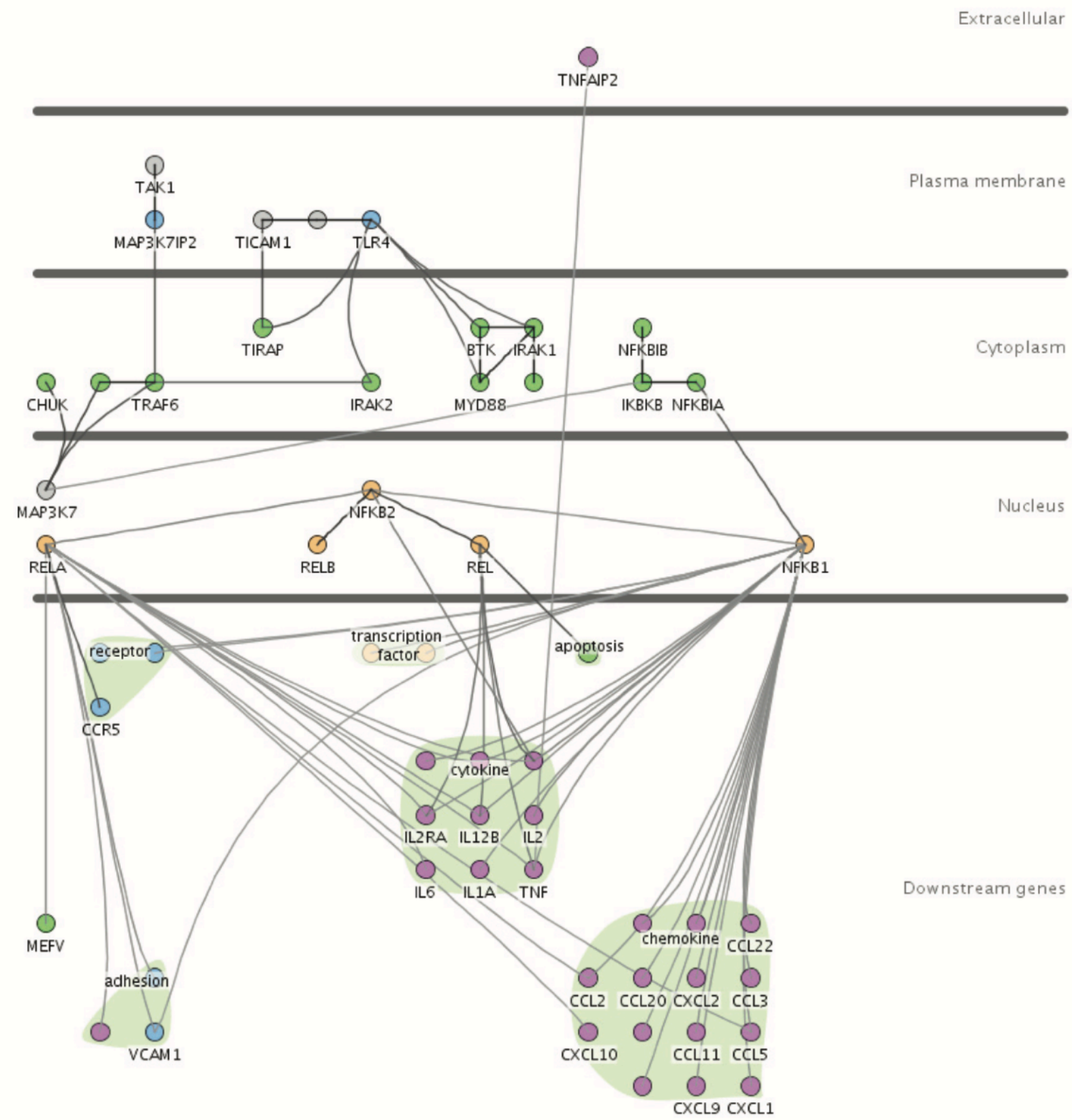


Figure 1.1. The Variant View vis tool supports biologists in assessing the impact of genetic variants by speeding up the exploratory analysis process. From [Ferstay et al. 13, Figure 1].

Why have a computer in the loop?

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(a)

Why use an external representation?

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Why depend on vision?

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Why show the data in detail?

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Why use interactivity?

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Why is the vis idiom design space huge?

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Why focus on tasks?

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Why are most designs ineffective?

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Why care about ineffectiveness?

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Why is validation difficult?

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Why are there resource limitations?

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Why analyze vis?

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