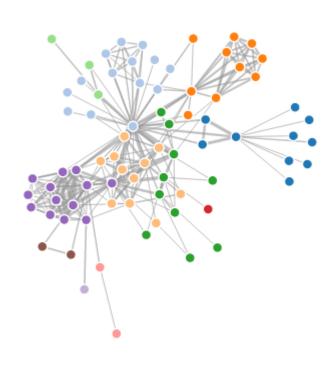# An introduction to SVG

Visweek d3 workshop

Examples of SVG

Why SVG?

- SVG is very good for things like *animation* and *interaction* (which is generally a good thing for visualization).
- SVG works with primitive shapes like rectangles, lines and circles (also good for visualization).
- SVG is an open, non-proprietary format and is widely supported.

And now the good news.

- SVG is very similar to HTML.

```
<svg width=100 height=100>
  <rect x=10 y=10 width=50 height=50
style="fill:black;"></rect>
</svg>
```

- It's also all about adding elements to containers.
- And, there are much fewer elements than HTML!

How much is there to know?

- Like with HTML, you really don't need to be an expert of SVG to make things with d3.
- Although honestly – you will need to be familiar with more than 2 elements to get started.

SVG elements

`<svg>`
This is the top-level container. It is very much like `<body>` in HTML, in that that everything else is added to it.

SVG elements

`<g>`
The g element is the other container element. (much like `<div>` in HTML).
The big difference is that everything is that all other graphical elements must be added to either `<svg>` or `<g>` elements. Much fewer elements can act as containers in SVG.

Primitive shapes

`<rect>, <circle>, <line>`

These elements make rectangles, circles and simple, straight lines.
They are really used a lot in d3: to draw bar charts, scatterplots, the ticks in the axes…

There are also elements for ellipses and polygons, which will be less useful to us (but they are there).

Path

`<path>`
This one element is the most useful of the language. It can do any form of open or closed shape – straight lines, curves, anything really.

With d3 we use it a lot, especially to create line charts, area charts.

Text

`<text>`

SVG does text, too.

In d3, this is useful for labels or legends.

Attributes and style?

- SVG elements have attributes and style, too, just like HTML.

- In fact, attributes are more used in SVG than in HTML, because they control the position and the size of the elements.