

Selected Designs for Communicating Federal Statistical Summaries

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This poster presents graphical designs developed for communicating statistical summaries from federal agencies. The two classes of templates selected for this poster, time series plots and linked micromap plots, address the general tasks of showing temporal and spatial variation, respectively. The examples concern specific applications for the several federal agencies. The primary contribution for the time series prototypes concerns interactivity and organized web access to a wealth of metadata. The linked micromap plots follow a recently developed template and the contributions include new variations on the template.

The time series research proposes a redesign for the Economy at a Glance portion of the Bureau of Labor Statistics web site (see <http://www.bls.gov/eag/eag.us.htm>). The site provides access to data and views of seven well-known time series such as the consumer price index. The redesign enhances the appearance of the plots and provides uniformity of appearance across different time series. The new design connects the graphics to a wealth of BLS metadata that is already on-line.

The top right panel of Figure 1 shows the basic viewing style for the series itself. It has a 3-D frame and rendered as being viewed below center. The title follows BLS wording conventions. The thick lines for the series are easy to see and the small white lines provide precise location. Interactive options include changing the default time interval of the last 10 years.

A brief description of options is suggestive. Under the title **Series**, **Data** provides access to the series displayed including the transformations indicate below. Information on the **Origins** of the data includes a wealth of metadata concerning BLS standards, sampling, collection, and calculations. **Usage** leads to documents describing how organizations make use of the series.

Under the title **Actions**, **Help** includes description of interactive features such as the fish eye lens that may not be obvious. **Transformations** include showing the series in the original units, monthly percent change, or 12-month percent change. Each of these can be based on either seasonally adjusted or unadjusted series. **Show Strata** provides access to the seven variables that comprise the CPI series (such as housing and entertainment) and to series for different states or regions of the nation.

The bottom of Figure 1 includes time lines with document access for three classes of events: external events, series adjustments or calculation change events, and monthly new release events. The latter reduces the burden to have a plot interpretation link.

The prototype follows many graphics design principles. Anticipated usability tests for target audiences will lead to some changes. The interactive prototypes will make use of nViZn, JAVA class library that Wilkinson (1999) partially describes in *The Grammar of Graphics*.

The poster will show additional graphics for series and their strata. This will be accompanied by a live demonstration of related nViZn interactive capabilities.

The second class of graphics follows the linked micromap (LM) template. Researchers in agencies such as EPA, the Department of Agriculture, the National Center for Health Statistics, and the National Cancer Institute (NCI) have used this recently developed template. Figure 2 shows an example being developed for NCI to communicate with state health personal about recent status within the state and Heath Population 2010 goals.

The LM template contrasts with traditional choropleth maps. Choropleth maps typically use position along a scale and spatial resolution to show political boundaries. The statistical estimates become crude caricatures by being forced into a few classes and represented with color. The LM design represents estimates (and sometimes confidence bounds) using position along a scale and uses at least part of the page to provide resolution. The design makes a caricature of the political boundaries. The poster will include many variations of the template, including several single-page state designs for county estimates.