How to Develop a Visual Summary by PB Wright

Many journals are now asking for a visual summary to be included in submissions. A visual summary essentially takes the most important results and conclusions already in the text and summarizes them in a picture. However, whether you are doing it yourself or working with an artist, you need to have a process in place that will identify what results are essential and necessary in the visual summary. Here I outline one that has worked very well for me in the past. This is an iterative process, especially when you use an artist. Remember, the summary needs to be highly focused on the most important points from the manuscript. Methodological or technological details are not usually essential. The summary answers the question "What did you find?" not "How did you do it?".

1. In bullet points only, list the most important results/conclusions from the research. Most manuscripts will have 3-5 points listed.
2. If you have more than 5, then go back over the list. Either you are trying to cram too much into the manuscript itself, or some of the points listed are either too minor to be included or really part of a main point. The former needs a re-write; the latter needs points eliminated or consolidated.
3. Generally, each point will have its own panel in the visual summary, depending upon how independent each point is.
4. Once you have a good list, begin to objectify the results (or hand it to your artist). Assign shapes and linkages (arrows or lines) to components in the results. Be sure to be consistent. For example, the same protein should have the same shape wherever it occurs, though not necessarily the same color.
5. There are several visual devices that can be used to reinforce conclusions.
    a. Color has meaning: use red for negative effects, including down-regulation, antagonism, competition, etc.; use green for positive effects, including up-regulation, activation, etc. The color can be applied to a shape or a linkage. For example, an inactive protein could be red, but its active state green, while the shape remains the same. For linkages, a red arrow would indicate a negative interaction, while a green would be a positive one.
    b. Changes in levels, amounts, or strength of interactions—usually shown by arrows, but sometimes by shapes—can be indicated by changing the width of the arrow or the size of the shape. For example, thick arrows would be strong or increased interactions; thin arrows would be weak or decreased. Tentative interactions can be dashed.
    c. Changes in the color of background of areas can highlight activity or different areas to focus the reader, while maintaining cohesion. Different colored panels can also help indicated different points.
6. Once you have a draft, go back over the points to make sure everything is clear and tweak the graphics. Repeat this until you have something you think works, then run it past a couple of colleagues (without letting them see the manuscript!). If they can figure out what it shows, then you have something that will work for the journal.

Check out the one I did. After the initial diagram from his bullet list, it took 3 or 4 tweaks for the author to be satisfied.

By the way, the process is essentially the same for any figure you want from an artist. If you can summarize in words what you want a figure to show, then it is easier and quicker for the artist to deliver one that works.