When evaluating a figure for clarity and completeness, consider the following questions

Design/Organization
- Is the display consistent with the model or hypothesis being tested?
    - e.g., if data have been residualized or transformed for statistical analysis they should also be transformed in the graph
    - e.g., if data are paired between conditions, the graph should reveal the pairwise differences rather than differences at the group level
- Are there "empty dimensions" in the display that could be left out?
    - e.g., a 3D pie chart for 2D categorical data
    - e.g., extraneous colors that do not encode meaningful information
- Does the display provide an honest and transparent portrayal of the data?
    - e.g., hiding, smoothing or otherwise modifying data have been avoided
    - e.g., actual data points are emphasized over idealized models

Axes
- Are axes scales defined as linear, log, or radial?
- Does each axis label describe the variable and its units?
    - e.g., for quantities with units: "Time to peak (ms)"
    - e.g., for arbitrary units (a.u.): "BOLD signal intensity (a.u.)"
    - e.g., for unit-less quantities: "Spearman rank correlation"
- Are axes limits appropriate for the data?
    - e.g., the graphic should not be bounded at zero if the data can take on both positive and negative values.
- Is the aspect ratio appropriate for the data?
    - e.g., when x- and y-axes contrast the same variable under different conditions, the graphic should be square.

Color mapping
- Is a color bar provided?
- Is the color map sensible for the data type?
    - e.g., use [color bar] when data is bipolar, and map zero to green
    - e.g., use [color bar] when data is unipolar (magnitude only), and map zero to black
    - e.g., use [color bar] when data is circular, and map $-\pi, +\pi$ to red
- Does the color bar axis indicate the quantity, units, and scale?

Uncertainty
- Does the display indicate the uncertainty of estimated parameters?
- Is the type of error surface appropriate for the data?
    - e.g., standard deviations or prediction intervals are useful to describe variability in the population
    - e.g., standard errors or confidence intervals are useful to make inferences about parameters estimated from a sample
    - e.g., parametric confidence intervals should only be used if data meet the assumptions of the underlying model
- Are the units of uncertainty defined?
    - e.g., "Error bands indicate non-parametric 95% confidence intervals of the median"

Color
- Are contrasting colors consistent with a natural interpretation?
    - e.g., red for increases, blue for decreases
- Can features be discriminated when printed in grayscale?
    - e.g., Group A ---●---
        Group B —○—
- Has red/green contrast been avoided to accommodate the most common form of colorblindness?

Annotation
Information obligatory to understanding the display should be shown on the figure itself. Procedural details or definitions may be relegated to the legend.
- Are all symbols defined, preferably by directly labeling objects?
- Is the directionality of a contrast between conditions immediately obvious?
    - e.g., "Patients – Controls"
- Is the number of samples or independent experiments indicated?
    - e.g. "Each point represents the mean over 23 subjects"
- Are uncommon abbreviations avoided or clearly defined when used?
- Are abbreviations consistent with those used in the text?
- Are statistical procedures and criteria for significance described?
    - e.g., for a single test: "A repeated-measures ANOVA showed a significant effect of treatment ($F[2, 10] = 12.53$, $P = 0.002$)"
    - e.g., for several tests: "Asterisks denote correlations different from zero ($P < 0.01$, two-tailed t-tests, Bonferroni corrected for 10 tests)."