Calculating $\vec{E}$ from Gauss's Law: Strategy

Design the Gaussian surface such that it reflects the symmetry of the problem at hand.

- **Use concentric Gaussian spheres in problems with spherically symmetric charge distributions.** The electric field is perpendicular to the Gaussian sphere $(\vec{E} \parallel d\vec{A})$.
- **Use coaxial Gaussian cylinders in problems with cylindrically symmetric charge distributions.** The electric field is perpendicular to the curved surface $(\vec{E} \parallel d\vec{A})$ and parallel to the flat surfaces $(\vec{E} \perp d\vec{A})$.
- **Use Gaussian cylinders with axis perpendicular to planar charge distributions.** The electric field is parallel to the curved surface $(\vec{E} \perp d\vec{A})$ and perpendicular to the flat surfaces $(\vec{E} \parallel d\vec{A})$.