Elliptical galaxies aren't supposed to have much gas. Dwarf elliptical galaxies aren't supposed to have any gas. But yet, the dwarf elliptical galaxy NGC 404, has gas, and lots of it. NGC 404 is one of only three dwarf ellipticals known to have an interstellar medium (ISM). I will present observations of the molecular ISM in NGC 404, that portion of a galaxy's gas that can be used to make new stars. I will use these observations, and others, to probe the origins of the ISM in this supposedly dead galaxy.