Abstract: Let $M$ be a closed $n$-manifold, $H^q(M)$ its de Rham cohomology groups, which are finite dimensional vector spaces. The Lefschetz number of a smooth map $f : M \to M$ is $L_f = \sum_{q=0}^{n} (-1)^q \text{tr}(f_q^*)$ where $f_q^* : H^q(M) \to H^q(M)$ is the linear transformation induced by $f$ and $\text{tr}(f_q^*)$ is its trace. A theorem of Lefschetz asserts that if $L_f \neq 0$ then $f$ has fixed points. A theorem of Atiyah and Bott gives a formula for $L_f$ under some condition on $f$. I plan to review this, then describe work in progress with L. Hartmann in a certain setting in which $M$ has singularities and the de Rham complex is replaced by a related complex.