















## A Wave Equation for Electrons $E = \hbar \omega \qquad p = \hbar k$ Schrodinger assumed that there was some wave-like quantity that could be related to energy and momentum ... $\psi \approx e^{i(k_x x - \omega t)} \quad \text{wavefunction}$ $\frac{\partial}{\partial t} \psi = -i\omega \psi \qquad \longmapsto \quad i\hbar \frac{\partial}{\partial t} \psi = \hbar \omega \psi = E\psi$ $\frac{\partial}{\partial x} \psi = ik_x \psi \qquad \longmapsto \quad -i\hbar \frac{\partial}{\partial x} \psi = \hbar k_x \psi = p_x \psi$















