

Scientific Legacy of NSEC Program

R.M. Westervelt (Harvard)

- **Smaller, Faster, More Powerful, Less Expensive**
- **Nanodevice → Device Science → Applications**
- **NSEC Joins Separate Fields**
 - **Materials Science, Electrical & Mechanical Engineering, Physics, Chemistry, Health & Medicine**
- Example: **Low-cost Integrated Biosensors for Health**

1-chip NMR Relaxometer (D. Ham & R. Weissleder)

"Magnetic switch" biosensor -
clumping of magnetic particles
reduces NMR T2 relaxation time.

Conventional NMR relaxometer

\$80,000 + 250 lb

1-chip NMR relaxometer

disposable chip + magnet

