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Nanomorphic Cell

Application

- Application drivers:
  - Extreme Capsule Endoscopy

- Size of market:
  - Potential for widespread use

- Examples of unmet bio/medical need:
  - Early detection of cancer
  - Active imaging at the level of cell physiology

Research Needs

Scientific/technological problems and barriers:

- Ultra-compact energy sources
- Communication with an external station
- Micro-scale system assembly and packaging

Advantages

Impact if successful:
- In-vivo diagnostics and therapeutics at the level of individual cells

Advantages:
- Non-invasive, real-time, high-resolution, high-selectivity
- Synergistic with current semiconductor trends
  - Scaling
  - Functional diversification

Resource requirements:
- Annual cost: ~$4M/year
- People: ~10 Faculty
- Time: Near term goals ~ 3 yrs., Long term goals ~ 12 yrs.

Facilities: Primarily physics, materials science, chemistry and engineering teams with access to relevant operational environments.