

MC-Cap & ABC Capsule

Light-Powered Platforms for
Minimally Invasive Diagnostics and
Microbiome Modulation

Inventor | 6 Patents | 3 Prototypes |
Academic Collaborators

The Problem

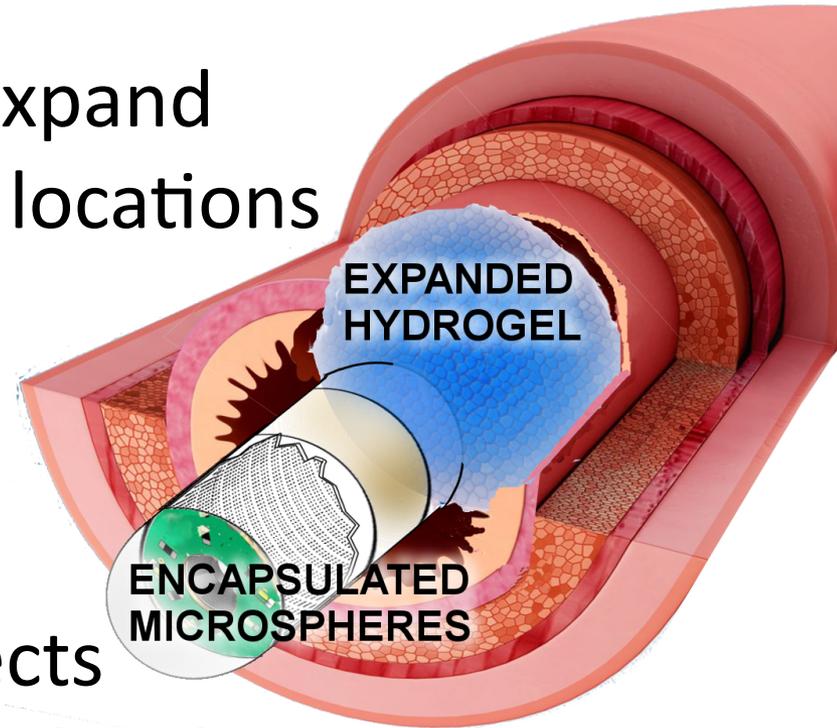
- Capsule endoscopes lack position control and real-time tracking
- Gastroenterologists can't pause, retrieve, or localize capsules
- Livestock antibiotics cause resistance but remain in use for growth
- Farms need safe, sustainable alternatives to sub-therapeutic dosing

The Solution – MC-Cap + Encapsulated Microspheres

- MC-Cap: LED-activated hydrogel expands to slow or stop capsule motion
- Encapsulated Microspheres: ultrasound-visible shell enables real-time localization
- Together: Motion control + spatial tracking
two critical gaps solved in capsule diagnostics

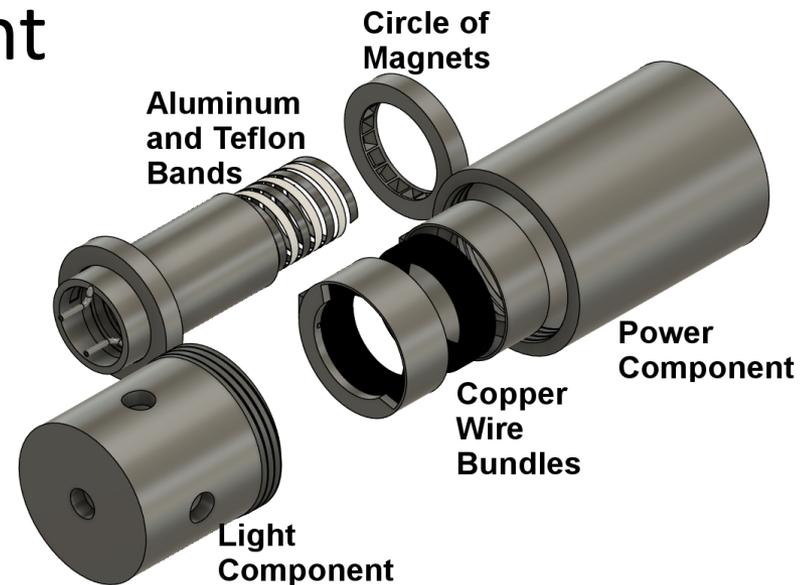
How MC-Cap Works in the GI Tract

- LED triggers hydrogel to expand and stop capsule at precise locations
- Tether enables retrieval or positional mapping
- Microsphere coating reflects ultrasound for non-radiative localization



ABC Capsule – Antibiotic-Free Livestock Support

- Capsule emits 405 nm light to modify microbiota load
- Triboelectric & magnetoelectric components generate power from movement
- Replaces low-dose antibiotics with safe, battery-free solution



Prototypes & Academic Support

- MC-Cap materials are prototyped
- ABC Capsule assembled with triboelectric power unit
- UC-Davis (MMP-8 diagnostics, animal trials)
Wayne State (brain model) University of Idaho
(ABC Capsule field testing)

IP Portfolio

- 6 awarded patents: MC-Cap, Encapsulated Microspheres, ABC Capsule, Chulites, Siren Guide, Steadihelm
- 4 pending patents covering additional capsule tech and material integration
- IP moat strategy with interlocking claims across platforms

Market Opportunity

- GI diagnostic capsule market >\$500M; MC-Cap solves key clinical objections
- ABC Capsule addresses >\$1B livestock productivity segment post-antibiotic
- Licensing targets: Medtech, AgTech, Veterinary Health multinationals

What I'm Looking For

- Lab access, regulatory guidance, and trial prep support
- Help with venture development and validation strategy
- Partner introductions and follow-on funding readiness

Why Me / Why Now

- Inventor with 6 patents, 3 prototypes, and deep development experience
- Aligned with trends in non-invasive diagnostics and sustainable agtech
- Ready to execute now with proven devices and engaged collaborators

Contact

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