Commercial Impact:

The problem: Knee joint failure due to irreparable meniscal tears progressing to severe osteoarthritis and significant negative impact on quality of life.

The market:
- Estimated 1.5 million people damage meniscus each year (worldwide)
- US market: approximately 225,000 patients/year undergo arthroscopic meniscal repair, averaging $25,000 each.
- Estimated potential need for meniscus implants (worldwide) in targeted population (Adults 18 – 75 years) is more than $4.5 billion.

Current management of meniscus failure:
- Repair of torn meniscus: success rate is variable due to poor healing capabilities of the meniscal tissue
- Partial or full meniscectomy (meniscus removal), resulting in joint degradation and progression to osteoarthritis
- Meniscal replacement
- Current treatment options for meniscus replacement are limited.
- Cadaveric transplantation of a harvested meniscus. This is the only proven existing solution to treat total meniscus failure.
- Collagen based scaffolds. Success is variable.

The Product and Value Proposition:

Advantages of bacterial cellulose:
- Implant is not biodegradable and is not dependent upon cellular colonization
- Track record of biocompatibility (surgical mesh, vascular stents) supports hypothesis that implant can remain embedded indefinitely
- Ability to manage cellulose fiber design allows us to design an implant that will mimic the architecture and biomechanics of native menisci
- Our implant will support biointegration along the external wall (adjacent to the joint capsule) and osseointegration of the biosynthetic meniscal horns.
- The bacterial cellulose implant elicits minimal inflammatory response; this will mitigate joint degeneration and progression of osteoarthritis which is a common sequel to invasive joint surgery.

The Company and Team:

Paul Gatenholm, PhD, CSO, President
- Global Biomaterial Scientist: >200 peer review papers, >15 international patents
- Entrepreneur: 3 successful start-ups
- Adjunct Professor at Biomedical Engineering and Sciences at Virginia Tech and Wake Forest University (WFU); WFU for Regenerative Medicine

Laurie O’Rourke, DVM, PhD, CTO
- 15 years experience in translation of laboratory work into accepted products at Novartis and Ciba-Geigy
- Veterinary Pathologist (Diplomate ACVP & ECVCP); previously Associate Professor, Virginia Tech

Erik Gatenholm, CEO and Founder

Cristin Ferguson, MD, PhD, WFU: Preclinical Consultant

Joel Berry, PhD, University of Alabama, Birmingham: Bioreactor & Process Design.