Sparta Biomedical™

Reimagining Knee Repair

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Highlights

1 Addressing Significant Clinical Need

- Over 300M worldwide have osteoarthritis
- 16M visits in the US for knee symptoms
- 1.2M limited duty days associated with knee chondral procedures (within active military personnel)

2 Sustainable Differentiation

- Unmatched target product profile- mimics native cartilage with long term durability
- Implanted through arthroscopic repair
- Allows for immediate weight bearing
- Breakthrough Device Designation potential
- Robust IP estate

3 A Clear Path to Market

- Regulatory path for bone-cartilage technologies is well-established
- Device composition is well-known and characterized
- Experienced clinical/technical/regulatory team
- Lean, efficient use of capital enabling an attractive investment and exit

The Clinical Need

Surgical standard of care results in a high reoperation rate. Significant number of patients deemed inappropriate for TKA

568K

Osteochondral repairs expected in 2021

up to 30%

Reoperation rate w/in 2 years

5M

Number of people living with total knee replacement (TKR) in the US

1 in 3

Judged inappropriate for total knee arthroplasty (TKA)

The Solution: SBM-01

Intrinsically stable design

Mimics hyaline cartilage

Conforms to joint surface & subchondral bone

Low profile geometry

Available in multiple sizes

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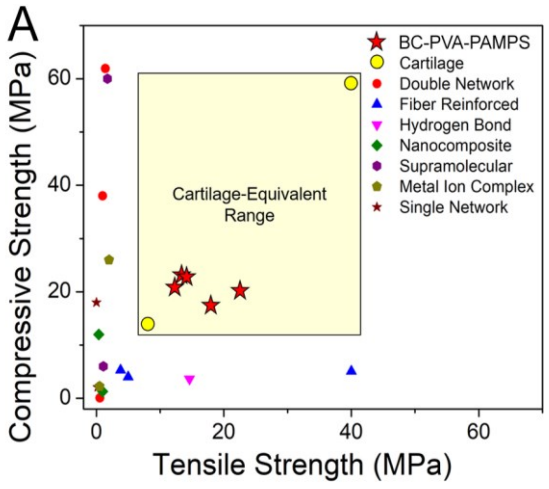
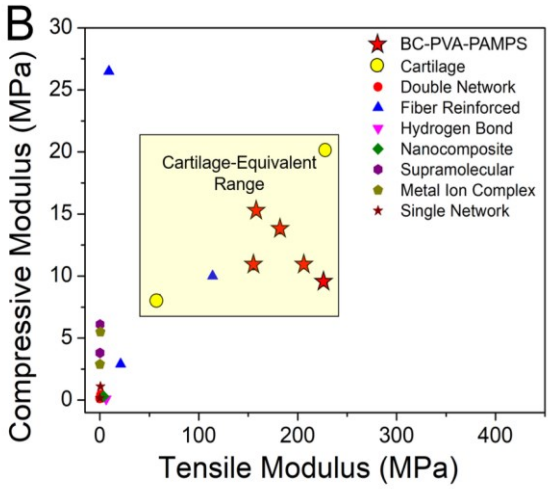
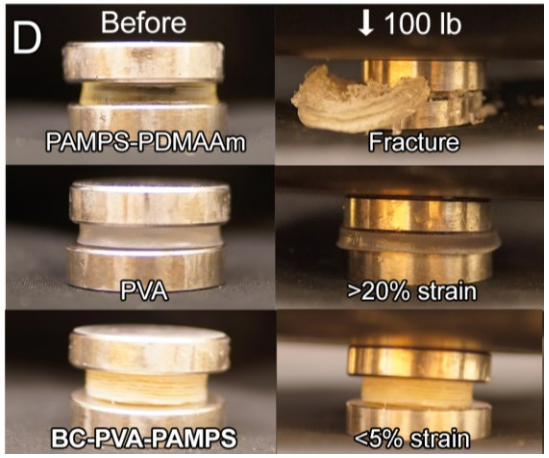
A First-of-its Kind Biomimetic Cartilage Developed at Duke University

The strength and modulus of the hydrogel⁂ match those of cartilage- Deformable, self-lubricating, no opposing cartilage wear

⁂Note: a 200lb (890 N) person will typically be applying a peak force of 3000 N during walking, which corresponds to a mean contact stress of ~2.5 Mpa (8 times lower than our failure stress).







Market Context

Treatment gap and macro trends result in significant opportunity

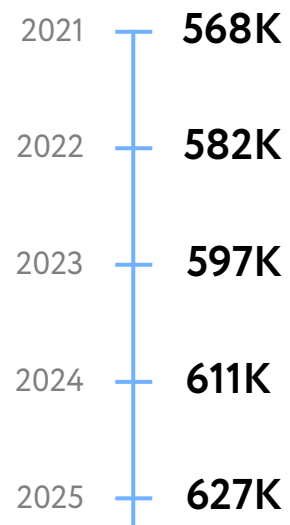
Knee Osteochondral Market

- Debridement, Microfracture most common surgical intervention
- Allografts, OATs, ACI, MACI—not scalable, expensive, additional morbidity, procedure complexity, or limited shelf-life
- No new significant innovation in osteochondral repair in over a decade
- In development: Cartiheal, Biopoly, Episurf, Hyalex, Anika

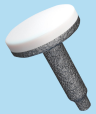
Growth Drivers

- Aging population
- Increasing diagnosis rate for cartilage defects
- 40% of those over 40 are obese (significant factor in OA)
- Shift to outpatient based procedures
- Return to Duty (military) imperative
- Surgeon demand for an option in younger patients with disease but not candidates for PKR and TKR

Target Surgeries



How is SBM-01 Different from the Competition?

	Sparta Biomedical	ANIKA	CartiHeal
			
No opposing wear	✓	✗	?
Immediate weight bearing	✓	?	✗
Multiple lesion shapes & sizes	✓	✗	✗
Arthroscopic repair	✓	✓	✗
No bone cyst formation	✓	?	?

Clear Regulatory Path

Regulatory Consultant: MCRA

Reimbursement

Reimbursement Consultant: MCRA

Coding

1. Knee allograft coding
   - 27415
   - 29867
2. Reimbursement & Coding strategy assessment
3. Competitor (i.e Agili-C, Episealer) coding

Coverage

1. Pivotal study with cost effective data generation
2. Single-arm studies capturing health economics
3. Claims data analysis w/budget impact model
4. MCIT

Reimbursement

Peer reviewed publications comparing standard of care and SCR-01 clinical outcomes

Robust Patent Protection

Patent Counsel: Shay Glenn

1. Triple-Network Hydrogels
2. Artificial Cartilage
3. Hydrogel Bonding

Design

Utility

Method of attachment

3 Patent Families	**6** National Phase filings
1 PPH	**8** Pending Applications

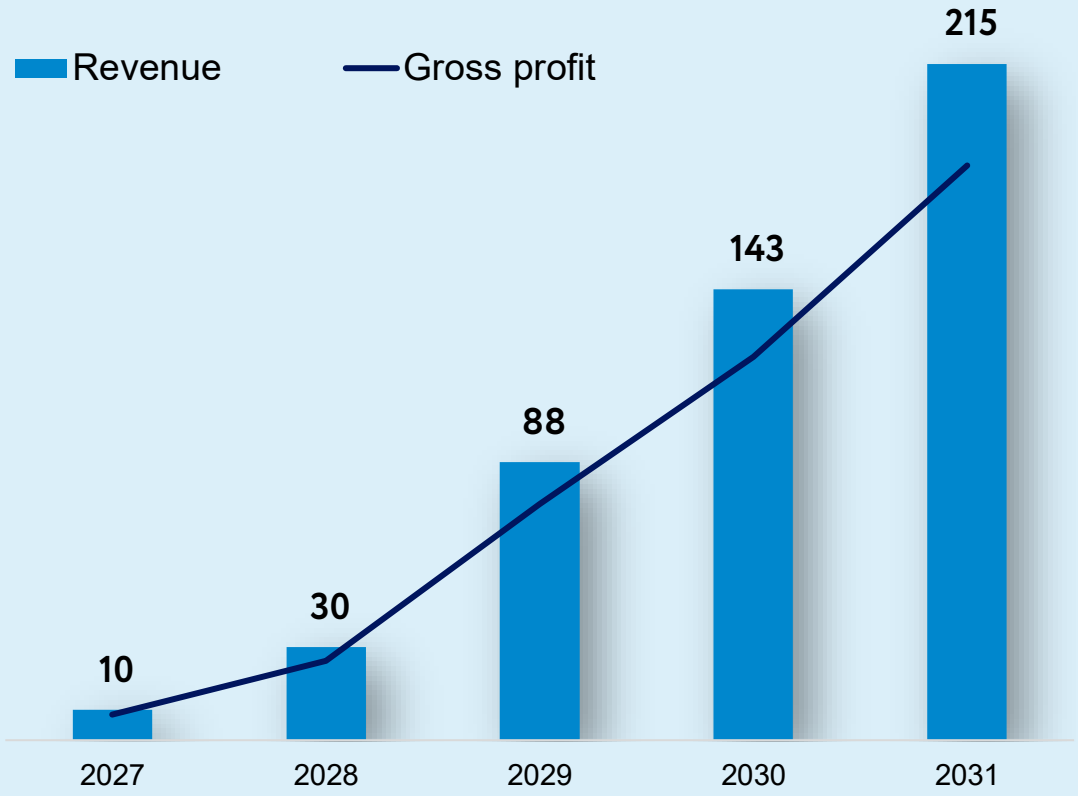
SBM-01's Product Profile Results in Significant Ramp*

Addressable Market

	'27	'28	'29	'30	'31
Applicable Surgeries	658k	674k	691k	708k	726k
Procedure Share	0.3%	0.9%	2.6%	4%	5.9%
SCR-01 Procedures	1.9k	5.9k	17.6k	28.6k	42.9k

Note: Procedure volume per Medtech 360 Decision Resources Group, Internal projection

Revenue and Gross Profit ($'Ms)



*Excludes ex-US market opportunity (EU, China, and LatAM)
*Excludes indication expansion

Late Stage Investors and Strategics have a Keen Interest in Sports Medicine

Venture Funding Raised

$77M
Carticept/Cartiva

$110M
Histogenics

$46M
Histogen

$74M
Cartiheal

$48M
Biomemedica/ Hyalex

$113M
ActiveImplants

Exit Price at Regulatory Approval

$500M
Cartiheal (Bioventus)

Exit Price after Commercial Stage

$435M
Cartiva (Wright Medical)

Team

Dushyanth Surakanti
Founder, CEO

- 20yrs+ spec pharma, device, pharma
- Chief Commercial Officer
- Corporate Development Head
- Product Development/Inventor
- Harvard Business School

Dimitrios Angelis
Founder, COO

- 22yrs+ spec pharma, device, tech, generic
- Advise 30+ Life Science Companies
- Director of three NASDAQ Companies
- New York University School of Law

Ben Wiley, PhD
CTO, Inventor

- Professor of Chemistry, Duke University
- 18 yrs of experience in developing new materials with 100+ publications
- Developed 1st cartilage-equivalent hydrogel and strongest hydrogel attachment method

Ken Gall, PhD
Inventor

- Professor of Materials Science and Mechanical Engineering, Duke University
- Developed novel 3D printed metals and polymers, soft synthetic biomaterials, and biopolymers with structured surface porous networks
- Serves as expert witness in multiple patent and product litigations

Nick Pachuda
Advisor

- 17yrs Ortho/Spine Industry experience creating & operating new business & ventures
- Led J&J's OA disease state strategy and external portfolio
- Multiple exits & partnerships
- Trained Foot & Ankle Surgeon

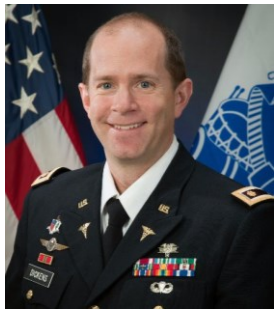
Scientific Advisory Board

Adam Yanke
MD, PhD

MIDWEST ORTHOPAEDICS at RUSH

Brian Waterman
MD

Wake Forest School of Medicine



Jon Dickens
MD, LTC

Walter Reed National Military Medical Center

Seth Lawrence Sherman
MD

Stanford MEDICINE

Kris Jones
MD

UCLA Health

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Investment Sought Prior to Clinical Development

$3.5M

- Design Freeze **$150K**
- IDE enabling studies **$2M**
- IP **$100K**
- FDA CDRH Engagement **$150K**
- Surgical Kit/GMP mfg **$450K**
- Advisors/Consultant/Team **$650K**

Attractive Investment Opportunity

Addressing a significant clinical need with a low-risk development path and highly differentiated product profile

Established Regulatory Path

Clear pre-clinical and clinical requirements

Superior Cartilage-Bone Repair

Best-in-Class Product Profile

Experienced Team

Nationally recognized SAB and diverse product development team

High ROI Potential

Lean operation, highly productive on small budget

Business Objectives

Complete Pre-IDE studies (Q4 '21)

Complete pre-IDE mtg (Q1 '22)

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THANK YOU