



# Revolutionizing Technology Development Partnerships with Universities

September 14, 2021 | 7:30 - 8:15 PM ET



**Moderator:**  
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National High  
Magnetic Field Laboratory



Magnetic Answers for Market-Driven Needs



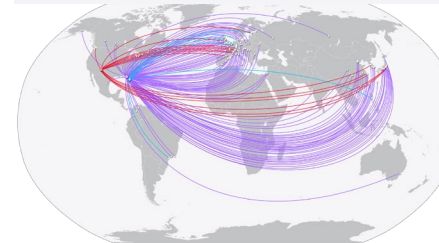
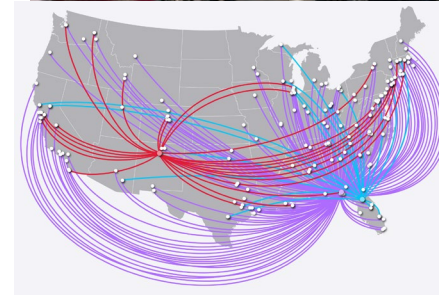
# MAG<sup>TM</sup>



# CORP

# NATIONAL HIGH MAGNETIC FIELD LABORATORY

- The **only facility of its kind** in the United States and the **largest and highest-powered magnet laboratory in the world.**
- Home to magnets up to two million times stronger than the earth's magnetic field.
- Exists to provide a research environment for U.S. and international scientists who come to make **foundational** discoveries to advance basic science, engineering, and technology in the 21st century.



DOMESTIC INSTITUTIONS
133 UNIVERSITIES
20 GOVERNMENT LABS
20 INDUSTRY

INTERNATIONAL INSTITUTIONS
113 UNIVERSITIES
25 GOVERNMENT LABS
13 INDUSTRY

# THE MAGLAB EXISTS TO SOLVE PROBLEMS OF THE **FUTURE**



The  
Problem Solving  
Gap

# WHO CAN SOLVE THE PROBLEMS OF **TODAY?**



The world knows the MagLab is the crown jewel of magnet science.  
What is still needed is a way to tap into this expertise and infrastructure  
to solve the problems industry faces now.

This is why we created MagCorp.

**We put the MagLab to work for you.**

**MAG**<sup>TM</sup>  
  
CORP

# Who Do I Call?

## How Do I Start?

## Do They Have What I Need?

## What Will The Deal Look Like?

## How Long Will This Take?

## How Much Will This Cost?

## Where Will This Be Done?

...?



### Consulting

- Finding The Right Expert
- Negotiation
- How To Pay Expert

### Sponsored Research

- New contact at Sponsored Research
- Negotiations
- Pay Sponsored Research

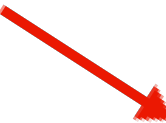
### Product Development

- New Contract & Licensing Manager
- Negotiate With Manager
- Vendor Approval

# We Have The Answers.



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**We didn't make  
this up.**

**We listened.**

- 1) Anxiety over IP & indirect cost negotiation process
- 2) Relatively slow communication & agreement execution timelines
- 3) Everyone talks science, and nobody talks business

***No advocate has ever existed for  
facilitating  
communication.***

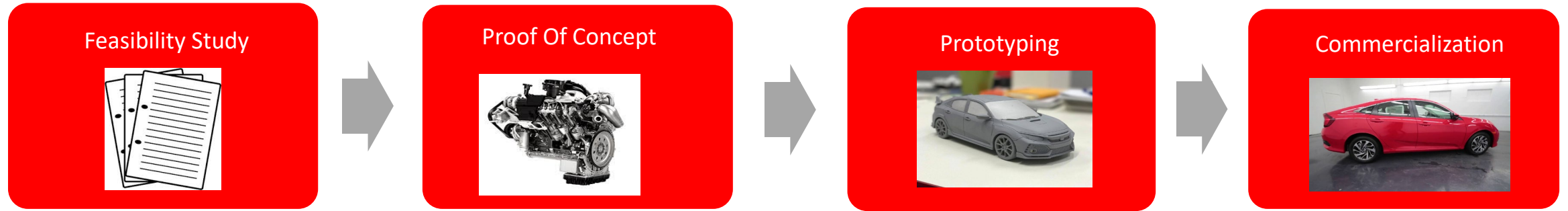


***This is the first and only agreement of its kind between a private corporation and a public research institution.***

- **Shared IP Model**
  - 40% Client
  - 40% FSU/NHMFL
  - 20% MagCorp
- **Reduced Indirect Costs**
- **Master Format**
  - Expectations are set and projects begin faster

MagCorp has executed a Master Services Agreement with Florida State University.

# The MagCorp Stepwise Engagement Model

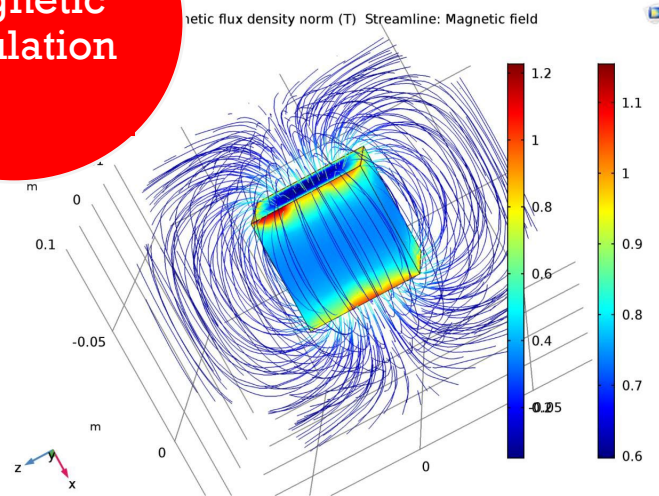


- ❑ Begin engagements with more easily fundable, low risk feasibility studies and proof of concepts
- ❑ Progress to bigger investments in prototyping and commercialization on validated projects

- 
- Lowers the risk to all parties
  - Swift executing agreements and quickly responsive
  - We speak the same language
  - Complete operational control & flexibility
  - Platform for tech transfer of SBIR/STTR phase 3 projects

MagCorp Is A  
One Stop Shop

Magnetic  
Simulation



Hardware-  
Software  
Interfacing



Full  
Specification



# What Does A MagCorp Project Look Like?

Just some examples:



Military

Manufacturing

Consumer Products



Energy Production

Communications and Sensors

MedTech



Recycling

Textile Products



# Case Example: Oak Ridge National Laboratory

Success Story Presented by our Client at the  
Magnetics/Motor & Drive Systems Conference

February 11, 2020

Orlando, FL

CONFIDENTIAL

# Pulsed Electromagnet Assembly Enable Printing of Anisotropic Bonded Magnets

## ■ Achievement

- Pulsed electromagnet assembly has been modelled, designed and delivered by MagCorp (Magnetics Corporation) to apply field to the extrusion material within the BAAM nozzle during printing.

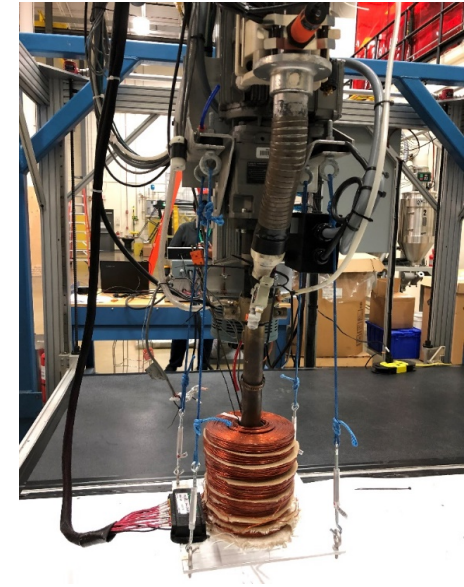
## ■ Significance and impact

- Application of field during extrusion process will enable high energy bonded magnets through control of anisotropic NdFeB magnetic particle alignment during printing
- Gap magnets could potentially offset REE demand through targeted use of additive magnets

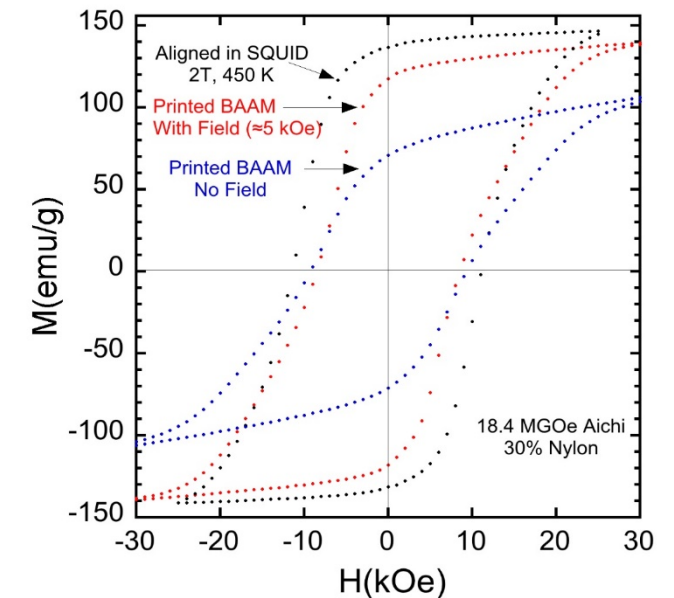
## ■ Details and next steps

- ORNL researchers have tested the magnetic field with BAAM printing and achieved 80% alignment. Further improvements are in progress

J. Whalen (MagCorp)



**Image of pulsed magnet assembly around BAAM nozzle (top). Magnetic hysteresis data on in-situ annealing (shown below)**





***SERVING  
UNMET NEEDS  
AND  
UNDERSERVED POPULATIONS***

## Case Example: UNandUP

Success Story Presented with our Client at the  
Magnetics/Motor & Drive Systems Conference

January 20, 2021

### LOW MAGNETIC FIELD MEDICAL ROBOTICS

- Electrophysiology
- Interventional neuroradiology
- Interventional Pulmonology
- *Five NIH SBIR awards since 2019 (NINDS, NHLBI)*

### MAGNETIC DRUG DELIVERY

- Hepatic Carcinoma
- Neuroprotectants for Brain Trauma
- Chemotherapeutics for Glioblastoma
- *Three NIH SBIR awards since 2019 (NCI, NINDS, NIMHD)*

## Lockheed Martin & The Defense Production Act

- Develop and establish a new MIL STD for rare earth magnets
- MIL STD will describe all test methods and required specifications
- Includes creation of a qualified producers list of DFARS 252.225-7052 compliant vendors
- Goal is to reduce magnet performance variability regardless of manufactured origins and processing methods
- Collaborative effort with key stakeholders in magnet supply chains



## Contact Us

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# Partnering with Sanofi

September 15, 2021 | 8 - 8:45 AM ET

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**Moderator:**  
**Richard Cowburn**  
Karolinska Institute



**Sridaran Natesan**  
Sanofi

# THANK YOU!



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Strengthening  
University-Industry  
Partnerships