Why join now?

Be at the forefront of an exciting new opportunity to create new technological innovations that bring life-changing cell-based cures to patients.

By joining CMaT now, you’ll be able to partner with leading academics, industry leaders and practitioners to innovate new, efficient, and economical manufacturing processes with high quality standards to advance cell therapies.

BENEFITS OF JOINING INCLUDE:

• Partnering with the international consortium exclusively engaged in cell manufacturing
• Opportunity to help develop transformative new tools and technologies for the cell manufacturing industry
• Access to an international network for strategic placement and validation of your tools, instruments, and reagents
• Connect to a trained and inclusive workforce at all levels (technical colleges, graduate students, undergraduate students and post-doctoral researchers)
• Gain insights into emerging standards and regulatory considerations
• Access to state-of-the-art infrastructure to develop and test your processes, tools, and reagents under GMP conditions
• Network with other industry members, collaborate with a world class intellectual ecosystem and an emerging workforce, and utilize insights to refine strategic plans
• Priority access to IP developed by the center and consortium

The time is now! Become a CMaT partner and revolutionize medicine with us.

Contact us today for more information. cmat@cellmanufacturingusa.org

cellmanufacturingusa.org

PARTNER WITH CMAT TO ADVANCE CELL MANUFACTURING

Become an integrated partner of the Cell Manufacturing Technologies (CMaT) research center, and join industry leaders, practitioners, and stakeholders to transform healthcare by bringing affordable, curative cell therapies to patients.

cellmanufacturingusa.org
What is CMaT?

The center for Cell Manufacturing Technologies (CMaT) is a National Science Foundation (NSF) engineering research center awarded $20 million for five years with the potential to be renewed and become a 10 year $40 million center. Collaborators include the Georgia Institute of Technology (lead), University of Georgia, University of Puerto Rico at Mayaguez, University of Wisconsin-Madison, University of Pennsylvania, Michigan Technological University, Gladstone Institutes, Emory University, and University of Oregon.

MISSION

CMaT will be recognized as a Diverse and Inclusive Innovation Hub for:

- Creating fundamental new knowledge that enables predictive cell quality determination and robust, low-cost, scalable cell manufacturing processes
- Training and transitioning new and transformative tools and technologies for affordable, reproducible, and high-quality cell production systems
- Training an inclusive cell manufacturing workforce
- Disseminating best practices and standards to all stakeholders throughout the cell manufacturing ecosystem

What is CMaT?

To transform the manufacture of cell-based therapeutics into a large-scale, lower-cost, reproducible, and high-quality engineered process for broad industry and clinical use.

To become a visionary and strategic international resource and an exemplar for developing new knowledge, innovative technologies, diverse workforce and enabling standards for cell-production and characterization processes.

VISION

MAKING CELL THERAPIES MORE ACCESSIBLE

COLLABORATE
with industry practitioners & academics

INNOVATE
new cell production processes and analytics

INVENT
new tools & technologies

ENABLE
low cost production

TRANSLATE
t next generation technologies to commercial adoption

TRAIN
a biretional, diverse and inclusive workforce

Our Research

Research Testbeds

THRUST 1

Cell-omics: Cell characterization and computational modeling to identify predictive cell therapy biomarkers

What to measure to ensure quality?

- Surface markers, transcriptome, proteome, metabolome, cell biophysical properties, and functional assays
- Informatics-based modeling and identification of predictive biomarkers (i.e. critical quality attributes, COA)

Predicting cell potency and safety:

- How to measure and predict quality?
  - Surface markers, transcriptome, proteome, metabolome, cell biophysical properties, and functional assays
  - Validation/safety of manufactured cells using animal models

- Rapid readout sensors for COA
- In vitro organotypic and on-chip models
- High throughput potency and safety assay

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- Induced Pluripotent Stem Cell (iPSC)-derived Cardiomyocytes for Cardiac Repair
- Engineered T cells to Treat Cancer
- Mesenchymal Stem Cells (MSCs) for Immunomodulation and Tissue Regeneration

THRUST 3

Scalable manufacturing:

- How to manufacture with high quality, low cost, and at large scale?
  - Integrated in-line sensors and assays
  - Biomaterials for cell expansion
  - Massively parallel microfluidic and millifluidic microreactors for scale-out
  - Integration of process control and modeling
  - Supply chain management and predictive models

- Induced Pluripotent Stem Cell (iPSC)-derived Cardiomyocytes for Cardiac Repair

THRUST 2

- Induced Pluripotent Stem Cell (iPSC)-derived Cardiomyocytes for Cardiac Repair

VOCABULARY
Why join now?

Be at the forefront of an exciting new opportunity to create new technological innovations that bring life-changing cell-based cures to patients.

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• Creating fundamental new knowledge that enables predictive cell quality determination and robust, low-cost, scalable cell manufacturing processes
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VISION
To transform the manufacture of cell-based therapeutics into a large-scale, low-cost, reproducible, and high-quality engineered process for broad industrial and clinical use.

To become a visionary and strategic international resource and an exemplar for developing new knowledge, innovative technologies, diverse workforce and enabling standards for cell production and characterization processes.

Our Research

Driven by stakeholders  Clinically relevant  Leading edge

Predicting cell potency and safety:
How to measure and predict quality?
• Rapid readout sensors for CQA
• In vitro organotypic and on-chip models
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Scalable manufacturing:
How to manufacture with high quality, low cost, and at large scale?
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Research Testbeds

Mesenchymal Stem Cells (MSCs) for Immunomodulation and Tissue Regeneration

Engineered T cells to Treat Cancer

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CMaT ecosystem and partners:
Marcus Center for Therapeutic Cell Characterization and Manufacturing (MC3M)
Georgia Tech Petit Institute for Bioengineering and Bioscience
Waisman Biomanufacturing
National Cell Manufacturing Consortium (NCMC)
Georgia Tech Research Institute (GTRI)
Georgia Tech Manufacturing Institute (GTMI)
Georgia Clinical and Translational Science Alliance
Global Center for Medical Innovation (ECMI)
National Institute for Standards and Technology (NIST)
National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)
Advanced Regenerative Manufacturing Institute (ARMI)
Georgetown-Badger Biomanufacturing Center (GABC)
Forward BID Initiative

COLLABORATE with industry practitioners & academia
INNOVATE new cell production processes and analytics
INVENT new tools & technologies
ENABLE low cost production
TRANSLATE next generation technologies to commercial adoption
TRAIN a birented, diverse and inclusive workforce
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Thrusters

THRUST 1
Cell-omics: Cell characterization and computational modeling to identify predictive cell therapy biomarkers

THRUST 2
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- Waisman Biomanufacturing
- National Cell Manufacturing Consortium (NCMC)
- Georgia Tech Research Institute (ETR)
- Georgia Tech Institute for Robotics and Intelligent Machines (IRIM)
- Georgia Clinical and Translational Science Alliance
- Global Center for Medical Innovation (ECMI)
- National Institute for Standards and Technology (NIST)
- Standards Coordinating Body
- National Institute for Innovation in Manufacturing Biopharmaceuticals (NIMBL)
- Advanced Regenerative Manufacturing Institute (ARMI)
- Georgia Advance Biomanufacturing Center (GABC)
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