

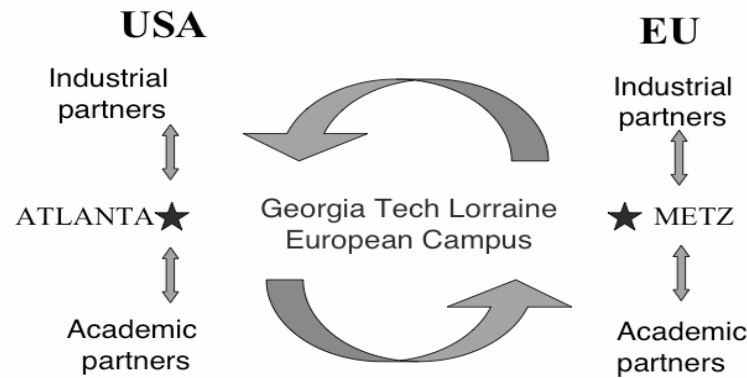
# Research at GTL

*Y. Berthelot, ME*

*S. McLaughlin, (ECE) - Director of Research at GTL*

Research is key to the mission of GTL

- Within GT: Faculty issues (RPT)  
Graduate student issues: (GRA support)
- Outside GT: Hub for Research and Education



# Current Status

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- **GTL Founded in 1988**
- **1998: GTL-CNRS Telecom Lab formed (UMR-6603)**  
**UMR CNRS - GTL-Univ. Franche-Comté, Besançon (FEMTO)**
  - ◆ 20 CNRS staff and doctoral students
  - ◆ Optical telecommunications, secure networks
  - ◆ Educational programs (joint PhD/Doctorat w/ SUPELEC, UFC)
- **1997-present : ME faculty develop research ties with ENSAM/LPMM/U-Metz - UMR 7454)**
  - ◆ Mechanics of Materials
  - ◆ Joint special problems, co-supervision of MS students (1 sem.)
  - ◆ Bi-annual research workshops
- **2005: GT-CNRS *Unité Mixte Internationale* (UMI-2898)**  
*Formal recognition of ECE and ME research activities*

# Research Opportunities

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- ◆ US funding agencies for GTL faculty and students?

No difference between Atlanta and GTL. GTL is Georgia Tech!

- ◆ EU - 6th and 7th Framework. GTL is French!
- ◆ ERASMUS MUNDUS (230 M euros / 2004-2008; International Grad. Edu.)
- ◆ CNRS and the importance of UMR/UMI
- ◆ Industry (Taxe d'apprentissage; internships; “binômes” fellowships)
- ◆ NSF International Programs (2005: GT submitted 2.7 M\$ proposal)
- ◆ Substantive collaborations with targeted EU partners

# Research Vision and Goals

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- Establishment of **GT International Research Center**
  - ◆ Located at two main hubs
    - Georgia Institute of Technology, Atlanta
    - Georgia Tech Lorraine, Metz, France
  - ◆ Funded by US, French, and EU partners
  - ◆ Eventually includes other US partner institutions
  
- Focus of the Center
  - ◆ Distributed learning and research
  - ◆ Mobility and outreach
  - ◆ Research expansion in several disciplines
    - Leverage current strengths
    - Expand in new areas

# Distributed Learning and Research

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- Enhance GTL as the international educational hub in Europe for the GT and other USA educational institutions.
  - ◆ Serve as the model for a truly immersive, international experience in engineering education, research, and culture.
- Develop infrastructure and conduct research as the leading international center in distributed learning and research.
  - ◆ Conduct research in a seamless, distributed network of researchers, students and faculty.

# Mobility and Outreach

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- ◆ Increase the mobility of researchers and educators between USA, France and other countries throughout Europe, beyond the one-on-one collaborations that may already exist.
  - Increase the mobility of undergraduate and graduate students between USA and Europe.
  - Increase the mobility of the top students from other continents to France and other countries throughout Europe.
- ◆ Engage corporations in international education and research experiences for undergraduate and graduate students.

# New Thrust Area: Multifunctional Materials

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## GT Atlanta

- Mechanics of Materials  
*McDowell, Cherkaoui, Lynch, Qu  
Zhou, Neu*
- Acoustics/Vibrations/Ultrasonics  
*Berthelot, Rogers, Qu*
- Lighting, Energy, Photonics  
*Ferguson, Kippelen, Citrin, Adibi*

## Université de Metz, ENSAM, and CNRS

LPMM-UMR 7554 (CNRS)  
(also ENIM and INPL)

- Physics and Mechanics of Materials  
*Cherkaoui, Patoor, Berveiller, Daya,  
Benzineb, Molinari*

**GTL**

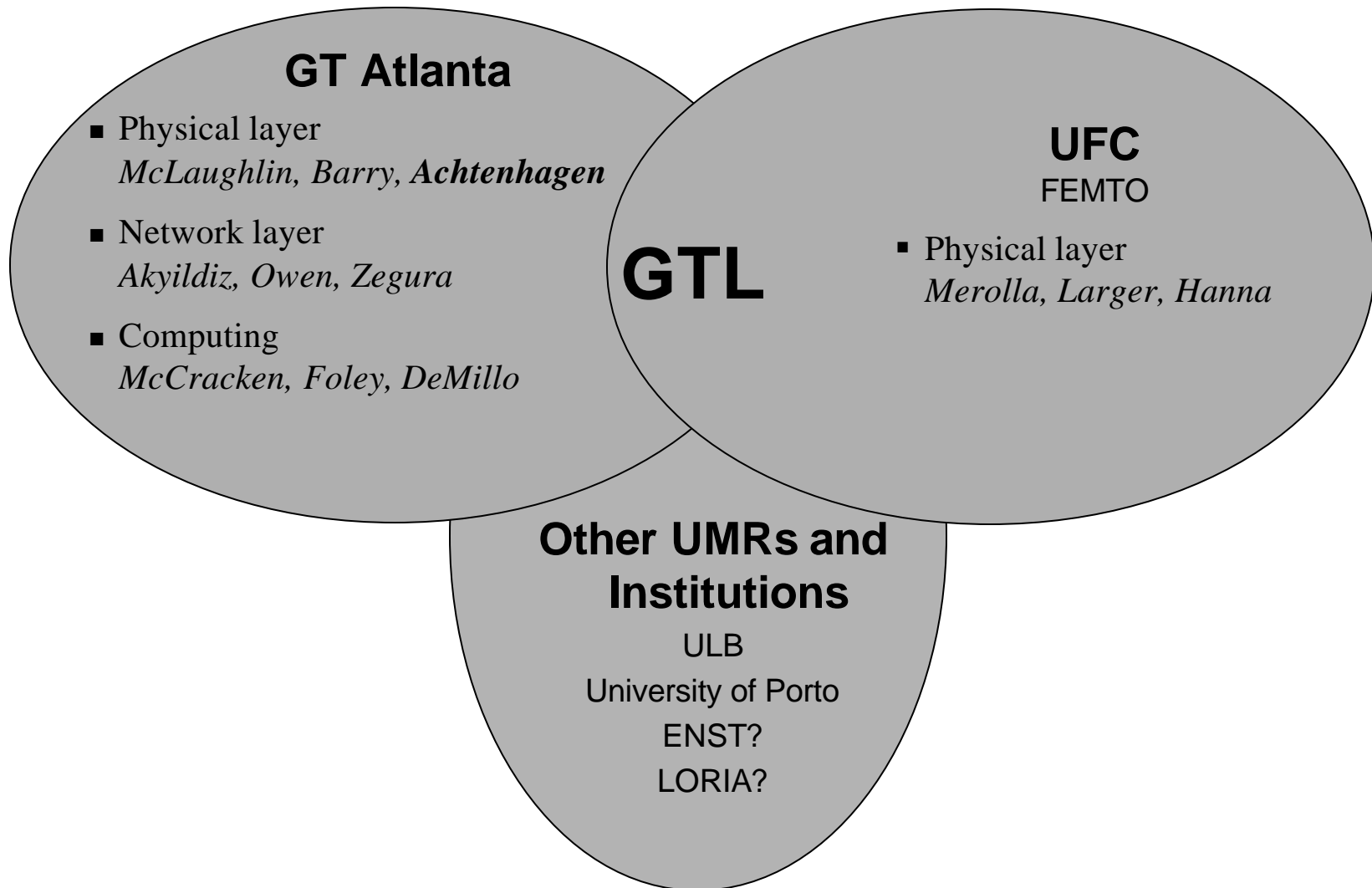
## U Metz

LMOPS-new UMR (CNRS)

- A Université de Metz,  
Supelec, and CNRS  
*Ougazzaden*

# Thrust Area: Secure Networks

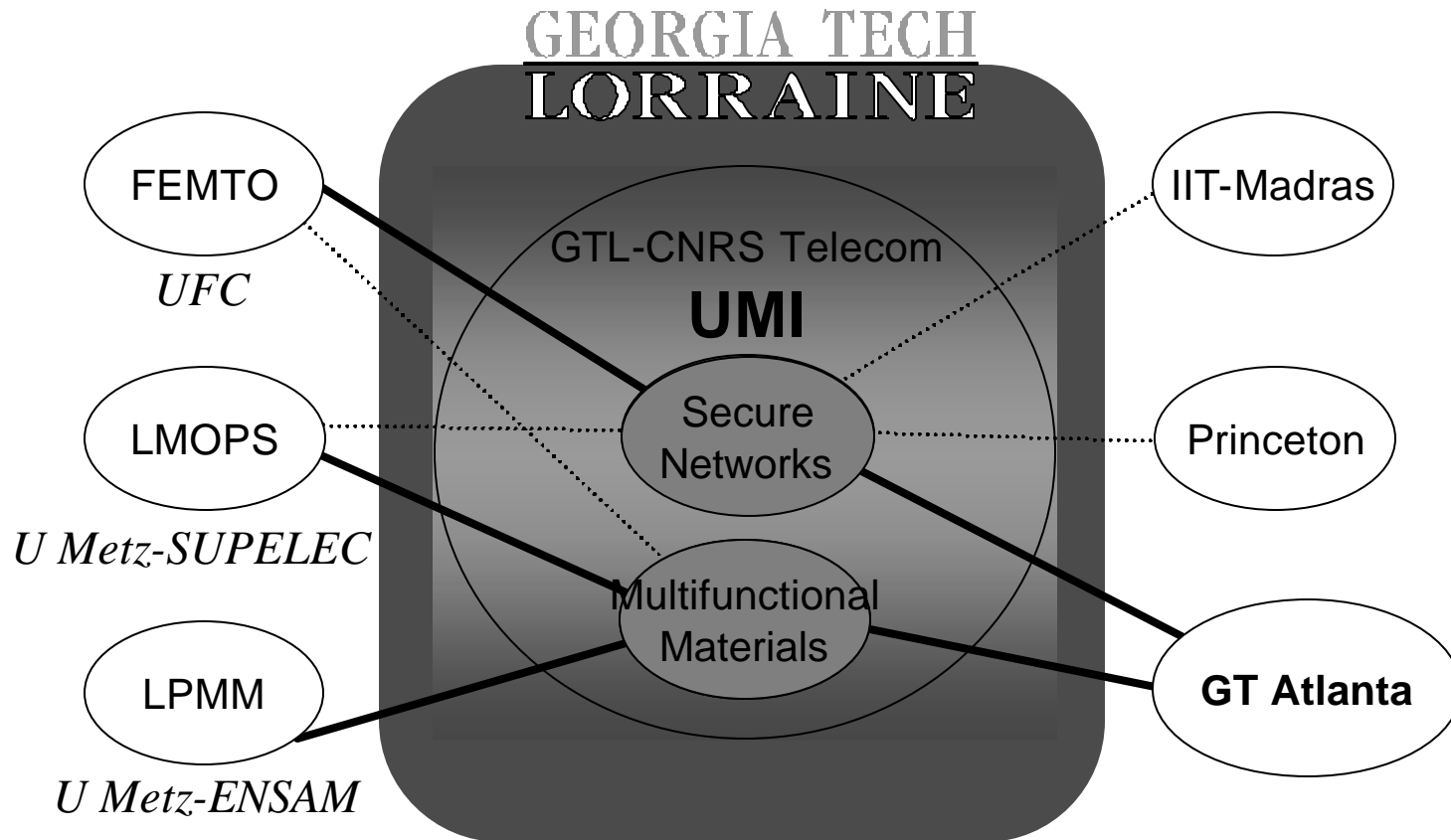
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# GT-CNRS UMI 2005

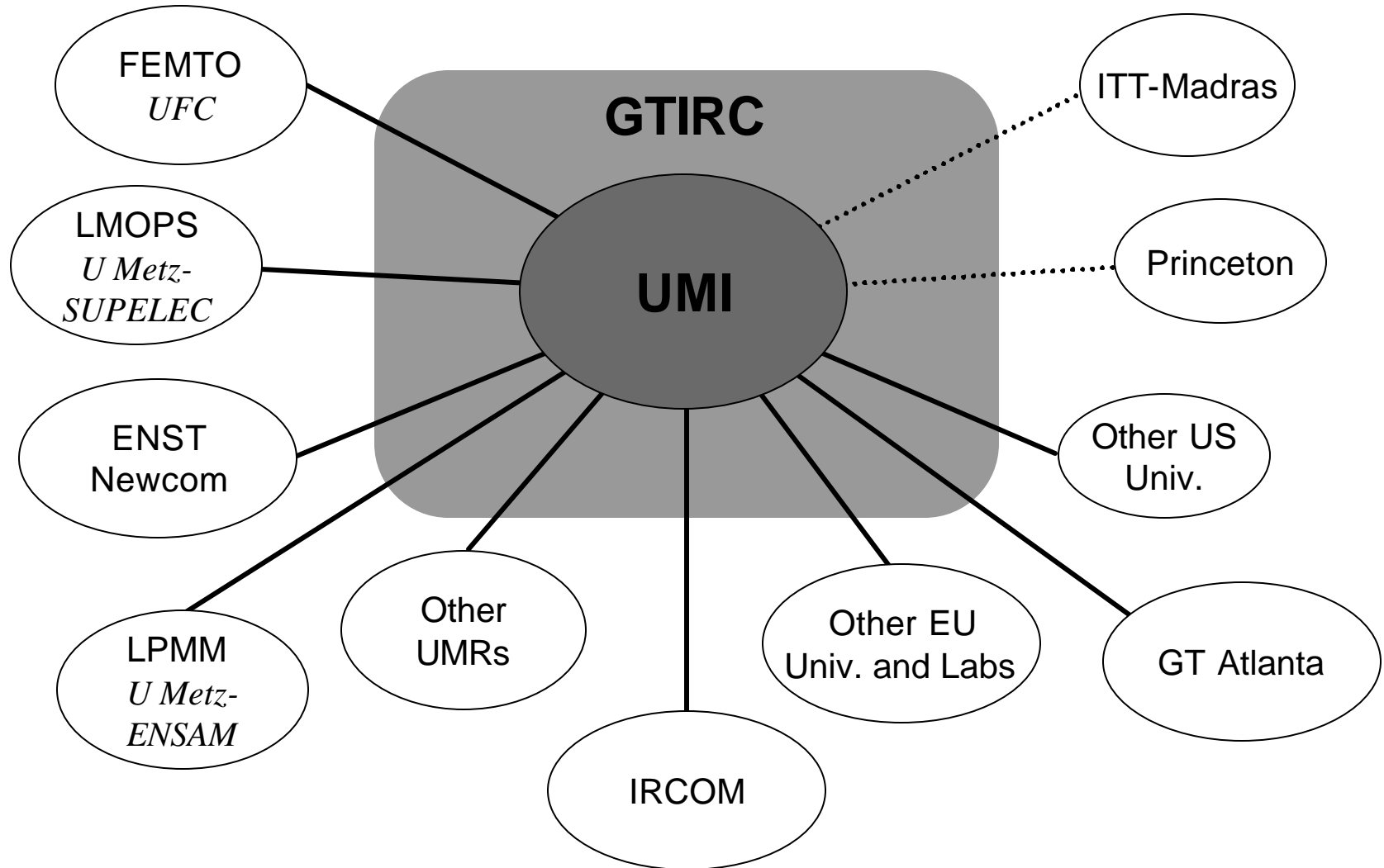
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*Lorraine research priorities*

# Longer Term UMI Model

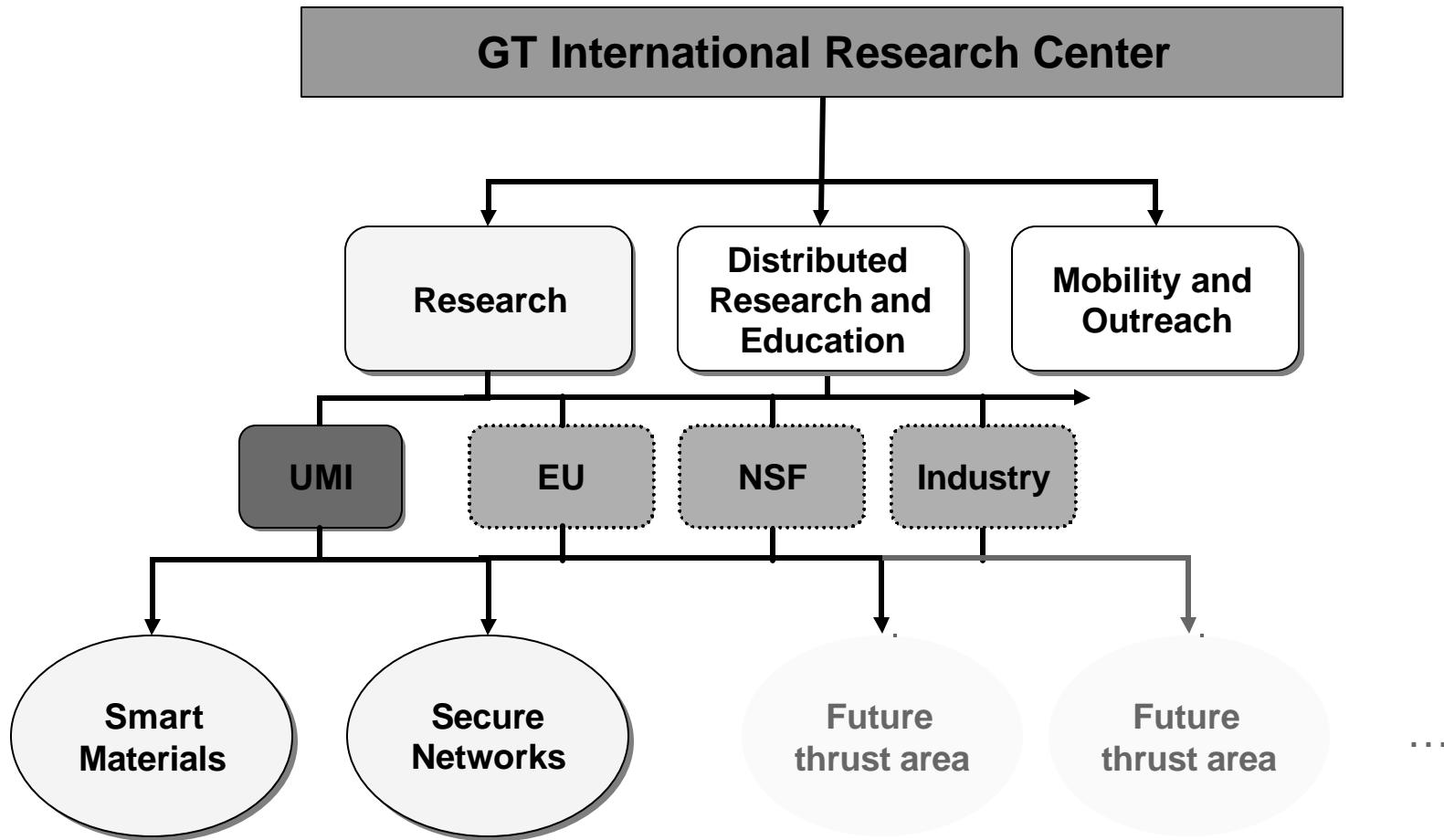
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# GTIRC Vision:

## *Research Funding and Partnerships*

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# Key Challenges

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- Constant need to **network** with French/EU authorities to ensure **support and funding** of GTL activities.
- As number of students grows **need more faculty** attached to GTL: *permanent and visiting*
  - ◆ One ME hired and one ECE about to be hired
  - ◆ Need a workload model that matches Atlanta
- Infrastructure
  - ◆ **Space** for new faculty and research programs
  - ◆ **Video conference**
  - ◆ Associated **living arrangements** for visitors