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**Scientific Knowledge to Serve Greece**

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# WHY HIAS

- Desire of the Hellenic Diaspora to Contribute to Greece
- An Environment in Greece that Encourages Such Contributions
- Technology Facilitates Long Distance Interactions

# WHY HIAS: Scientists of the Hellenic diaspora = a resource

- World Experts in Science and Engineering
- Advisors to International, National and Industrial Organizations
- Many Educated in Greece, Now in Leading Academic Institutions Abroad

## → *Example:*

- *Each year Greek scientists secure > 30M Euros (ERC grants etc.) to conduct research in European institutions. Could these people+funds work in Greece?*

# HIAS MISSION: A non-profit, private foundation by Greek scholars

- **Build** scientific bridges between the diaspora and our peers in Greece
- **Participate** in studies of relevance to the Greek Government and Industry
- **Foster** collaborations to address problems of relevance to Greek society

# HIAS PRINCIPLES : Scientific Excellence, Synergy

- Scientific excellence and synergy as national resources
- Draw on the strengths of the entire Greek scientific community
- Independent scientific organization



# HIAS – From target studies to co-laboratories

**Phase I: Target studies of interest to Greek Government and Industry**

**Phase II: Projects on Academia-Industry Interfaces, Scientific Workshops**

**Phase III: Infrastructure, Co-Laboratories, Fellowships**



# BRIDGES

**Dimitris Bertsimas (MIT) - Dora Varvarigou (NTUA)**

# HIAS – BRIDGES : Create Critical Mass - Join Forces

- **Help People to connect**
  - Academic: Graduate Students, Faculty, Post Docs
  - Projects: Existing projects, Joint initiatives
- **Catalyze Synergies**
  - Conferences/Workshops
  - Hub of HIAS in Greece
- **Collaborate with institutions that have similar goals**
  - Foundations, Private Institutions, State Agencies,...

# HIAS – BRIDGES : BUILDING ON EXPERIENCE USING BEST PRACTICES

## ➔ Research Exchanges

- Dual degrees (e.g. NTUA - Columbia)
- Co-advising graduate students and post-docs between diaspora and Greek scientists

## ➔ Twin Projects

- US project in Data Analytics is duplicated Greece.

## ➔ Funding from Foundations

- Funding for young scientists to collaborate with IAS members.

## ➔ Start-ups

- Dual presence: Greece - EU/US



# INITIATIVES

Andreas Boudouvis (NTUA) - Lydia Kavradi (RICE U.)

# HIAS – INITIATIVES : Synergies

- **Formalize Bilateral University Co-operations**
  - MS, PhD co-supervision
  - Joint Degrees
- **Promote and Support Mobility**
  - Frameworks to facilitate mobility (in particular with US), academic interaction and financial support of scientific activities in Greece
- **Promote Academia - Industry - State Collaborations**
  - Joint Conferences, Working groups

# HIAS – INITIATIVES : Synergies

- **Community Building**

- Joint projects between the diaspora and peers in Greece
- Student engagement

- **Fund-Raising**

- Support Greek universities through donations from abroad
- Setup of non-profit philanthropic organizations



# ROBOTICS IN GREECE

George Pappas (U of PENNSYLVANIA) - Michael Triantafyllou (MIT)



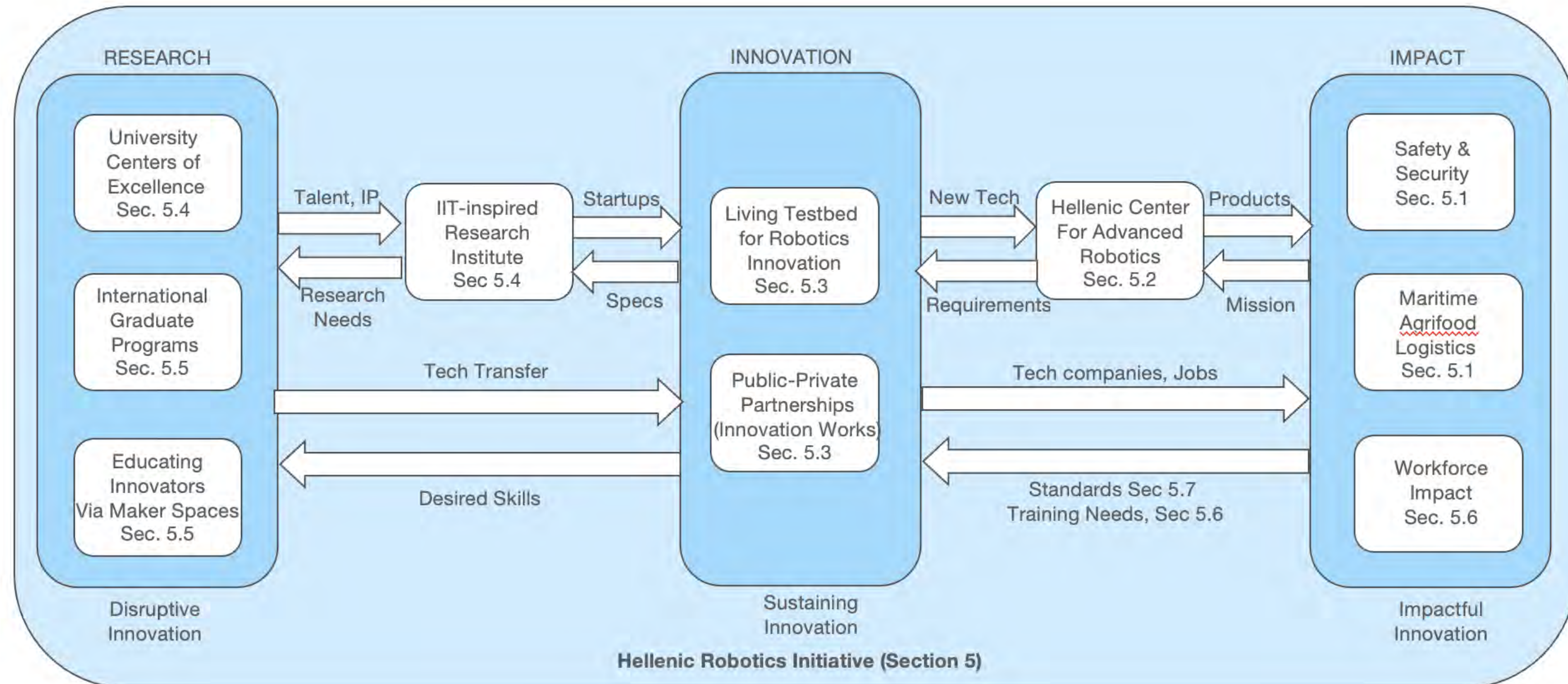
# Hellenic Robotics Roadmap – Recommendation Summary

## Foundations and Trends® in Robotics

### Robotics in the AI Era: A Vision for a Hellenic Robotics Initiative

Suggested Citation: K. Daniilidis, L. Guibas, L. Kavraki, P. Koumoutsakos, K. Kyriakopoulos, J. Lygeros, G. J. Pappas, M. Triantafyllou and P. Tsiotras (2021), "Robotics in the AI Era: A Vision for a Hellenic Robotics Initiative", Foundations and Trends® in Robotics: Vol. 9, No. 3, pp 201–265. DOI: 10.1561/23000000069.

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# Hellenic Robotics Roadmap

- **Innovation-driven Hellenic Robotics Institute**
  - Excitement from VCs, startups, industry
- **Partnering proposals across Europe/US in robotics**
  - EU teaming proposals
  - Partnering with HIAS members
  - Joint robotic programs (similar to NTUA-Columbia)

# Makerspace: A culture of Tinkerers and Innovators

- **For Greece to develop innovators in robotics requires a cultural shift to a nation of makers, builders, hackers, and tinkerers**
  - Minds and hands used to explore ways to conceive and implement ideas to put them to practice, and redesign devices - in a systematic and pervasive educational endeavor.
- **A paradigm shift in educational goals.**
  - Significant investment from all technical universities in “MakerSpaces
  - Machine shops, HW/SW makerspaces, nanofabs, etc
  - Project-oriented spaces, open access community spaces


# Example of Maker Spaces in the US

- **Higher Education Makerspaces Initiative (HEMI) : Berkeley-Carnegie Mellon, Case Western Reserve, Georgia Tech, MIT, Olin, Stanford, Yale**
- HEMI is a collaborative of leading universities focused on solving the challenges of academic makerspaces and making their combined learnings available to others

- **MIT has invested considerably in Makerspace across campus >3,500 m2 by 2022**

- **SIZE AND COST:** 1,000 m2, need \$1M per year, with 8 permanent staff assisted by 20 to 30 graduate students to serve 1,000 students per year

- For undergraduates only, 300 to 700 m2, scaled accordingly



The image displays the MIT Project ManUS logo at the top, featuring the MIT logo and a stylized 'M' with 'PROJECT MANUS' text. Below it is a detailed infographic titled 'MIT Makersystem' which shows a 3D map of the MIT campus with various maker spaces highlighted in red. Callout boxes provide details for several spaces, including 'The MIT Makerspace' (a 1,000 m2 space with 8 staff and 20-30 grad students), 'The MIT Makerspace' (a 300-700 m2 space for undergrads), and 'The MIT Makerspace' (a 1,000 m2 space with 8 staff and 20-30 grad students). The infographic also lists various tools and equipment available in these spaces, such as 3-D printers, welding machines, and oscilloscopes.

**DOZENS OF MAKERSPACES PROLIFERATE** across MIT's campus, giving the MIT community access to a host of tools—from chisels, saws, and belt sanders to 3-D printers, welding machines, and oscilloscopes—to bring their ideas to life.



# NEXT STEPS

Eleni Chatzi (ETHZ) - Daphne Manoussaki (TU Crete)

# HIAS – NEXT STEPS

## **STRUCTURE**

- **Formalizing the structure and legal framework of HIAS**
- **A Hub for HIAS in Greece**  
a physical space to foster ideation & exchange

## **PROMOTION OF TALENT**

- **A Fellowship Program (2 way Brain Gain)**

## **RESEARCH & INNOVATION**

- **Further Working Groups for Target Studies of interest to Greece**  
e.g. energy & renewables theme, climate change, COVID-19 policy

# HIAS – NEXT STEPS - OUTREACH

- **First HIAS Workshop in Summer 2022**

Themes based on feedback from the HIAS community

- **Academia - Industry Interfaces**

Workshops/Project weeks on direct problem posing and solving

Virtual seminars and online modules in collaboration with the National Council for Research & Innovation (ΕΣΕΤΕΚ)

- **Support of the Greek Innovation Ecosystem**



# DISCUSSION

**Efthimios Kaxiras (HARVARD U.) - Demetri Psaltis (EPFL)**



Ideas, suggestions, support

**[info@hellenic-ias.org](mailto:info@hellenic-ias.org)**

**PROBLEM**

- Contributions by Greeks of the diaspora
- Brain Drain
- Brain Gain
- Culture of Excellence and Innovation

**EXISTING ALTERNATIVES**

- Participation in various:
  - Organisations
  - Projects
  - Committees

**SOLUTION**

- Creation of a non-profit organisation by/for the Diaspora
- Single interface for society, industry, government

**KEY METRICS**

- Society, Industry, Academia Utility
- Member quality
- Brain Gain
- Faculty Appointments
- Start Ups
- EU/US/... projects
- External Funding

**UNIQUE VALUE PROPOSITION**

- Access to world leading academics
- Access to Networks and Know how
- Interface of international and local scientists
- A resource for sustained vs just in time innovation
- Resources for Start-Ups and Industry
- Resources for Greek Government and Academia

**HIGH-LEVEL CONCEPT**

- Consulting and Advising Work
- Active Project Participation

**UNFAIR ADVANTAGE**

- World Class Scientists
- World Class Know How
- Independence and Inclusiveness

**CHANNELS**

- Greek Academia
- Government Organisations
- Industry
- Press

**COST STRUCTURE**

- Space and Infrastructure - 50K\$ Publications
- Funding for Studies, Workshops, Fellows, Staff- 500K\$
- 10 visitors, 10 Fellows, 2 Staff

**REVENUE STREAMS**

- Charities, Donations
- EU/US Projects
- Start-Ups