UNIVERSITÀ DEGLI STUDI DI TORINO
Direzione Ricerca e Terza Missione

Marcello Baricco - Unito & Industry 4.0

among all universities, why partner with us?

| *facts & figures about Unito* |

Research and technology transfer (2015)

over **950** projects presented in **competitions** (2016)

20 registred **patents** (2014-16)

* 2016 figures are currently being updated

Over **7,700** academic publications (2015)*

€ 18 million earned through research and consultancy activities (2015)*

Students (a.y. 2016-17)

around **70,500 students**

61% women

20% from **outside Piedmont Region**

over **3,900 international** students (**5,7% of total**)

Over **20,800 first-year** students
Just over **6% international** students

Around **1,400** students enrolled on **masters** - 1st and 2nd level (a.y. 2016-17)

Over **1,200 PhD students** (as of 31st December 2016)

International networks (a.y. 2016-17)

30 bi-national **double degree** programmes

around **600** international **cooperation agreements** with other universities (a.y. 2015-2016)

7 programmes fully **in English**

over **500** incoming **Erasmus** students (a.y. 2015-2016)

over **1,200** outgoing **Erasmus** students (a.y. 2015-2016)

International rankings

3rd in **Italy*** and among the **top 300** Universities worldwide, for **ARWU Shangai**

12th in **Italy** for **Times Higher Education**

6th in **Italy** per **US News Best Global** (207th worldwide)

an exploitable research cannot be just accademic

main sectors

- aerospace automotive
- industrial manufacturing
- energy
- food farming
- health

main partners

aerospace-automotive

FCA FIAT CHRYSLER AUTOMOBILES
GM
ITT ENGINEERED FOR LIFE
ThalesAlenia Space
OLSA

IT-digital

SIEMENS
ENGINEERING
IBM
Cerved
CISCO

mechanical

MERLO
GALFRÈ
MAS PACK PACKAGING
COGNE 1916 QUALITY FIRST FOR 100 YEARS

agro-industry

goccia d'oro
PONTI DAL 1867
SACLÀ dal 1939
FERRERO
ROQUETTE
MONSANTO

energy-environment

NOVAMONT
amiat
enel
Ser energy The Power of Simplicity

electrical

VISHAY
CAEN Tools for Discovery
PRIMA INDUSTRIE
tecniKabel
ELTEK GROUP

a multifaceted approach to innovation

| *research not only technology-driven* |

soft skills

Smart HR Management & Skills reconfiguration

Ergonomics

Security & Risk Management and assessment

Design Thinking

New Organizational Models

Innovation and financial planning

Smart Materials, Smart Prototyping, Additive manufacturing

Wearable Technologies

Artificial intelligence

Big data, IoT, sensors and devices

hard skills

Dept. Chemistry/ Physics

case study #1

| *smart materials* |

CRF automotive

ITT ENGINEERED FOR LIFE automotive

smart materials: pressure sensors of polymeric nano-composites with carbon nanotubes
application: car dashboard

vibration-acoustic optimization
application: braking systems

impact: reduction of weight, costs, energy consumption, environmental impact

impact: reduction of noise, vibrations

case study #2

| *sensors & wellness* |

LOGICDATA MOTION FOR YOUR LIFE automotive

physical medicine: spinal pain assessment and treatment
application: intelligent chair for movement detection during driving activity

impact: prevention and management of spinal pain of drivers

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Dept. Agronomy

AGRINNOVA

case study #3

| *intelligent systems for farming* |

OptiSense Ltd
Sensor Systems & Analytical Instruments

Diagnostics

Advanced technologies: decision-making support tools, optimized real-time data, simulation tools

application: early detection of pathogens; inspection of propagation material at borders and at production level

impact: mitigate risks and facilitate decision-making in food protection

HARDI

COBO group

Agricultural machines

industrial automation: crop sensing, optimal spraying profile

application: precision spraying

impact: reduction of spray losses and environmental contamination

Dept. Computer Science/ Mathematics

case study #4

| *data analysis & modelling* |

Seri Jakala — marketing performance

retail

data analysis for selection of k products that should be sold with a discount in a supermarket to each specific customer with a fidelity card

application: ad-hoc collaborative recommender system

impact: customer tailor-made recommendation

evo PRICING

retail

Use of Artificial Intelligence, (Statistical) Machine Learning and statistical techniques to develop models for fashion retail

application: forecast of future market; decisions about pricing

impact: development of data driven models for pricing and planning; possible development of joint patents

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Dept. Psychology/ Cultures, Politics and Societies

case study #5

| *Human & Organization 4.0* |

COMAU

automotive

industry automation: human-automation interaction; people motivation; leadership and management style
application: introduction of technological innovation and change management

impact: improve human-workplace fit

RAMPONI
STONES AND STRASS

luxury goods

"Learning Factory":

- digital transformation readiness analysis
- digitalization impact on processes, operation, management, HR competencies and practice
- management and organization model

impact: transformation awareness and managerial competencies improvement

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Dept.
Economics &
Statistics

case study # 6

| *big data analysis* |

banking

platform development, datastreaming, geo-spatial algorithm for machine learning

application: automated report generation with geolocalised analysis and prediction

impact: tremendous improvement in process management and business intelligence

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Multiple depts.

case study #7

| *Cross-approach to innovation* |

consumer goods CARIOCA®

PARTNERS: TIM | Byters / Newbiquity | HG Consulting

pilot platform for data management and integration with sensors + SW development + data cloud
skills: data scientists, chemists, economists, sociologists, process management
application: assembly machinery

impact: reduction of costs, improvement in manufacturing efficiency, predictive maintenance

working together in the laboratories

| *open access infrastructure* |

NANOSTRUCTURED INTERFACES AND SURFACES CENTRE

Focus on energy, sustainability of industrial processes, environment, cultural heritage and biomaterials.

COMPETENCY CENTRE FOR SCIENTIFIC COMPUTING

High-Performance Computing and cloud engineering, and their technological application. Focus on scientific computing, big data and machine learning.

INNOVATION CENTER FOR TERRITORY

multidisciplinary research centre (9 dept.). Support industrial projects until they reach the market (e.gBusiness Models and Innovation Management; Smart Manufacturing and Factory; Big Data Analytics: Law technological intelligence

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innovation driven by new generations

| *training the new talents* |

Master: Data Science for Complex Economic Systems

Master: Data analysis for business intelligence and data science

Master: Marketing, sales & digital communication

Master: Artificial Intelligence NEW

PhD in
- Natural Sciences and innovative technologies
- Life and Health Sciences
- Human and Social Sciences
- Humanities

Industrial PhD: Modeling and Data science /circular economy NEW
for company staff

Master: Industria 4.0 COMING SOON!

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INCUBATORE IMPRESE 2i3T UNIVERSITÀ DI TORINO

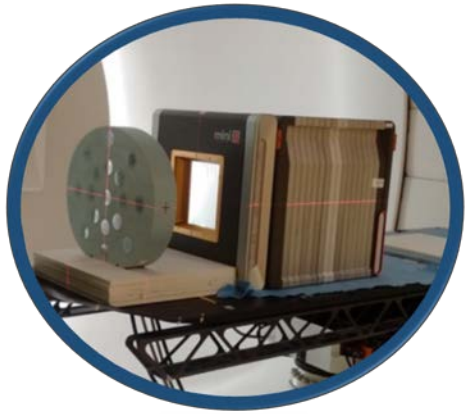
innovation generated by new ideas

| *startups of the Business Incubator* |

University Spin off
2009 -2014

DETECTOR

DEVICES AND TECHNOLOGIES TORINO



Designing and manufacturing ionization chambers for advanced radiotherapy to monitor charged particle therapeutic beams, both during treatments and for daily quality assurance procedures and particle accelerator calibration

NOW APPLIED in **DIFFERENT APPLICATIONS**

- METALS INDUSTRY
- AUTOMOTIVE INDUSTRY
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- CHILDCARE INDUSTRY
- CULTURAL HERITAGE
- ENVINROMENT

www.detector-group.com

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your time matters

| *dedicated industrial liason officer* |

to make navigation within the university fast and effective

Silvia Forno

+ 25 years in University Technology Transfer, International Relations, EU project management

Catyuscya Forestello

+ 13 years in management consulting, start ups operations and EU project management

Francesca Natale

+ 20 years in SMEs support to international business development