



Grenoble INP - UGA

Graduate schools of Engineering and Management



April 2023

GRENOBLE
INP
UGA



A thriving University in the heart of the Alps





Top 150 universities in the world

Shanghai Ranking of World Universities

33rd most innovative university in Europe

Thomson Reuters

Top 50 worldwide in 6 subjects:

Remote sensing, Earth Sciences, Metallurgical Engineering, Physics, Clinical Medicine, Quantum engineering

UGA is **one of 8** universities in France to have the IDEX Label and is recognized as an **internationally competitive centers of excellence** in **higher education and scientific research**



UGA Interdisciplinary Strengths



Sustainable development & society



Health, well-being and technology



Digital Technology

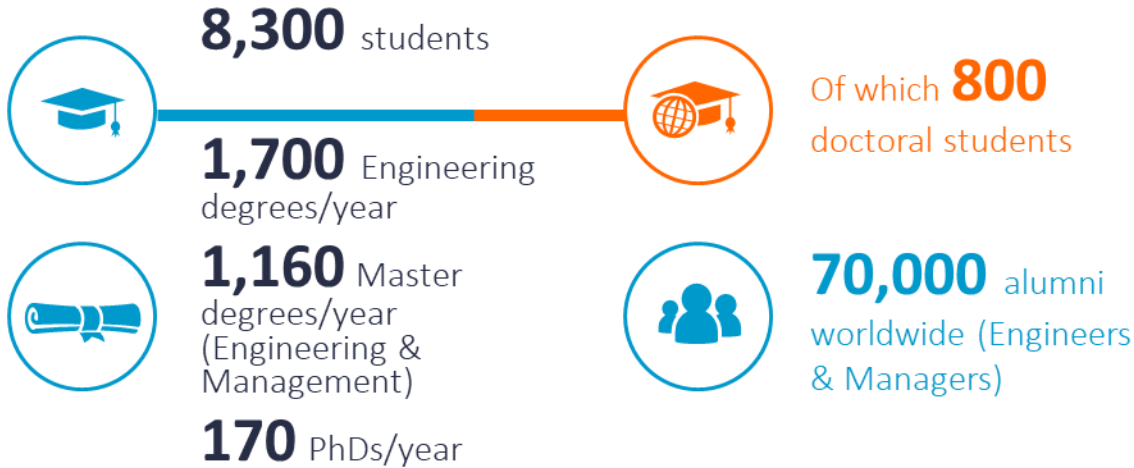


Innovation

- ▶ **59,000** students, of which
 - 35,500** undergraduates
 - 20,600** graduates
 - 2,900** PhD students
 - 10,000** international students



Education



34 Engineering training courses & **53** Master degrees specialities, among which **25** in Management

Fields

- Energy & environment
- Geomaterials & civil engineering
- Materials, bio-based materials & processes
- Micro nanotechnologies
- Digital
- Production, management & organizations

Research



Business



Key figures 2022-2023 Grenoble INP - UGA



Shanghai Ranking 2021

Since 2020, the results of Grenoble INP - UGA contribute to UGA ranking

Global Ranking: World #150

Ranking by subjects:

World Top 20:

- Remote Sensing
(12 - France 2nd)

World Top 50:

- Metallurgical Engineering
(35 - France 2nd)
- Physics
(40 - France 5th)

World Top 75 - France 2nd:

- Water Resources

World Top 100:

- Computer Science & Engineering (2nd)
- Automation & Control (2nd)

World Top 101-150:

- Nanosciences & nanotechnologies
(France 3rd)
- Engineering Electrical & Electronic (2nd)
- Environmental Science & Engineering (3rd)



QS by Subjects 2022

Top 10 France in the field Engineering & Technology:

- **#7 in the global field**
- #5 in Engineering - Electrical & Electronic
- #6 in Computer Science & Information Systems
- #7 in Engineering - Civil & Structural
- #8 in Engineering - Mechanical

Top 10 France in the field Natural Sciences:

- #4 in Materials Sciences
- #7 in Physics & Astronomy

8 schools in Engineering & Management



Grenoble INP - Ense³, UGA
Energy, Water & Environmental
Sciences



Grenoble INP - Ensimag, UGA
Applied Mathematics & Computer
Sciences



Grenoble INP - Esisar, UGA
Advanced Systems & Networks



Grenoble INP -
Génie industriel, UGA
Industrial Engineering &
Management



Grenoble INP - Pagora, UGA
Paper, print Medias &
Biomaterials



Grenoble INP - Phelma, UGA
Physics, Electronics,
Materials Sciences



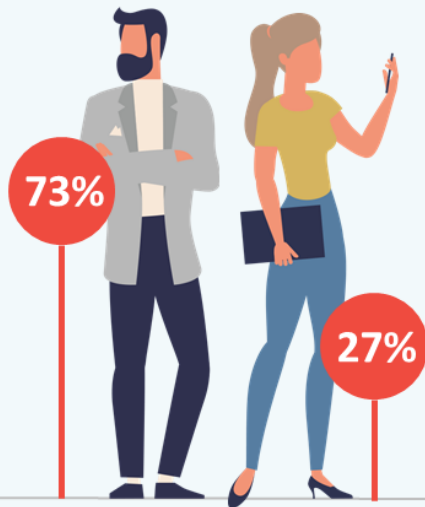
Polytech Grenoble - INP, UGA
7 specialities of Engineering



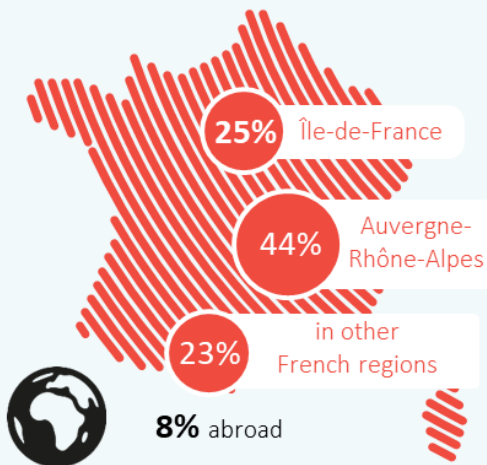
Grenoble IAE - INP, UGA
Graduate school of
management

First job insertion

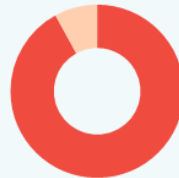
2021 Grenoble INP - UGA engineering graduates



Region of employment



15 days
to get a job



95% executive



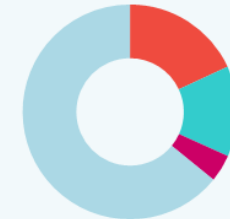
84% permanent contract
(French CDI)



35,950 euros/year
in France

Average salary excluding bonus
(excluding thesis)

Economic sectors of activity

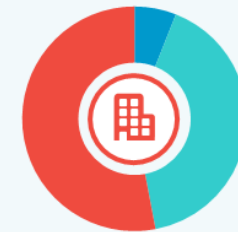


26,9% consulting companies,
research consulting, engineering

25,4% IT activities and services

5,7% Energy

Company size



63% 250 to +5,000 employees

34% 10 to 249 employees

3% less than 10 employees

Data 2022 Enquiree (2021 graduates)

Grenoble, a city in the heart of a dynamic French entrepreneurial ecosystem



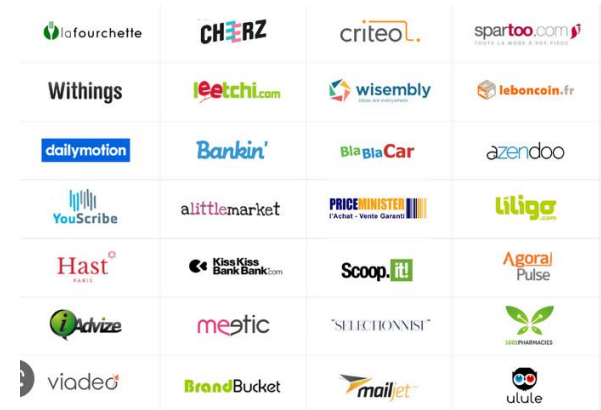
France attractive business ecosystem

- 6th WW economy (*FMI 2023*)
- 2nd largest economy in the Euro zone (*FMI 2023*)
- 1st most attractive country in Europe for industrial foreign investment
- 1st European country for venture capital fundraising
- Strong governmental support
- 28.000 foreign companies in France
- Highly trained and productive workforce (*Grandes Ecoles*)
- Highly creative and innovative workforce
- High quality infrastructure (speed train, highways, airports, hospitals, public schools)
- Robust financial system + best WW research tax credit
- Flourishing “Tech” ecosystem
- Highest demographic growth in Europe
- Excellent quality of life

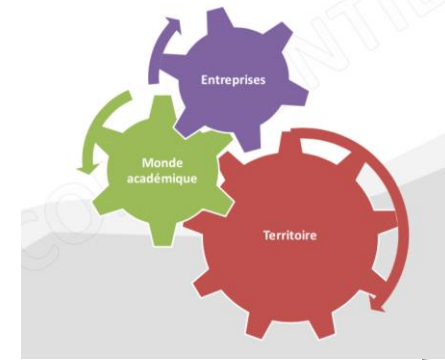


France dynamic entrepreneurial ecosystem

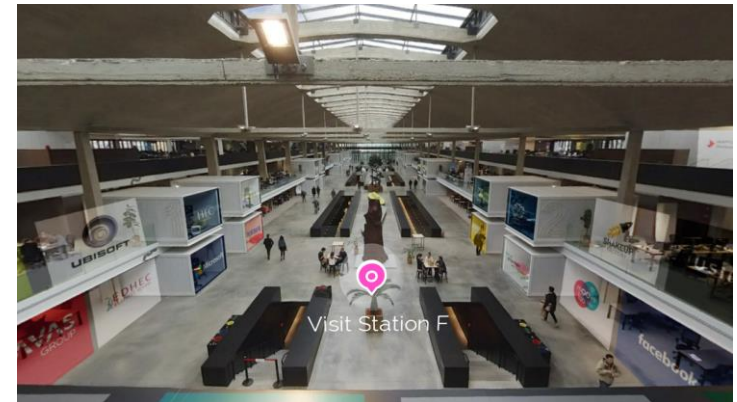
- 1 million start-ups +30% per year ; 50% Ile de France
- 26 “unicorns” (>1 billion value)
- 13,5 billions euros of fund raising by start-ups in 2022 (+17%)
- 1,5 million employees +10% of job creations
- Almost 60 billions euros Public investments over 5 years
- 85 000 companies financially supported by Bpifrance <https://www.bpifrance.fr/>



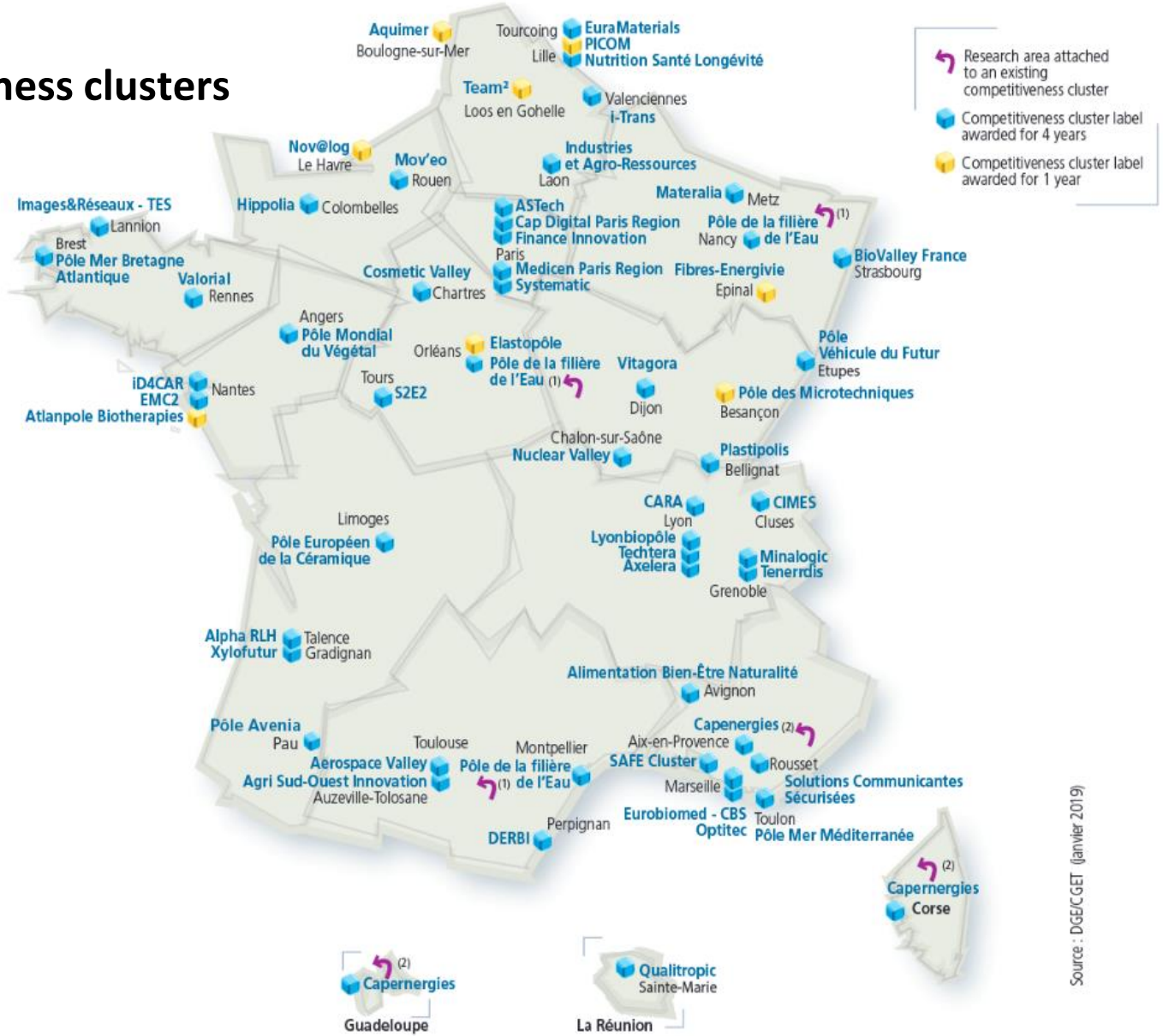
France dynamic entrepreneurial ecosystem



- 240 Incubators ([Station F](#), one of world largest)
- 50 Accelerators ([Le Village by CA](#)
<https://www.euratechnologies.com/entreprises/go-touch-vr-2/>)
- Competitiveness clusters
- Support structures
- Coworking spaces
- Technopoles, Science Parks
- Innovation and Entrepreneurship Centers, part of EBN, EU Business and Innovation Centers) <https://ebn.eu/>
- Bpifrance



56 Competitiveness clusters



Source : DGE/CGET (janvier 2019)

A strong network of supporting structures

- Réseau Entreprendre
- France Business Angels
- French Tech
- To sensitize young people :



<https://www.100000entrepreneurs.com/>; Entreprendre Pour Apprendre

- Initiative France (3 year support : tutoring, financing, counselling)
- CCI /CMA : public services for industry and artisan (compulsory trainings, counselling)
- EGEE : retired senior experts helping entrepreneurs
- Specific for seniors, women, students, SSRE : ADIE, Entrepreneurs dans la ville, Les déterminés, Haut les Femmes, Bouge ta boîte, Ronalpia, Réseau Initiative France, 60000 Rebonds...

Grenoble, city of innovation



- 7.1% of the population works in R&D (2nd in France)
- Most patents filed in France
- 5th most inventive city in the world (*Forbes* 2013)
- In top 50 (*FINOM* 2021)

An exceptional business and scientific environment

■ 5 International laboratories and instruments

- ▶ ESRF, ILL, EMBL, LNCMI-G, IRAM

■ 8 National research organizations

- ▶ CNRS, CEA, Inria, Inserm, Irstea, CRSSA, IRD, CHU Grenoble Alpes

■ Major companies

- ▶ Sun Microsystems, HP, Orange, STMicroelectronics, Schneider Electric, Alstom, Xerox, Thales, Apple (image sensor R&D), CapGemini, SOITEC, Applied Materials, Air Liquide, Solvay, Arkema, EDF, Rossignol, Caterpillar, ARaymond, Alstom Bombardier, Becton Dickinson, Roche,...

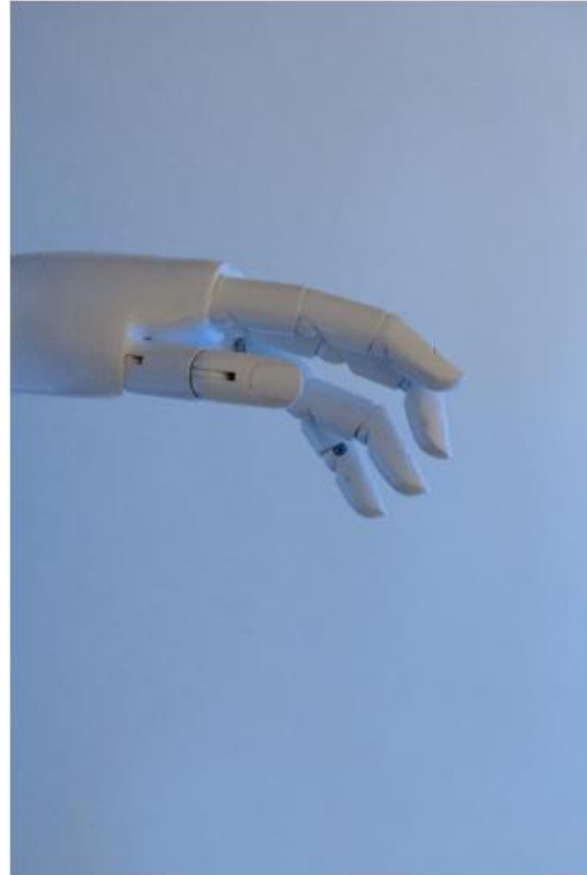
<https://www.investingrenoblealpes.com>

The UGA enjoys a unique opportunity to partner with this rich array of research facilities and industry, producing cutting-edge research and innovative projects



- One of **4 centers** in France for artificial intelligence research
- **55 companies** have already contributed to MIAI with **€5.8 million** per year
- **1,600** scientific articles published by MIAI contributors

<https://miai.univ-grenoble-alpes.fr/miai-institute/miai-grenoble-alpes-institute-799002.kjsp>



The Quantum Engineering project



Building on the **unique concentration of expertises in Grenoble**, the Quantum Engineering Project fosters an **ecosystem for quantum technologies, connecting science, the humanities and entrepreneurship/**

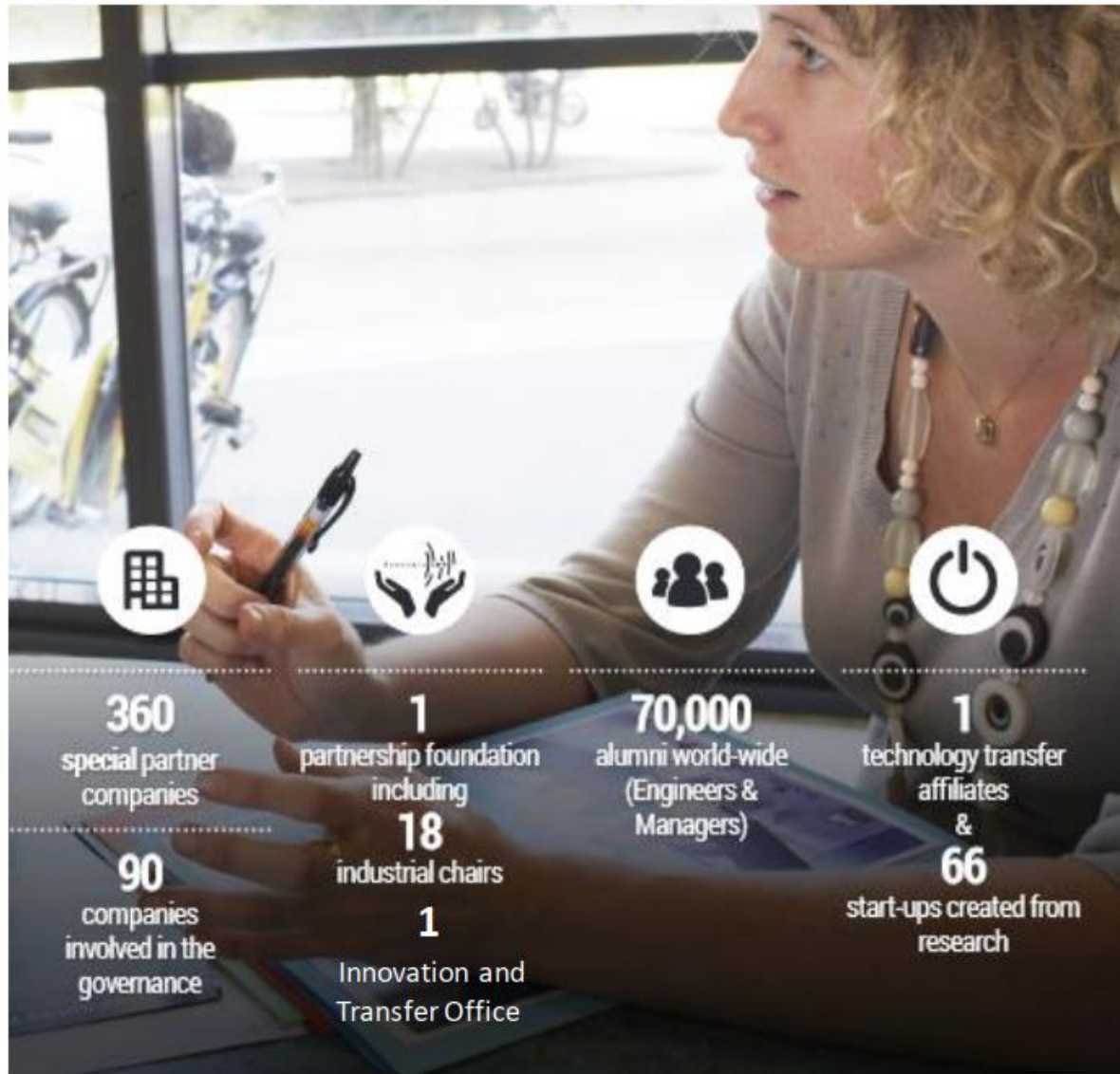
We investigate the whole spectrum of challenges, **from the industrial transfer of a quantum processor to the philosophical and societal implications of quantum theory and technologies.**

Grenoble is recognized as an **outstanding place** to be for its potential and its culture of innovation

- ▶ **340** software products
- ▶ **755** patents filed annually
- ▶ **220** valorisation projects
- ▶ **180** exploitation contracts for 3.7 M€ of exploitation revenues over 2017-2020
- ▶ **20 to 35** start-ups created annually
 - Success stories: **Vulkam** and **BeFC**
- ▶ Over **700** contracts involving companies, including 300 with SMEs and 50 industrial funded PhDs (CIFRE)



Industrial Partnerships



Entrepreneurship at Grenoble INP UGA

CEI, Cellule Entreprise et Innovation is in charge of Entrepreneurship for the 7 engineering schools

- A multidisciplinary team with varied profiles **MANAGEMENT, ECONOMICS, SOCIOLOGY**

Global teaching hours
+ 5 000 h

Between 15 and 20 contractors for 1000H teaching hours

Our Vision

Engineers with **solid technical skills and expertise** and able to respond to **human, social and societal challenges**

The **entrepreneurial spirit** is therefore a key issue :

- Addressed over the 3 years of the curriculum
- 3 goals/steps : raising awareness, training, supporting
- In relationship with the local entrepreneurial ecosystem
- Including entrepreneurship, business takeover, intrapreneurship

1st year : Creativity challenges



- ✓ 270 students (per school)
- ✓ 9 challenges, 36 teams (per school)
- ✓ Coaching by 2 creativity trained teachers
- ✓ Lectures + work in small teams
- ✓ A 3-steps method based on Design Thinking
- ✓ From 10 hours per students to a full week of seminar



TARGETED ABILITIES

- Acquire creativity method (Design Thinking, CPS)
- Think out-of-the box
- Basis of entrepreneurial spirit
- Communication



1st year : Business serious game

- ❑ **Objective** : introduction to strategy, marketing, finance and accounting, human resources and management => basic understanding of Business world
- ❑ **Organization**
 - ❑ Over 1 000 students, 650 hours
 - ❑ Pagora – Ensimag - Ense3 – Phelma
 - ❑ 16 to 20 hours/students during 2 (1/2) days
- ❑ **Method** : team competition based on a business serious game, oral presentation



2nd year 1st semester : Project Management

□ Objective :

Introduce students to project management both on methodological aspects/tools, AND team management **Pédagogie :**

Through a scenario on a real student project or through a simulation

In a nutshell

- 360 hours
- Over 1000 students in 4 engineering schools
- Around 170 projects
- 7 to 8 external speakers with a solid professional experience of project management in business, in IT development and/or in an industrial context
Pratiquement tous les domaines de l'ingénierie : du développement de logiciel aux ouvrages de génie civil, en passant par l'électronique, la mécanique, l'automatique, etc ...
- Close collaboration with school pedagogical teams in their field of engineering

2nd year 1st semester : Elective course

□ Objective :

Introduce students to **Marketing OR Finance and Accounting OR Business Laws**, both on concepts, methodological aspects/tools

Innovative pedagogies

Basis for entrepreneurial projects



2nd year 2nd semester : Elective course

□ Objective :

Introduce students to **Innovation OR Management OR Entrepreneurship**, both on concepts, methodological aspects/tools, based on **real projects**

Parcours Innovation : Learning about the innovation process from the technical object to the business model, by carrying out a project from a Grenoble INP laboratory

⇒ Develop the spirit of innovation

⇒ Master the financial, commercial, technical and human aspects of a venture set up, through a real project

Parcours Management : business strategy to change management, through applied teaching and the study of concrete cases

3rd year Elective : MANINTEC

Management de l'Innovation Technologique

- Innovative project management skills
- Objective: to articulate technology and market

Exploration and creativity / technological analysis and qualification / market study / business model Scenario on a real innovative project

Project / course time alternation

Projects led by companies, start-ups, labs

Innovative pedagogies

Basis for Tech entrepreneurial projects

3rd year Elective: PISTE

Pour une **I**ngénierie **S**obre **T**echno et **E**co Responsable

- **Environmental and socially responsible** project management skills
- Objective:

Develop a systemic vision taking into account planetary boundaries and environmental and societal impacts

Promote an open science approach

Maintain a strong technical and scientific base linked to research

***Innovative pedagogies – project based
Basis for ESRE entrepreneurial projects***



2nd year : Main Entrepreneurial Education program –Elective course

Entrepreneurial education – project based : from **IDEA** to **BUSINESS PLAN**, by developing a team project that will be **TESTED ON THE MARKET**

✓ **PUBLIC CONCERNED**

All 2nd year Grenoble INP students (GI, ENSE3, Phelma, Ensimag)

42 hours

1 teacher/coach for 20-30 students

150 to 250 (1/3 promos) students each year

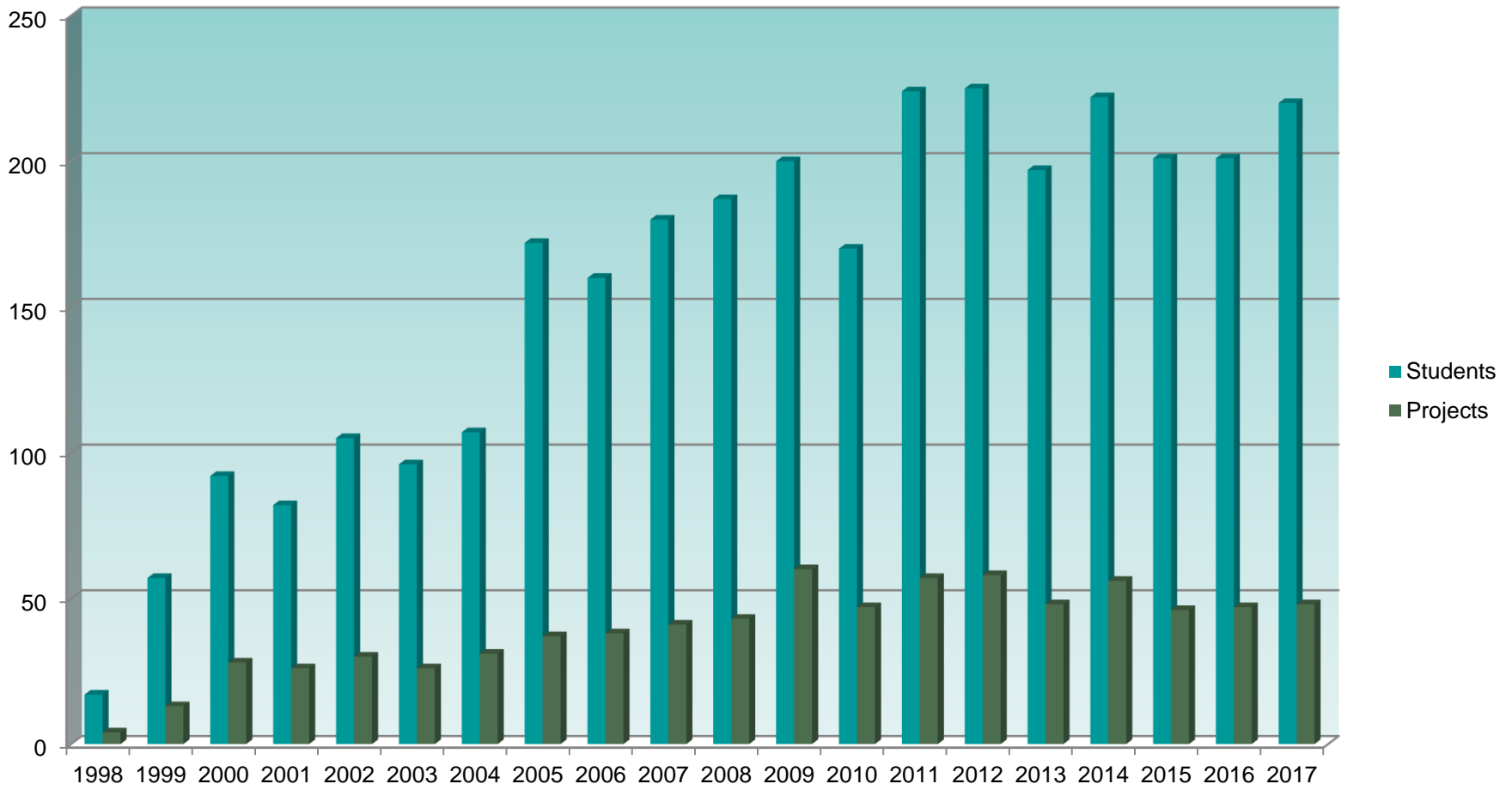
30 À 50 BUSINESS VENTURE PROJECTS

✓ **Skills built**

Entrepreneurial spirit and competencies

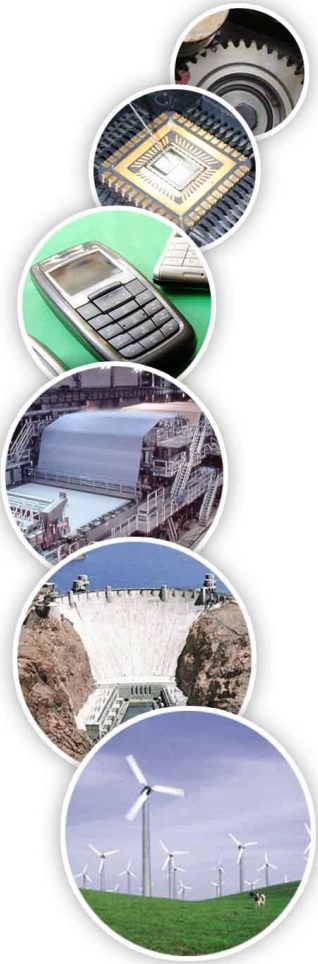
Combined mastery of the financial, commercial, technical and human aspects of the company, through a **REAL PROJECT**

Over 25 years of experience!



Objectives

- Entrepreneurial Mindset
- Business environment deep understanding
- Learning by doing
- Experiential learning based on self developed projects (fictitious or real...or to be real!)
- Teamwork
- Soft skills : communication, leadership...
- Business plan
- Feedback from experts – incubators, investors – and real potential customers



Curriculum : 1st step

From a first idea to a complete business plan and a pitch to potential investors



- Idea, project set-up
- Team management
- Project management

Curriculum : 2nd step

From a first idea to a complete business plan and a pitch to potential investors



- Market study
- Strategy
- Business model

Curriculum : 3rd step

From a first idea to a complete business plan and a pitch to potential investors



- Set up a Business Plan (written report)
- Convince a jury – all entrepreneurial experts and professionals

KEY SUCCESS FACTORS

*Engagement,
Responsibilities*

*Individual
choice of
elective, team
and project*

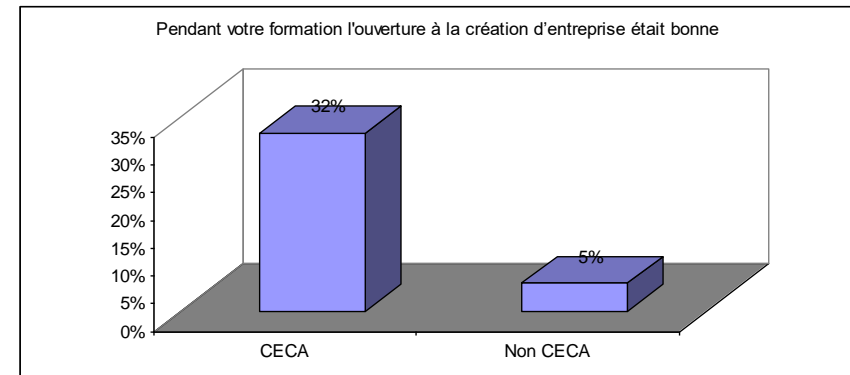
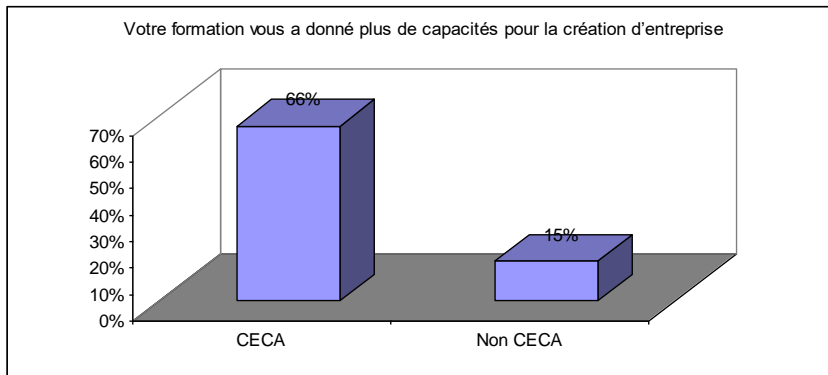
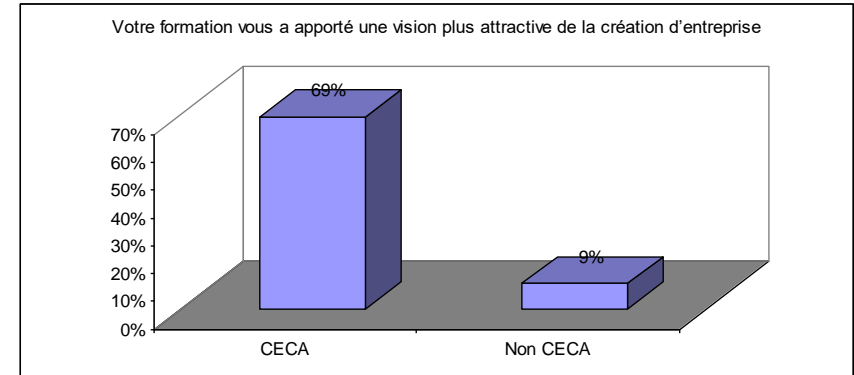
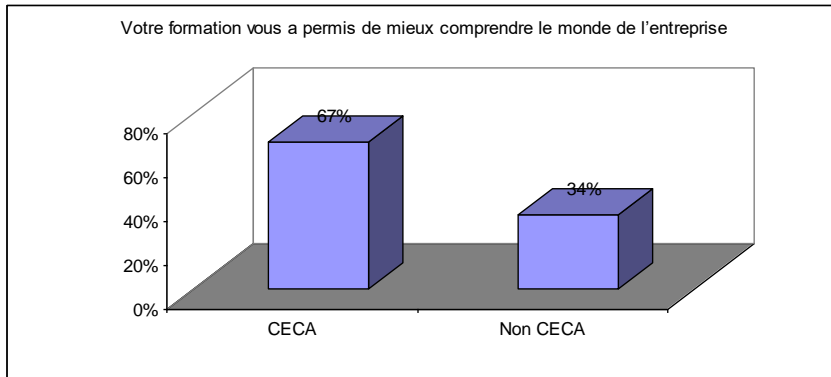
*Motivation,
Participation*



Pedagogical approach

- Key strengths
 - Theoretical up to date content and robust tools/methods: DT, CK, Effectuation, Lean
 - Time 2 Meet : an opening ceremony with all students from all schools, pitch competition and student entrepreneur keynote speaker
 - Expert day : one day to challenge the underconstruction business plans by experts/professionals
 - Jury : mix teachers/professionals
- Multiple choices for further enhancement
 - Manintec
 - Pépite
 - Masteriales
 - Foreign experience
 - PFE (end of school training period)

Opinion on the link between training and business



Startup INP

- H3C-énergies
(CECA 2003)



- Clément Jacquelin Athletics 3D



- Enhancia



Xplora

- Prise de tête **Prise de tête**

Phoenix Mobility



Reveho



Astucix





Our partners

BPI

French Tech in The Alps

Village By CA

Linksium

Réseau Entreprendre

Grenoble Business Angels

Tarmac

Start-Up Week End

Co-Working places

Training

Incubating

Coaching

Funding

Networking

Evaluating

Advising

An ambitious renovation project

- Integrate societal and environmental issues throughout the entrepreneurial process
- Rely on ecosystem experts
- Rejuvenate pedagogy by experimenting: experiential learning + learning journeys + new creativity + KX platform and mindmap
- Feed research networks





Grenoble INP - UGA

Institut d'ingénierie et de management

LEARNING EXPEDITION IN RESPONSIBLE ENTREPRENEURSHIP

Septembre 2022



What, when, for whom?



What is a learning expedition?

PARTEZ
EN
LEX*

* *LEX = Learning Expedition*



Why a learning expedition in Sustainable/responsible Entrepreneurship?



Our Partners

Les Minimes



GRENOBLE
PROJETS
L'ANCIEN COUVENT DES MINIMES

☐ LES MINIMES
PAR TROIS ENTREPRENEURS GRENOBLOIS :
MATHIEU GENTY, MARIE PESENTI ET AURIANE MARSAN





**Center for innovation, transfer and
entrepreneurship for students**

Pépité oZER

PEPITE ?

Pôle Étudiant pour l'Innovation, le Transfert et l'Entrepreneuriat

- **Initiated in 2002** in Grenoble, this pioneering action in France aims to develop the entrepreneurial culture and skills of young people in order to improve professional integration.
- In 2014, the French Ministry of Higher Education defined what these Centers for Innovation, Transfer and Entrepreneurship for students should be. It selected **33 poles in France**, including that of the UGA, which offers actions aimed at all students in the academic district of Grenoble (~100,000 students).
- Its strategic development project is one of the 9 projects of excellence **distinguished by the ministry** during a national call for projects in 2020.
- A team of **9 people**. Approximately 700 k€/year budget.

Three missions

1. Develop the general culture of students:

→ Discover the entrepreneurial spirit.

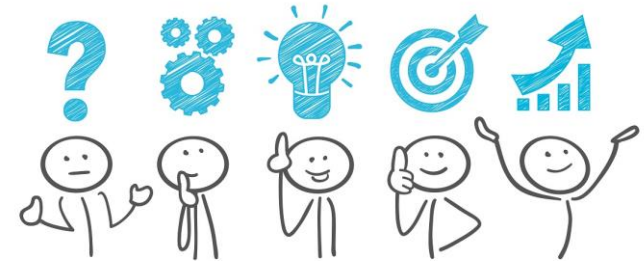
2. Support the acquisition of skills by students:

→ Offer training modules favoring the experimentation of entrepreneurial approaches.

3. Support student initiatives:

→ Allow students to progress in their studies and to develop their business project at the same time.

→ Support initiatives, from the maturation of ideas to the realization of a project.



1. Develop the general culture of students:
Discover the entrepreneurial spirit

Allow each student to discover the idea of entrepreneurship, to identify the collective and personal issues, to understand the basic concepts and mechanisms. For example:

• **Meetings with inspiring entrepreneurs**

- **End of the day monthly mini-conferences : the *Apér'Ozer***
 - Testimonial from an inspiring entrepreneur
 - Pitches from student entrepreneurs currently incubated at PEPITE
 - A friendly networking moment
- **Meetings at lunchtime: The *Midi de l'entrepreneuriat***
 - During the lunch break
 - At the heart of a university school
 - The meeting-testimonial with an entrepreneur of this school
- **A student-entrepreneur forum: *Proj'Expo***
 - At the heart of the campus, a day of exhibition and meeting of students with business projects..

• **Initiation workshops to creative approaches**

- **Example: discovery days**
 - Multi-day workshops involving multidisciplinary teams, in challenge mode, to imagine and design innovative products and services, on an imposed theme.



2. Support the acquisition of skills by students:

Training modules favoring the experimentation of entrepreneurial approaches

Offer training workshops allowing students to complete their course, favoring learning through experimentation on real or realistic cases.

• Immersion programs in the entrepreneurial spirit

- **Intensive programs, 3 to 5 days of seminars with team projects:**
Les Mastérialles, Les Doctoriales
 - Training workshops on basic knowledge and skills (creativity / Validation of the idea / Market study / Business Model / Marketing strategy / Financing plan / Written summary / Oral presentation, etc.)
 - Realistic collective projects, assessed by professionals
 - Support provided by "senior" students from master's programs in "Entrepreneurship"
- **A 3-month program (3h/week) to put yourself in the shoes of an entrepreneur:**
Campus Création
 - Workshops once a week with coaches or experts
 - Training workshops on basic knowledge and skills
 - Realistic collective projects, assessed by professionals



3. Support student initiatives:

Allow to study and develop a business at the same time

Support initiatives, from the maturation of ideas to the realization of a project

➔ Running an incubator at the heart of our campuses.

- Currently, about 150 entrepreneur-students/year (target: 400/year by 2029).
- A national "entrepreneur student" status, awarded by the PEPITE on behalf of the French State (application on file + hearing).
- Build a community of entrepreneur-students and offer individualized support:
 - **Advice and support:**
Mentoring; access to equipment and workspaces (coworking); meetings with experts; access to dedicated competitions...
 - **Integration into business communities:**
Events to forge a group spirit, solidarity, emulation; networking events...
 - **Strengthen one's capacities (knowledge, skills, attitudes, methods, etc.):**
Possibility of accessing courses and training on all types of skills, including outside the university world; access to training-action workshops focused on student projects.
 - **Support to adapt and succeed in studies:**
Facilitate program adjustments or the substitution of the internship by working on your entrepreneurial project.



PEPITE : 4 core measures

1. **Implementation of the culture of entrepreneurship and innovation:**
 - cross learning modules with European credits (ECTS) in syllabus
 - 120,000 students reached per year
2. **The creation of the 1st student-entrepreneur **national** status in the world:**
 - students working on professional projects during their studies
 - graduates, in particular those under 28, who can benefit from the student status
 - 646 students entrepreneurs in 2014/15, and 3,500 in 2017-18
3. **Founding 30 student centers (PEPITEs):**
 - entrepreneurial awareness
 - entrepreneurial training programs coordination
 - support for student-entrepreneurs' projects
4. **The establishment of the PEPITE **national** prize:**
 - 150 regional awards
 - 53 national awards

Thanks for listening!



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