MARS42 - Research Beyond Academia

Objectives: MARS42 is a Summer School for Scientific Changemakers that provides Master of Science students, PhD students and Post-Docs with a guidance for reading research under a new light through a deep dive into scientific companies and startups.

Who is this program aimed to?

MARS42 - Research Beyond Academia is addressed to

- Researchers who want to learn and understand how R&D inside companies works and how it is evolving into open innovation.
- Researchers who want to learn and understand how to start an entrepreneurial journey with their own scientific project or join a startup team.

Methodology: Simulation based training

Simulation based training has multiple advantages, because it is **interactive** and takes place in **real environment**.

Participants **can make mistakes** and easily evaluate the consequence of them. Crisis management can be simulated and observed in different circumstances, in order to let people to be prepared when those events happen in the real life.

Compared to other methodologies, the SBT:

- Has better results in case of complex and applied skills;
- Has a higher return (more learning in less time);
- Allows to simplify the reality in order to make it manageable since the beginning.

Work on a real project, in team:

Each lecture is followed by a practical session where participants have the opportunity to immediately apply what they have learned on a real project, working in team of 4-5 people.
The business idea to work on has to be defined on the first day of MARS42, choosing among the ones proposed by the faculty.
All the proposed business ideas are real case histories of scientific projects.

Learning outcomes:

- Understanding the world of research outside academia, how companies work, what they look for and how they manage Research and Development
- Acquiring the necessary skills to communicate your scientific project to the right audience, in the right way and to brand yourself
- Learning how to apply the "Lean Startup" methodology to develop an Entrepreneurial research project that really meets the market needs, without wasting time and resources.

Schedule

July 10

Activity: Ice breaking and team building
Teacher: Roberto Chinello

Lecture: Introduction to innovation
Teacher: Cosimo Panetta

This lecture is a deep introduction to innovation, focusing on the experimental nature of it, the difference between Innovation "Sustaining" and "Disruptive", how to innovate beyond the product and the topic of "Open innovation".

Questions that will be addressed include:
- What types of innovation exist and how to manage each of them?
- What are the boundaries of the innovation ecosystem?

July 11

Lecture: Market segmentation and "Job to be done"
Teacher: Irene Cassarino

This lecture focuses on the understanding of the real size of your addressable market, the different kinds of customers that your product aims to serve and their real needs.

Questions that will be addressed include:
- Who are you potential customers?
- Why customers should buy your product?
- What is the real need that drives your customers to adopt your solution?

Lecture: Corporate Innovation Strategy
Teacher: Massimo Debenedetti

This lecture focuses on how innovation represents a competitive advantage for corporations and how companies define and manage their innovation strategy.

Questions that will be addressed include:
- What is an innovation strategy?
- How to define an innovation strategy?
- What are the tools needed to manage innovation effectively?
- How the innovation strategy is complementary and functional to the overall corporate strategy?

Working session: Job to be done
Teacher: Irene Cassarino

Speech:
Giovanni Rizzo, Z-Cube (Zambon Group) - Corporate Accelerator

July 13

Lecture: Startup overview
Teacher: Ruggero Frezza

This lecture focuses on what it takes to start a new scientific project as an entrepreneur, what are the dynamics and the stakeholders involved.

Questions that will be addressed include:
- What is a startup and how to start a new one?
- What is the role of the founder as an entrepreneur?
- What are the traits of a successful startup?

Workshop: Future Impacts of Exponential Technologies
Teacher : Cristina Pozzi, Andrea Dusi

This workshop held by Impactscool aims to point out how Exponential Technologies such as AI, Robotics, 3D printing, Blockchain, Biotechnologies, Genetics ... are going to have an impact on our society as we know it and how they can be driven in the right direction starting today. This is a workshop in which the participant will work in small groups a debate about technologies in future scenarios.

Questions that will be addressed include:
- How can we think about the future and understand impacts of new technologies in society?
- How should we address the choices we make today consequently?

July 14

Lecture: Systematic innovation
Teacher: Jose D'Alessandro

This lecture wants to help you tackling problem solving and innovation challenges in a systematic way. A meddling of different techniques with TRIZ methodology at its core, it is a structured brainstorming that can be usefully applied to business as well as technical issues.

Questions that will be addressed include:
- What is the relation between creativity and innovation?
- Can creativity be taught and applied in a structured fashion?
- Where can we look for solutions to our business and technical issues?

Speech:
Massimo Bocchi - Cellply, CEO

July 15

Lecture: Problem/Solution fit validation & Offer validation
Teacher: Cosimo Panetta

This lecture focuses on the first and second steps of validation of a new business idea, and the tools to use along the way.

Questions that will be addressed include:
- Is it a problem worth solving?
- How to build a strong value proposition?
- Which channels to use for promotion?

July 16

Activity: Team management
Teacher: Roberto Chinello

July 17

Lecture: Business modelling & Innovation accounting
Teacher: Enrico Cattaneo

This lecture provides a detailed overview of the different business models - with real examples in the scientific space - analyzes their characteristics and illustrates the KPIs to measure their effectiveness.

Questions that will be addressed include:
-   How to design the business model of a project using the "Business Model Canvas" framework?
-   How to measure the efficacy of a business model in a pre-revenue phase?

Speech:
Alberto Giusti, Crowdfunding for science

July 18

Lecture: Digital go to market
Teacher: Alberto Giusti

Define your target market size with Digital Analytics and structure a full stack Sales & Marketing plan. Logics and digital tools for the engagement, promotion and sale of products and services on the market.

Questions that will be addressed include:
-   How to set up a Digital Analytics Infrastructure and a Measurement Plan?
-   How to design a digital market experiment?
-   What is the right Inbound Marketing strategy for your project/product?

Speech:
Daniel Paz, Amazon - Economic benefits of cloud computing

July 19

Workshop: Negotiations founding your startup
Teacher: Daniel Paz

Negotiations are an important part of founding a hi-tech startup. Each of us has a certain style to deal with situations where an agreement with someone else is needed in order to reach somewhere we believe is better.

In this workshop we will explore and practice our unique negotiations style and search for ways to improve it.

Questions that will be addressed include:
- What are the necessary tools to help researchers develop a strategy for some business dilemmas that require them to negotiate on their way to found their startup?
- What are the models of the building blocks of negotiations?

Speech:
Anna Boffetta, Balderton Capital - How to fund an innovative project

July 20

Workshop: Pitch your research to industry
Teacher: Cristina Rigutto

This interactive workshop is designed to help researchers improve their communication skills and effectively pitch their research project and its value to potential business partners or investors.

Questions that will be addressed include:
- How to frame a compelling opening to get the audience connected and ready to listen?
- How to draw a chart that helps the audience visualise what is most important?
- How to use body language and vocal delivery to have your intended impact?

July 21

Demo Day
This is the final day of the Summer School and students test their ability to present the project they have been working on during the two weeks in front of the MARS42's panel composed of managers, investors and entrepreneurs, in addition to faculty members, mentors and all the other students.

In addition to the lectures and speeches:

Every day there are 1:1 mentorship sessions where students can book a meeting with mentors to discuss:
- any aspect of the group project they are working on
- insights and clarifications about one specific topic discussed during the lectures
- if they have one, any aspect of their own research project (the one they described during the application process for MARS42)

Other activities for the students during the Summer School:
- Site visits
- Networking events
- Dinners with guests