

A woman with long dark hair is sitting on a stone ledge, looking down at a laptop on her lap. She is wearing a white sleeveless top and blue jeans. A black bag is slung over her shoulder. The background is a wooden building with vertical planks.

Are you REDI?

REDI is a PhD training program like no other: 40+ industry-supported positions, most awarded two PhDs, once-in-a-lifetime year in Melbourne, Australia, annual training weeks in Barcelona, Spain, excellent salaries, access to 60+ partners...



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 101034328

rediprogram.eu

Position Description

Group of research topics: New Aero and Space Technology Research

Position is funded by	<ul style="list-style-type: none"> - COFUND, Marie Skłodowska-Curie Actions (MSCA), Horizon 2020, European Union - BOGGI Aeronautics SRL, Italy - RMIT University (RMIT), Australia
Research Host	BOGGI Aeronautics SRL, Italy
PhD awarding institution/s:	Dual PhD awarded by University of Bologna (UNIBO), Italy and RMIT
Locations	<ul style="list-style-type: none"> - Primary: Arceto di Scandiano, Italy - Secondary: Melbourne, Australia - Annual workshops in Barcelona, Spain
Contract	Full time, 3 rd level (36 months)
Gross annual salary	29.078 EUR per year approx. (gross amount before employee's taxes and contributions)
Preferred start date	01/03/2022
Deadline for applications	30/11/2021 (Reference: BOGGI-DC1)

Your choice of research topics (only one of these projects will be funded):

Project 1: Unmanned Aerial System for commercial operations	Project 2: Electric Hybrid General Aviation Aircraft	Project 3: Smart Space structures
<p>The development of Unmanned Aerial Systems is at a mature stage where regulation plays an important role in further advances. EASA certified autopilots, lightweight structures, reliable dynamics simulation models, automated image analysis from payload video stream, telecommunication systems for BLOS operations, environment for mission planning, application of artificial intelligence are worth of investigation in the near future. These technologies could be tested on the Boggi's Eagle Scan UAV. <i>Further information may be obtained from the Supervisors.</i></p>	<p>The need for preserving the environment is pushing aviation towards a more sustainable approach to travel. However, nowadays electric technologies can only assure low endurances and a realistic approach to the green transition could be the hybrid aircraft concept in General Aviation. The development of a methodology to design hybrid aircraft in compliance with EASA rules deserves a deep investigation. A market analysis, the use of flight simulators and the development of dynamics models are part of the work. <i>Further information may be obtained from the Supervisors.</i></p>	<p>Space structures must be lightweight and sustain high vibrations during the launch. Therefore, innovative optimized structures must be developed, based on recent manufacturing technologies and new materials. On the other hand, NASA, ESA and Australian Space Agency regulations must be considered in the development of these structures to allow further introduction into the market. CAD and FEM tools can support this effort and reduce the need for experimental tests. <i>Further information may be obtained from the Supervisors.</i></p>
<p>Supervisors: MSc. Stefano Boggi (BOGGI) and Prof. Pier Marzocca, Prof. Cees Bil (RMIT) and Prof. Alessandro Ceruti (UNIBO)</p>		

Research Fields: Aerospace engineering and aviation, Environmental and sustainable engineering, Artificial intelligence, Telecommunications engineering, Computer and network engineering	Research Fields: Aerospace engineering and aviation, Environmental and sustainable engineering, Electrical and electronic engineering, Sustainability and urban planning, Project management	Research Fields: Aerospace engineering and aviation, Environmental and sustainable engineering, Advanced manufacturing and mechatronics, Digital design, Industrial design
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REDI

The REDI (RMIT European Doctoral Innovators) program is a unique opportunity offering excellent PhD conditions including enviable international experience, top-class research discipline and transversal skills training as well as networking with academic and industry leaders across 60+ supporting partners and 12 countries.

As a REDI researcher you will be:

- enrolled by two entities, with the chance to be awarded dual doctorates and gain alumni status from multiple institutions, including the Marie Curie Alumni Association.
- seeing the world and spending a year at RMIT University in Melbourne, Australia (ranked in the top 20 of universities under 50 years old in the world).
- part of a rich multidisciplinary network of researchers and supervisors who come together in annual, week-long training events in Barcelona.
- working closely with industry and gaining experience with the 40+ leading companies supporting the program.
- earning a salary above national standards for doctoral positions with full social security benefits (with further support available for eligible researchers with additional needs).
- receiving support and guidance from two highest-calibre, experienced supervisors with high PhD completion rates.
- enhancing your career prospects through comprehensive technical and transversal skills training from leading institutions, intersectoral and international experience and mentoring.
- working on innovative and exciting projects of high commercial and societal value with up to four years to complete your research.

For more information visit: rediprogram.eu

Are you REDI? (Expected Profile)

Project 1

Your background and skills: You should possess the following abilities: radio-control model pilot; skilled with Arduino and electronic board programming; skilled in CAD modelling and manufacturing technologies for composite materials; basic programming skills in c++ (or Matlab/Octave).

Your work experience: Professional experience is welcome but not required.

Your research experience: Research experience is welcome but not required.

Project 2

Your background and skills: You should possess the following abilities: Basic knowledge of Aircraft design methodologies; skills in CAD, FEM and CFD software; basic knowledge of certification process in aeronautics; General Aviation/ultralight pilot; flight simulation.

Your work experience: Professional experience is welcome but not required.

Your research experience: Research experience is welcome but not required.

Project 3

Your background and skills: You should possess the following abilities: CAD modelling; FEM analyses (static, dynamics, PSD and random analysis); design for lightweight and additive manufacturing structures; knowledge of main problems related to space operations and products certification.

Your work experience: Professional experience is welcome but not required.

Your research experience: Research experience is welcome but not required.

Employment Benefits and Conditions

BOGGI offers a 36-month position, extendable up to 48 months in duly justified cases. The position will be based in Arceto di Scandiano (Italy). International travel is foreseen, including to Australia (up to 12 months) and Spain (one week per year). There is no probation period and there are 40 working hours per week.

The remuneration, in line with the European Commission rules for Marie Skłodowska-Curie grant holders, will consist of a gross annual salary of est. 29.078 EUR gross per year (gross amount before employee's taxes and contributions). Of this amount, the estimated net salary* to be perceived by the Researcher is est. 1.490 EUR per month. However, the definite amount to be received by the Researcher is subject to national tax legislation. For more information on the estimated net salary, please use the [net salary calculator](#).

**Net salaries can fluctuate in accordance with an individual's personal circumstances (marital status, age, disability, family and dependents, etc. The above indicative net salaries offer an approximation of what a single person in their early 20s could expect to receive in their bank account after taxes.*

Benefits include:

- Approximately 20 days paid holiday leave
- Sick / injury leave
- Parental leave
- Social security contributions
- Family allowance as per Italian law
- 1,000€ yearly travel allowance to cover flights and accommodation to participate in the annual workshop at RMIT Europe in Barcelona (Spain)
- 10,000€ allowance to cover flights and living expenses for up to 12 months in Australia

REDI to apply? First a little more about us...

Boggi Aeronautics

Boggi Aeronautics is a certified EASA Part 21 DOA and POA (Design and Production Approvals) established in 1999. The team employs experienced aerospace, mechanical, and electrical engineers that apply creative conceptual approaches to tackle complicated integration challenges in the aviation field. Boggi Aeronautics works with several partners, and it is active as an equipment integration development centre for special missions with STC approval capability. Medical equipment installations for heli/aero-ambulance, detection systems, cameras integrations, aerial work systems (helibasket, pilot improvement visibility systems), repairs/modifications, UAVs, infant incubator for Helicopter Emergency Medical Services, airborne COVID-19 proof bio-containment are some of the Boggi Aeronautics' products. Boggi activity of design and certification of changes focus on providing solutions and proposals to customers, starting from their needs, until the approval of the change under EASA rules.

Boggi offers to their Researchers a wide range of training and mentoring opportunities, including:

- **Mentoring program:** Boggi Aeronautics staff including PhD and MSc Engineers will support the PHD student providing guidelines and support to her/him. The candidate will be supported in logistic problems as well. Likewise, at University of Bologna each PhD student is coached and mentored by a supervisor whose duty is

to counsel and guide the student in carrying out his/her research activities. Furthermore, the University of Bologna offers a mental health service that is available for all students free of charge.

- **Courses and training opportunities:** Boggi Aeronautics staff participates to training events, often EASA certified.
- **Cultural and social activities:** Company team lunch is offered once per year. Likewise, UNIBO offers sport activities and discounts for museums, cinemas and other cultural initiatives.

For more information, visit: <https://www.boggiaeronautics.eu/>

RMIT

RMIT is a global university of technology, design and enterprise, ranked in the top 20 of universities under 50 years old in the world. World-class people, leading edge resources, collaboration with industry partners and multi-disciplinary approaches are just a few of the trademarks of research at RMIT, which boasts almost 90,000 students and campuses in Australia, Vietnam, a centre in Barcelona, Spain and research and industry partners on every continent.

As Doctoral Student at RMIT you will be able to benefit from a wide range of training and mentoring opportunities including:

- **The PhD Up** program offering a huge range of workshops, seminars and short courses to build research knowledge and skills, including research writing, publishing, research methods, ethics, project management and careers (see more at: <https://www.rmit.edu.au/students/student-essentials/information-for/research-candidates/enriching-your-candidature/phd-up-program>)
- **RMIT PhD Online Modules**, designed specifically for PhD students, including *Researching your literature review*, *Writing a research proposal*, *Choosing where to publish*, *Writing for Publication*, *Research Integrity*, etc.
- **RMIT Creds**, RMIT's Digital Credentials Platform, which includes over 80 credentials covering a wide range of topics such as *Understanding Responsible Research and Innovation*, *Academic Integrity Awareness*, *Emotional Intelligence*, *Diversity Matters*, *Agile Ways of Working*, *Why Gender Matters*, *Cross Cultural Communications*, etc. (see more at: <https://www.rmit.edu.au/study-with-us/levels-of-study/short-courses>);
- **The e-Grad School**, the online learning modules of the Australian Technology Network (ATN) of Universities' covering a multitude of transferrable skills such as *Critical and Creative Thinking*, *Leadership and Communication*, *Entrepreneurship*, *Research Commercialisation*, *Public Policy*, etc.
- **The RMIT Mentoring platform** also gives you access to mentoring from trained professionals and experts, including:
 - o *Career Mentoring* - career guidance from industry professionals from all disciplines and global locations.
 - o *Women@RMIT Mentoring* - career guidance from industry professionals who are committed to gender diversity and equality in the workplace (especially for female students in male dominated industries)
 - o *Pride Mentoring* - a chance for students who identify as LGBTIQ+ to receive professional and social guidance from industry professionals who also identify as LGBTIQ+ or are familiar with the additional challenges these groups face in the workforce.

Find out more: rmit.edu.au

UNIBO

The origins of the University of Bologna go way back - to its founding in 1088. It is considered to be the oldest university in the Western world and its history is intertwined with that of the great names of science and literature. In the Academic Year 2019/20, 87,590 students have chosen the University of Bologna, making it the most popular university in Italy. The University offers over 230-degree programmes, including 68 international programmes delivered entirely in English, and 48 PhD programmes. Among these, the PhD Programme in Aerospace Science and Technology represent one of the most recent and innovative entries.

UNIBO offers to their Doctoral Students a wide range of training and mentoring opportunities, including:

- **Mentoring program:** Each PhD student is coached and mentored by a supervisor whose duty is to counsel and guide the student in carrying out his/her research activities. Furthermore, the University of Bologna offers a mental health service that is available for all students free of charge. <https://www.unibo.it/it/servizi-e-opportunita/salute-e-assistenza/servizio-di-aiuto-psicologico-a-giovani-adulti-sap>
- **Courses and training opportunities:** The PhD course provides a training programme with academic and professional purposes. It develops the candidate's ability to carry out research and projects in an independent, systematic and in-depth approach through specialist courses and seminars.
- **Language courses:** The Language Centre (CLA) provides Italian language courses for international students attending the university. The costs is free for first course. More details: <http://www.cla.unibo.it/corsi/italian-language-courses-for-foreigners/italian-language-courses-for-foreigners>.
- **Relocation support:** The University of Bologna offers support for finding accommodations. See more at <https://www.unibo.it/en/services-and-opportunities/study-grants-and-subsidies/housing-and-residences>
- **Cultural and social activities:** UNIBO offers sport activities and discounts for museums, cinemas and other cultural initiatives. See more at: <https://www.unibo.it/en/services-and-opportunities/studying-and-beyond>
- **Further benefits:** Access to libraries and scientific journals / websites with UNIBO subscription. Discounts are guaranteed for UNIBO students in shops with agreements.

For more information, visit: <https://www.unibo.it/it>

A little more about you...

Eligibility

You need to fulfil criteria of the REDI program and both universities to be recruited.

To apply for REDI, you must comply with the MSCA-COFUND eligibility criteria by the application deadline:

- **Be in the first four years (Full-Time Equivalent (FTE) research experience** of your research career and not yet have been awarded a doctoral degree. FTE Research Experience is measured from the date when a researcher obtained the degree entitling him/her to embark on a doctorate, **AND**
- **Not have resided or carried out your main activity (work, studies, etc.)** in the country of your research host for more than 12 months in the 3 years immediately before this call's deadline. Time spent as part of a procedure for obtaining refugee status under the Geneva Convention (1951 Refugee Convention and 1967 Protocol), compulsory national service and/or short stays such as holidays is not taken into account.

AND the following criteria:

- **Hold a bachelor's degree requiring at least 4 years of full-time study** in a relevant discipline awarded with honours and including a research component; **OR**
- **Hold a master's degree that includes a research component** or a master degree without a research component with at least a high distinction average; **OR**
- **Have evidence of appropriate academic qualifications and/or professional experience** demonstrating that the applicant has developed knowledge of the field of study or cognate field and the potential for research sufficient to undertake the chosen project.

AND

- Have **English level C1 language proficiency**.

In addition to the above, if your application is successful, you will be required to:

- Apply for a working visa in Italy (More information: <https://vistoperitalia.esteri.it/home/en>)
- Apply for a student visa in Australia (More information: <https://www.rmit.edu.au/study-with-us/international-students/apply-to-rmit-international-students/student-visas/apply-for-a-visa>)

In addition to meeting the eligibility criteria for the REDI Program, you will also need to meet the admission criteria of both academic institutions:

Admission at BOGGI

As part of the admission at BOGGI, you will need to supply:

- Degree certificate and transcript of records of a Master of Science diploma or certificate, from the University issuing the grade. The minimum qualification that candidates must hold to be eligible for this position is a MSc. in Aerospace Engineering.
- Candidates with a foreign academic degree should present Certification from issuing University in English (or translation certified by Embassy / Another recognized agency).
- Proof of English proficiency (certificates from IELTS or Cambridge English Advanced, level C1 is expected – native speakers are exempt from the certificate requirement).
- Motivation of the candidate; Scientific/Working experience in aerospace engineering, both in companies and universities/research centres; Technical competence; proficiency in the use of CAD, FEM, CFD tools; basic knowledge of the Italian language are considered as well.

Admission at UNIBO

You will be enrolled as Doctoral Student at UNIBO for the entire duration of the assignment. At admission, you will need to supply:

- Degree certificate and transcript of records of a second cycle degree such as a MA or a MSc conferred by Italian or non-Italian institutions and recognized as equivalent to an Italian degree. Qualifications are accepted if written in Italian, English, German, French or Spanish. Otherwise, candidates must present a certified translation of their qualifications in Italian or English.
- Candidates with a foreign academic degree (MA or MSc) must attach to their application their degree certificate (including the list of the exams taken). In order to apply, candidates must hold a second cycle degree and submit to the Admission Board their ID and curriculum vitae.
- In some cases, the submission of an innovative research project may also be required. Other skills and proficiencies obtained through education, training, work, volunteering and internships may be taken into account, together with any scientific paper published on peer-reviewed journals.

More information: <https://phd.unibo.it/dast/en/admission/who-can-apply>

Admission at RMIT

You will also be enrolled as Doctoral Student at RMIT for the entire duration of the assignment. At admission, you will need to supply:

- CV
- Complete transcripts for all academic qualifications
- Research proposal or statement of interest in an available research project



- Language certificates
- List of referees

More information: <https://www.rmit.edu.au/research/research-degrees/how-to-apply>

Apply now (<https://www.rediprogram.eu>)

