

PhD 8 How to mitigate fire propagation in Wildland-Urban Interface vegetation and impact on building; IRSTEA, France

Do you have a genuine interest in landscape fires and resilience? Are you up for an interdisciplinary challenge, looking and learning beyond your own field and assumptions? With a international team that is inclusive, collaborative, creative and open minded? Then we are looking for you!

15 PhD positions in PyroLife Innovative Training Network on integrated fire management

The 2018 wildfire season was a glimpse of what to expect in the future: deadly mega-fires in Mediterranean regions and high fire activity in temperate and boreal areas outside the typical Spring fire season. We cannot solve this challenge with the old mono-disciplinary approach of fire suppression: there is a critical need to change fire management from fire resistance to landscape resilience: Living with Fire. This requires a new type of diverse experts, who not only understand fire, but who are also able to communicate risks, deal with uncertainty, and link scientific disciplines as well as science and practice.

The new Innovative Training Network PyroLife will train the new generation of interdisciplinary experts in integrated fire management, acknowledging that 1) knowledge transfer from southern Europe (and worldwide) to temperate Europe can support the new generation of experts; and 2) fire risk planning, communication and management can learn from cross-risk lessons including temperate European expertise in water management. In doing so, this project combines how the North solves community problems with the fire knowledge of the European South.

15 PhD positions

We are hiring 15 PhD candidates across Southern and Northwest Europe and across a range of scientific disciplines, from social sciences and policy to environmental sciences and engineering. We are looking for a diverse group of creative and open minded Early Stage Researchers who are able to link innovative science to society, and communicate with media, stakeholders, and policy makers. These 15 positions are open at 6 universities, 2 research institutes, a foundation and a company across Southern and Northwest Europe. For an overview of all positions, please visit <https://pyrolife.lessonsonfire.eu/>

Topic description

Given the increase in fire occurrence in Wildland-Urban Interfaces (WUI) expected with the global change, the objectives of this PhD project are to better understand how the WUI vegetation can affect buildings during these fires and to provide guidelines to mitigate this risk. The expected results are the spatial distribution of WUI vegetation and its characteristics in study cases in Southern and temperate Europe, the assessment of ornamental vegetation flammability as well as that of flammable organic material close to homes, and the modelling of fire behavior which are needed to design European guidelines for firewise landscaping. Results will guide design of defensible space in the European wildland urban interface, regarding species selection and distribution around buildings, and thereby help fire-resilient landscaping and decrease home vulnerability.

Most of the PhD work will be carried out at Irstea Aix-en-Provence but several months of secondment will take place abroad (such as at the Wageningen University in the Netherlands).

We provide

- A PhD position in the diverse PyroLife training network together with 14 other PhD candidates that study landscape fire using an integrated approach.
- A strong, engaging, collaborative and inclusive network of academics and practitioners
- The first doctoral training program on integrated fire management worldwide, with research, collaboration and training focused on understanding fire, risk communication, integration across disciplines, scales, sectors, and countries, and personal development
- Enrolment in a fully-funded PhD program
- Team up with other PhD students in the network that work in other risk communication topics.
- Research including an applied traineeship that will provide hands-on experience to work with communities located in areas with a high and/or new risk of wildfires.
- Become part of a dynamic team, that works with and for the fire community and society.

Skills desired

Specific

- highly motivated and skilled PhD candidate

- recent university MSc degree in environmental sciences or combustion sciences, with a strong computational fluid dynamics (CFD) modelling-related background.
- experience in both, laboratory burning experimentation as well as CFD modelling, e.g. Fire Dynamic Simulator (FDS) or Wildland-urban interface Fire Dynamic Simulator (WFDS) and have skills in using geographical information system tools (ArcGis or QGis).
- A skill in ecology/botany would be a plus.

General

- A genuine interest in landscape fire and resilience. Experience with (the management of) fire, forests, water, storms or other risks is appreciated;
- Ambition to obtain a PhD degree, and become a scientific expert able to convert knowledge and ideas into products and services, for social and economic benefit;
- Good communication skills and good proficiency in English (both oral and written);
- Willingness to (learn how to) communicate risk, make inter- and transdisciplinary linkages;
- Willingness to travel including moving to another country for the PhD project, completing two 4-month secondments in Europe or abroad, and travel to international training courses and any fieldwork;
- Ability to function as a team member, work independently and take responsibility for own research goals.
- Meet the mobility and early stage researcher requirements defined for the MSCA-ITN projects.

Mobility and early career requirements

Applicants should comply to the EU rules regarding ITN projects:

(https://ec.europa.eu/research/participants/data/ref/h2020/other/guides_for_applicants/h2020-guide-appl-msca-itn_en.pdf). The most important rules are that you should not have a doctoral degree, have obtained your Master degree within the last four years (full-time equivalent research experience) and should not have spent more than 12 months of your time during the last 3 years in **France**.

Employment conditions (Beneficiary-specific)

We offer a full-time position, initially for 2 months after which a go/no go decision will be taken on extension with another 34 months.

Gross salary per month is € 3784 for a fulltime appointment.

About the employer (Beneficiary-specific)

The national Research Institute in sciences and technologies for environment and agriculture (IRSTEA), formerly known as Cemagref, is a public research institute in France focusing on land management issues, water resources and agricultural technology. The Research Unit RECOVER is located in Aix-en-Provence (Southeastern France) and focuses on natural hazards and vulnerability. The team RECOVER-Mediterranean Ecosystems and risks investigates the following research areas: Mediterranean ecosystems functioning, impact of perturbation on (drought and fire) on ecosystems, fire risk analysis and impact of global change on fire risk. The research of the team is multidisciplinary (forest ecology, fire ecology, remote sensing, risk analysis) and ranges from the laboratory scale (burning experiments) to the landscape (land management) via the field scale (field studies).

More information

For more information about this position please contact Dr Anne Ganteaume and Dr Marielle Jappiot:

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How to apply

- Submit motivation letter and a CV
- Use template for motivation letter at <https://pyrolife.lessonsonfire.eu/> that outlines four topics we expect you to cover, and that also includes a form to show your eligibility for the program in terms of early stage researcher and mobility requirements
- Job announcement open for 28 days - deadline: December 2nd, 2019.