

STudent REseArch Mobility Programme (STREAM) Project proposal



Host University:
Université Paris-Sud

Field (drop-down list):

Select a field

Specified field, subject:

Biochemistry; analytical chemistry

Research project title:

Why are some proteins so sensitive to oxidative stress?

Possible starting month(s):

| | | | | | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| Sep | Oct | Nov | Dec | Jan | Fev | Mar | Apr | May | Jun | Jul | Aug |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Possible duration in months:

| | | | | | | | | | | | |
|--------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Alternatively, exact starting and end date: from date to date

Suitable for students in: Bachelor level Master level

Prerequisites:

Bachelor in biochemistry or analytical sciences, an experience in mass spectrometry would be an asset

Restrictions:

Description (maximum 2,000 characters):

It is now beyond doubt that free radicals processes in proteins are involved in all steps of life, from cellular signalisation and the defense against oxidative stress to ageing and a great number of pathologies. Proteins demonstrate a wide variety of scavenging capacity of oxidative radicals but this diversity has been scarcely studied. To understand why some proteins are so sensitive to oxidative stress is the objective of this internship. To address this question and in order to identify some of the key parameters in this process, proteins and peptides will be submitted to several biologically relevant oxidants such as hydroxyle radical or superoxyde anion, produced selectively and quantitatively by radiolysis. Radio-induced damages will be analysed by biochemical and physico-chemical techniques (spectroscopies, electrophoresis, HPLC, mass sepectrometry, ..). A connection will be established with the structural protein properties and biological activities. Depending on the candidate's background and interest, the project could be extended to cellular biology to investigate the relevance of the identified damages in living cells (fluorescence microscopy, western blot).



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Faculty and/or Department:

Laboratoire de Chimie Physique (LCP), Equipe "Rayonnements ionisants biosystèmes"

Contact person, including position:

Séverine Fogel, Head of International Relations

**Contact email:**

severine.fogel@u-psud.fr

Deadline for nomination to reach host university:

2 months before the starting date

Notification of admission given by the end of:

Within 3 weeks

Additional information:

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