

**Ifremer PhD proposal:
Determinism of the recruitment of the oyster (*Crassostrea gigas*)
along the French coasts: how to predict the spat fall?**

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Duration : 3 years (expected)

Location : Ifremer Argenton (<http://www.ifremer.fr/argenton/>), France

Deadline for application : 23 May 2007.

Abstract :

For the past ten years, the spat fall of the oyster (*Crassostrea gigas*) in France exhibited large annual fluctuations, e.g. with almost no natural spat in 2002, and conversely massive quantities of natural oyster spat in 2003. Because of this interannual variability in spat fall, the oyster industry may encounter strong difficulties to supply in natural seed. Thus, the causes of interannual variability in recruitment of *C. gigas* must be identified. In Arcachon and Marennes-Oléron basins, a great part of this variability seems to be due to climatic factors, whereas climatic change has been demonstrated (+1.5°C in 20 years) : water temperature, salinity and phytoplankton abundances appears to be key-factors in the regulation of the gametogenesis cycle, the intensity and the synchronism of the spawning, and the larval stage duration. These facts need to be ascertained on new years, new sites and in a more deterministic way: this is the main objective of this PhD. More precisely, a task of this project is to build a bioenergetic-based model valid from the larvae to the adult. This model should be able to analyse and predict the effect of environmental factors on gametogenesis, spawning and larvae performances. In that context, one of the main deliverables of this PhD is to produce short term and mid term predictions for the intensity of incoming recruitment for several French basins.

Keywords: spat fall, recruitment, bivalve, *Crassostrea gigas*, ecophysiology, dynamic energy budget model, DEB, climate change

For more details about the call, please look at:

http://www.ifremer.fr/ds/animation_scientifique/bourses/doctorales/appel/index.html