

# Séminaire



CONFÉRENCIER  
INVITÉ

Vendredi 13 Septembre 2019 à 11h

Salle des  
séminaires

Institut de biologie structurale - 71 avenue des Martyrs CS 10090 38044 Grenoble Cedex 9 - T.+33 (0)4 57 42 85 00

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## Simple form of learning in non neural organisms, evidence from slime molds

Learning, defined as a change in behavior evoked by experience, has hitherto been investigated almost exclusively in multicellular neural organisms. Evidence for learning in non-neural multicellular organisms is scant and only a few unequivocal reports of learning have been described in single celled organisms. In this conference, in a first part, I will demonstrate habituation, an unmistakable form of learning, in the non-neural organism *Physarum polycephalum*. In a second part, I will show that learned behavior can be transferred from one cell to another via cell fusion. In the last part, I will propose a possible mechanism underlying habituation in slime moulds and reveal that this mechanism allows information to be preserved for a very long time. All these results point to the diversity of organisms lacking neurons, which likely display a hitherto unrecognized capacity for habituation, a simple form of learning. These results suggest that slime moulds may be an ideal model system in which to investigate fundamental mechanisms underlying the ground-floor of learning abilities.

Hôte : Virgile Adam (IBS/DYNAMOP)