



# School of Graduate Studies and Research

Invites faculty, staff, and students to attend

## Faculty Research Colloquium



### Dr. Ali Maalaoui

Chair and Assistant Professor of Mathematics and Natural Sciences Department  
School of Arts and Sciences

### *“Energy Concentration and Bubbling Phenomena in Critical Partial Differential Equations”*

**3:30-4:30 PM, Wednesday, November 8, 2017**  
**Building G, Ground Floor, Multi-Purpose Hall**

#### *Abstract*

In almost all the applied sciences fields, partial differential equations tend to be the main tool to model different natural phenomena, mostly coming from physics, biology, engineering and finance. Other than the applied use of PDEs, they can be used to describe different geometric quantities and their transformations. In this talk, we will focus on a phenomena that frequently occurs in PDEs of geometric or physical natures. This phenomena is the energy concentration which stands as an obstacle for finding solutions to different problems. We will discuss how, understanding this phenomena may allow us in certain situation to bypass it and find solutions.

#### *About the Speaker*

Dr. Ali Maalaoui, Assistant Professor of Mathematics, received his PhD. in pure mathematics from Rutgers University in 2013. He also finished a post Doc at the University of Basel before joining AURAK in 2014. His research interests are in the field of geometric analysis and partial differential equations and their applications to mathematical physics with focus on critical phenomena and loss of compactness. Dr. Maalaoui has published more than 25 papers in prestigious and highly cited academic journals.