

# Ursidae: The Undergraduate Research Journal at the University of Northern Colorado

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Volume 5

Number 1 2015 Research Excellence Awards Winners  
and Finalists

Article 12

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January 2015

## Analysis of Snake Toxin and Fibrinogen on Fibrin Formation using SEM and AFM

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### Recommended Citation

Luna, Javier (2015) "Analysis of Snake Toxin and Fibrinogen on Fibrin Formation using SEM and AFM," *Ursidae: The Undergraduate Research Journal at the University of Northern Colorado*: Vol. 5 : No. 1 , Article 12.  
Available at: <http://digscholarship.unco.edu/urj/vol5/iss1/12>

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Luna

## **Analysis of Snake Toxin and Fibrinogen on Fibrin Formation using SEM and AFM**

Presenter: Javier Luna

*Faculty Mentors: Stephen Mackessy and Kimberly Pacheco*

**Abstract:** Fibrinogen, a plasma protein, when combined with thrombin, a plasma enzyme, produces fibrin, a fibrous mesh-like compound that begins the cascade reaction of the coagulation of blood. It is known that various snake toxins contain thrombin-like enzymes, which cause the same chain reaction. To analyze this phenomenon we present an approach to modify mica surfaces using silane-based thin films. This involves coating the surface with N-(6-aminohexyl) aminopropyltrimethoxysilane or 3-aminopropyltriethoxysilane, and exposing the surface to human fibrinogen combined with thrombin-like enzymes (isolated from snake toxin). Current research has been able to successfully image unreacted fibrinogen and a thrombin catalyzed fibrin complex. The object of this research is simple; analyze and observe the effect of snake venom toxin on fibrin formation, using SEM and AFM imaging, in an effort to further understand the coagulation process. This presentation displays the images captured to date.