

UC Riverside Department of Mathematics

# MATH CLUB

**Grad Student  
Volunteers:**

- Nishu Lal
- Andrew Monnot
- Anya Seboldt

**Undergrad Student  
Volunteers:**

- Emad Totari
- Amanda  
Hoisington

**Tuesday, September 27<sup>th</sup>, 4:10 - 5:00 p.m. in Surge 284:****Dr. Angela Gallegos, Occidental College****Let's Talk About Sex: The Crocodillia and Delay-Differential Equations****Abstract:**

Crocodilia display many interesting characteristics that affect their population dynamics. In particular, they are among the reptile species that exhibit temperature dependent sex determination (TSD), in which the sex of offspring is determined by egg incubation temperature. Their life parameters, specifically birth and death rates, exhibit strong age-dependence. We develop delay-differential equation (DDE) models describing the evolution of a crocodilian population. In using the delay formulation, we are able to account for both the TSD and the age-dependence of the life parameters, while maintaining some analytical tractability. I will discuss the model formulation and analysis as well as compare our results to biological data.

This work was done in conjunction with AMSSI, an undergraduate summer research program at Cal Poly Pomona and Loyola Marymount University and has been extended by an undergraduate at Occidental College.

**Snacks and drinks will be served**[mathdept.ucr.edu/mathclub](http://mathdept.ucr.edu/mathclub)

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**Thursday, October 6<sup>th</sup>, 4:10 - 5:00 p.m. in Surge 284:**

## **Graduate School in Mathematics—Panel Discussion**

**Are you thinking about graduate school yet? What about a graduate program in mathematics? Learn more about the graduate program in mathematics from current graduate students and faculty members in the department. This is a great step in preparing for graduate school, learning more about professions and fields of study in mathematics, and how to apply mathematics as a career.**

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**Monday, October 10<sup>th</sup>, 4:10 - 5:00 p.m. in Surge 284:**

**Nathan Manning, UCR**

**“Symmetry: Groups and Representations”**

**Abstract:**

**Group theory is a classical branch of mathematics which has its origins in the study of symmetry. In this talk, we will discuss the symmetries of various plane figures from this perspective. We also use this as an introduction to the fascinating topic of representation theory, which has applications throughout mathematics.**

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**Monday, October 17<sup>th</sup>, 4:10 - 5:00 p.m. in Surge 284:**

## **Information Session on Applying for NSF Graduate Fellowships**

### **Abstract:**

**NSF Graduate Fellowships provide three years of funding in a graduate program. Students applying to graduate school, or those in their first two years of grad school, are eligible. We'd like to encourage students to apply, and will give information on the process for students who are interested.**

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**Monday, October 24<sup>th</sup>, 4:10 - 5:00 p.m. in Surge 284:**

**Matthew Bennett, UCR**

**“The Symmetric Groups and Elementary Invariant Theory”**

**Abstract:**

This talk will start by introducing the concept of a group using examples and definitions. I will argue that among finite groups, the most interesting are the symmetric groups. Then we will use the symmetric group to talk about Invariant Theory, with a focus on special families of invariant polynomials.

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**Monday, October 31<sup>st</sup>, 4:10 - 5:00 p.m. in Surge 284:**

## **Halloween Party**

**Games & Prizes and Refreshments Served**

### **Abstract:**

**Do you miss doing all those fun and challenging integrals in Math 9B, or are you learning about them now? Come and test your skills in this week's Integration Bee! Extra-special refreshments will be provided in honor of Halloween, but costumes are optional. Hope to see you there!**

**Snacks and drinks will be served**

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**Monday, November 7<sup>th</sup>, 4:10 - 5:00 p.m. in Surge 284:**

**John Dusel, UCR**

**“Integer Factorization”**

**Abstract:**

**In this talk I will discuss factorization in the integers. Beginning with the fundamental theorem of arithmetic, I will then outline several factoring techniques and conclude with a real-world application of factoring in public-key cryptography. Familiarity with the basics of number theory and congruences would be helpful, but is not a prerequisite for this material.**

**Snacks and drinks will be served**

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**Thursday, November 17<sup>th</sup>, 4:10 - 5:00 p.m. in Surge  
284**

## **“Math on Youtube”**

### **Abstract:**

**Even math videos have gone viral on YouTube! Come watch some popular favorites such as turning the sphere inside out and Mobius transformations revealed.**

**We have invited the undergraduate Math majors to the event, and snacks will be provided. Please come out and support the Math Club, we hope to see you there! And thank you everyone for supporting the Math Club!**

**Snacks and drinks will be served**

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**Monday, November 21<sup>st</sup>, 4:10 - 5:00 p.m. in Surge 284**

**Paul Oeser, UCR**

**“An introduction to associated primes, with history”**

**Abstract:**

**In this talk, I will discuss how associated primes sprang forth from factorizing integers into products of primes. We will also see how they evolved into what they are today, with lots of examples.**

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**Monday, November 29<sup>th</sup>, 4:10 - 5:00 p.m. in Surge  
285**

## **Math Games and Pizza**

### **Abstract:**

*As you start preparing for finals, we wanted to take this opportunity to de-stress and have fun!*

**We have invited the undergraduate Math majors to the event, and snacks will be provided. Please come out and support the Math Club, we hope to see you there!**

**Pizza and drinks will be served**

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