

A Presentation by **Dr. Dana Clahane**

FULLERTON COLLEGE

Is a sigma-field in a set X always, ever, or never closed under a quandle operation on the power set of X ?

Every knot induces an abstract mathematical object called a quandle (induced by the given knot).

One can formulate many new, basic questions about possible connections between a quandle on the power set of a set X . Recently, FC student Justin Gottula, who is an ENGAGE in STEM Summer Research Intern with Dr. Clahane, independently found an algorithm that generates all quandle multiplication tables for sets up to size 5, with 6 on the verge of being computationally complex. A Georgia Tech research group recently did the same for sets up to size 9. Using these quandles as examples, one can copy their multiplication tables into an identical quandle structure on the power set of a set X . It is then natural to ask whether or not sigma-fields, which Dr. Clahane will define, in X , are closed under any, all, or no reasonable quandle operations. He will discuss joint work with Khoi Vo on these questions. Participants will learn about congruence modulo n and cyclic quandles of order n , as examples. No mathematical background past second-year high school algebra is needed in order to completely understand this talk.



A Brief Talk by **Evan Amoranto**

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Generalizations of Fibonacci Sequences and the Question of Whether Infinitely Many Fibonacci Numbers are Prime

Evan Amoranto is entering Math 250A this semester at Fullerton College and has spoken at the Math Colloquium and the Pacific Summer Unsolved Mathematics Seminar. Amoranto has a particular talent for giving extremely clear presentations. His talk will certainly be understandable to anyone who knows what a variable is.

Mr. Amoranto will explain what Fibonacci sequences are, and he will discuss the several ways to generalize them. He then will discuss the open problem of whether or not any of these sequences have infinitely many prime numbers in them, as well as point out some surprising occurrences of these sequences in the universe.

(Dr. Dana Clahane, mentor)

MATH COLLOQUIUM #2
Thursday, September 6, 2012
12:45 -2:50 p.m. in Room 623

Lecture and Discussion
Refreshments will be served

Math Colloquia are held jointly with meetings of Math 295 Mathematics Seminar (new course!) and the Math Club



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Partially Sponsored by the Fullerton College Math & Computer Science Division

ENGAGE in STEM (Encouraging New Graduates and Gaining Expertise in Science, Technology, Engineering and Math) is funded through a U.S. Dept. of Education Hispanic Serving Institutions (HSI) STEM and Articulation Programs cooperative arrangement grant project.