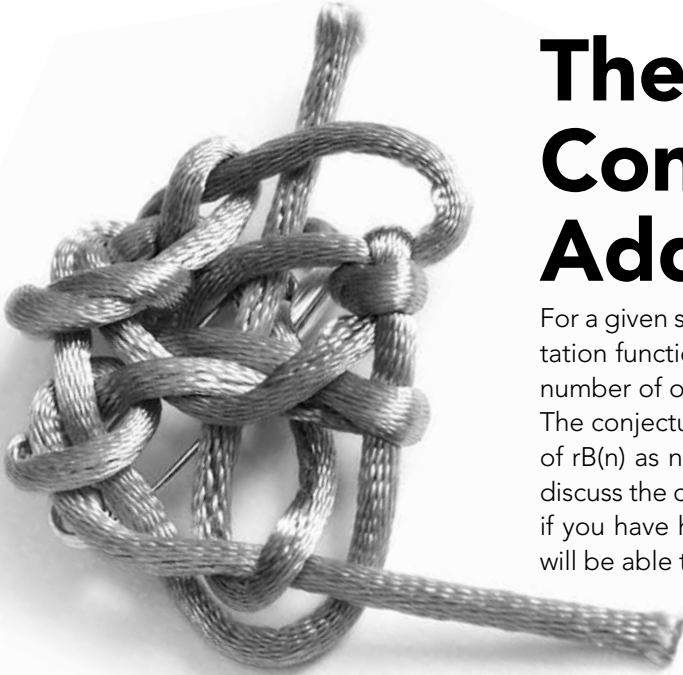


# A Presentation by Dr. William Cowieson

FULLERTON COLLEGE



## The Erdős-Turan Conjecture on Additive Bases

For a given subset  $B$  of  $\mathbb{N}$ , the counting numbers, one can define the representation function induced by  $B$ ,  $r_B$ , by defining  $r_B(n)$  to be the cardinality of the number of ordered pairs  $(a,b)$  with components only in  $B$ , such that  $a + b = n$ . The conjecture states that if  $r_B$  is eventually positive, then the limit supremum of  $r_B(n)$  as  $n$  tends to  $\infty$ , is  $\infty$ . Dr. Cowieson will explain this terminology and discuss the conjecture. If you have seen the definition of a function before (i.e., if you have had the equivalent of a second high school algebra course), you will be able to completely understand this conjecture

### A Brief Talk by Keziah Tan

FULLERTON COLLEGE STUDENT

### The Erdős-Strauss Conjecture

Ms. Tan is the FC Math Club President for Fall 2012 and is currently an ENGAGE in STEM Summer Research Intern with Dr. Clahane. She will be entering Math 250A in Fall 2012, and during the summer, she has been contributing to the Multiscale Cancer Modeling Seminar (meeting this particular week on Monday in Room 611T at 4:30pm). She has also volunteered many hours as a calculus and business pre-calculus homework grader through the Service Learning program at Fullerton College.

Her talk centers on the open question of whether or not, for every natural number  $n \geq 2$ , the fraction  $4/n$  can be expressed as the sum of three unit fractions. This problem illustrates the fact that a child can understand what many of the undiscovered frontiers of mathematics are. This talk will require no knowledge past pre-algebra.

(Dr. Dana Clahane, mentor)



### MATH COLLOQUIUM #1 Thursday, August 30, 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  
Pizza and punch provided by ENGAGE in STEM, administered by the Fullerton College Office of Special Programs.



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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.