

COLLOQUIU

The Mathematics Department of Sonoma State University presents a series of informal ta

"Mathematics is the process of turning coffee into theorems" -Paul E

WEDNESDAYS at 4:00 P.M.

DARWIN HALL ROOM 108

- | | |
|------------------------|--|
| SEPTEMBER
5 | BAYESIAN AND CLASSICAL STATISTICAL INFERENCE-A COMPARISON
Brian Jersky, Professor and Chair, Mathematics, Sonoma State University. inference, e.g. hypothesis testing, has been used to examine new therapeutic dru the use of Bayesian analysis to enhance inference. This has an impact on assessi |
| SEPTEMBER
12 | STRAIGHT LINES ON CURVED SURFACES
Rick Luttmann, Professor, Mathematics, Sonoma State University will talk at assigned to the concept of "straightness" so that it will be meaningful on curved : some of the strange lore of "straight lines" (officially called "geodesics") on su cylinders, cones, toruses, and saddles. |
| SEPTEMBER
19 | AN INTRODUCTION TO THE THEORY OF COMPUTATION
Lynn Stauffer, Professor of Computer Science, Sonoma State University. T the types of problems that can and cannot be solved by computers. The area of co problems by how difficult a given problem is to solve, will be covered. Many prok rely on the fact that a problem is known to be difficult. In the case of security, re large numbers is essential. Turing machines, Church's Thesis, decidability Completeness are included in the topics to be surveyed. |
| SEPTEMBER
26 | TEACHING WITH THE BRAIN IN MIND
Susan Herring, Professor of Mathematics, Sonoma State University. Rec questions about how the brain functions when learning new material. This talk v out" on an exam, the best way for students to learn, and the importance of a stud of general interest to teachers and learners alike. |

OCTOBER

3

FISH, FROGS, AND FIRES

Haiganoush K. Preisler, USDA Forest Service. The complexity of data curricula for scientists, in particular data collected by modern instruments such as satellites and the demand for the use of computer intensive statistical and graphical techniques. In this talk, I will discuss some of the projects I have worked on during my years as a forest service statistician.

OCTOBER

10

TO BE ANNOUNCED

Serkan Hosten, San Francisco State University.

OCTOBER

17

JUST HOW FAST ARE YOU GOING? CAN YOU TALK YOUR WAY OUT OF THAT TRAFFIC JAM?

Neil C. Schwertman, Department of Mathematics and Statistics, CSU Chico. A question that appears on various tests is: On a highway, if you pass the same number of cars as you are passed, is the mean or the median? There is a bit more to this question than is apparent at first glance. I will discuss the question and if it is possible to estimate your speed percentile based on the number of cars you pass.

OCTOBER

24

DEVELOPING MATHEMATICS TEACHING AND LEARNING IN SOUTH AFRICA

Karin Brodie and Lynn 'Slo' Slonimsky, University of the Witwatersrand. This talk will discuss the process of a curriculum reform process which aims to transform the apartheid-era curriculum into an equitable and effective system. The reform process makes major demands on teachers and requires the use of more learner-centered practices. Drawing on data from a recent research project, we will talk about some of the possibilities and difficulties of creating a curriculum for mathematics teachers, and the implications for developing better mathematics teaching and learning.

OCTOBER

31

GENETIC ALGORITHMS

Scott Gordon, Professor of Computer Science, Sonoma State University. Genetic algorithms are programs which evolve solutions to problems by emulating the processes of biological evolution: crossover, natural selection, and survival of the fittest. They have been used in a wide variety of applications, including semiconductor layout, and many other real-world applications. The speaker will discuss the use of a genetic algorithm to find solutions to the classical Knight's Tour problem.

NOVEMBER

7

MIXED METAPHORS: UNDERGRADUATE LANGUAGE AND UNDERSTANDING

Eric Hsu, San Francisco State University will discuss recent work on the role of metaphors in mathematical understanding. What is the role of a learner's spontaneous metaphors? How does the use of metaphor by "novices" and "experts" differ? Specific examples are taken from the language and reasoning of college calculus students.

NOVEMBER

14

BEADS AND BITS - NECKLACES AND GF(2^N)

Kevin Cattell, Agilent Technologies, INC. Extension fields? Attached roots? Isomorphisms? Come see a pair of isomorphisms between two-colored necklaces and two-colored strings and learn some interesting counting results along the way.

NOVEMBER

THANKSGIVING HOLIDAY

21

NOVEMBER

28

WAVELETS: THROUGH THE EYES OF AN INTERPOLATING POLYNOMIAL
Jeffrey Housman, University of California, Davis will briefly discuss wavelet construction specifically construction of wavelets through polynomial interpolation. This will include Multiwavelets from the ideas of Beam, Warming, Harten, and Lee. Finally, he will discuss Compact Multiwavelets to data compression, specifically for 3D computational fluid dynamics at NASA.

Talks may change: Please confirm with the Mathematics Department before a specific date.



SONOMA STATE UNIVERSITY

Department of Mathematics

(707) 664-2368

(707) 664-3535 FAX

ww