

Texas A&M University: Mathematics Dept.
REU/MCTP/UBM
Undergraduate Research Conference: July 27-28, 2011

Wednesday July 27

9:20-9:30 Al Boggess and Sue Geller: Opening Remarks

Session 1 Moderator: May Boggess

9:30-9:50 *Eradicating Invasive Species through Sex Reversal,*
Katie Storey (Carleton College)

9:55-10:15 *A Mathematical Model of Chagas Disease,*
Sara Krueger (Bethany Lutheran College)

10:20-10:40 *Bounding the Number of Components of Polynomial Hypersurfaces,*
Daniel Smith (UC Berkeley)

10:45-11:05 *Amoebas and their Tropical Varieties*
Timothy Jewell (University of California, Los Angeles)

Session 2 Moderator: Jay Walton

11:30-11:50 *Approximating A-Discriminant Amoebae of Tetranomials,*
Katherine Turner (Texas A&M University)

11:55-12:15 *Implementing Nilsson and Passare's Coamoeba Algorithm,*
Jeff Sommars (Wheaton College)

12:20-12:40 *Mathematical Modeling of Circannual Prolactin Cycles,*
Paulo Eusebio (Washburn University)

12:45-1:05 *Feasibility of p -adic polynomial systems,*
Davi da Silva (University of Chicago)

Session 3 Moderator: Sue Geller

2:00-2:20 *Matrix Analysis of Lone Star Tick Populations,*
Adam Kley (Texas A & M University)

2:25-2:45 *Fraction of Nonnegative Polynomials that are Sums of Squares,*
Caitlin Lownes (Massachusetts Institute of Technology)

2:50-3:10 *Frame Theory Over Arbitrary Fields,*
Suren Jayasuriya (University of Pittsburgh),
Pedro Perez (Columbus State University)

3:15-3:35 *Ray sensory neuron control of the *C. elegans* nematode worm mating behavior,*
Laura Caffisch (Texas A & M University)

4:00-4:20 *Fractals By Hand*
May Boggess

Graduate School Overview

4:20-4:40 Paulo Lima-Filo: TAMU Mathematics Department

4:40-5:00 Fred Dahm: TAMU Statistics Department

Thursday July 28

Session 1 Moderator: Dave Larson

9:30-9:50 λ -permutations of Conditionally Divergent Series I,
Jacob Brumbaugh-Smith (Pomona College)

9:55-10:15 λ -permutations of Conditionally Divergent Series II,
Mamikon Gulian (University of Maryland, Baltimore County)

10:20-10:40 Implications of Harvest Strategies in Fishery Populations,
Corinne Wentworth (St. Mary's College of Maryland)

10:45-11:05 Carotid Artery Model Using Criscione Kinematic Framework,
Carlos Graham (Texas A & M University)

Session 2 Moderator: Maurice Rojas

11:30-11:50 Finger Motion Modeling For Bionic Fingers,
Myrielle Allen-Prince (Bennett College)

11:55-12:15 On Chord Recognition,
Zach Gendreau (Worcester Polytechnic Institute), Westin King (Baylor University),
Derek Kinney (University of Rochester), Mallory Schulte (Augustana College),
Kelly O'Bryant (Texas A&M University at Corpus Christi)

12:20-12:40 Methods of Cursive Letter Recognition,
Josh Bracewell (New Jersey Institute of Technology),
Aviva Bukiet (New York University), Amanda Hoisington (College of the Sequoias),
Kermit Martignoni (Southern Illinois University Edwardsville), Mandy Welch (Northern
Kentucky University)

12:45-1:05 Refinability of Multivariate Polynomials,
Paul Gustafson (Princeton University)

Session 3 Moderator: Greg Berkoliko

2:00-2:20 Oregon Blackberry Invasion Analyzed by Spatial Stochastic Modeling,
Heather Johnston (Western Oregon University)

2:25-2:45 Word Recognition,
M. Harding Jr. (Morehouse College),
S. Lane (College of St. Benedict & St. John's University),
E. Metheney (SIU Edwardsville), K. Stoutz (State University of New York at Geneseo),
R. Whitaker (Carleton College)

2:50-3:10 Signature Recognition Using Wavelets and Other Methods,
Katelyn Heath (St. Michael's College), Kiley Johnson (Seattle Pacific University),
Bryan Karlovitz (Westchester University),
Joshua Vaughan (Mississippi State University)
Molly Stubblefield (Western Oregon University),

3:15-3:35 Uncertainty and Information in Time-Frequency Analysis,
Suren Jayasuriya (University of Pittsburgh)

4:00 **Awards Ceremony and Closing Remarks.** May Boggess.