

# ∫ Integram

## EMU Mathematical Sciences Department

### Spring 2005

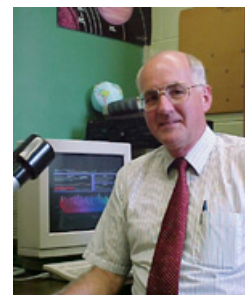
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## A TRIBUTE TO JOSEPH WILLIS MAST

Joe, as he is affectionately known, came to EMC as a student in the fall of 1960 and graduated with a math major in the spring of 1964. He grew up in a large farm family, the third of eight children, in western New York. Following graduation he taught math and physics in the then new Eastern Mennonite High School building for one year. In the summer of 1965 he married Nancy Noll a junior English major from Lancaster Pa. Nancy is also retiring after 30 years of teaching and administration in the Rockingham County Public Schools. They have two married sons: Brian, a mechanical engineer with Modine, and Darrell, a computer specialist at Johns Hopkins University.



In the fall of 1965, Joe enrolled in the doctoral program in Astronomy at the University of Virginia. His Ph.D. dissertation explored the motion and distribution of interstellar hydrogen clouds in the neighborhood of the Sun. Much of his research work was conducted at the National Radio Astronomy Observatory at Greenbank, West Virginia. During his astronomy studies he also was introduced to a second major love: the newly emerging field of computer science. Programming Algol played a part in his astronomy research.

Joe returned to EMC in the fall of 1968 to help form the new department of physics with Robert Lehman and John Horst. Also at this time EMC acquired its first computer — an IBM 1130. (The input was provided by punched cards!) In the fall of 1969, he taught the first computer science course NatSci 151 Programming Computers (in Fortran) which ran each trimester through the 1970's. The span of Joe's teaching responsibilities through the 1970's and early 80's was remarkable: teaching courses in astronomy, courses in the physics major, courses in the math major, courses in computer science, helping with planetarium programs, and on occasion teaching in the interdisciplinary humanities program!

In 1979 the physics major was discontinued, and Joe initiated a two-year Associate in Applied Science degree in Computer Processing. The four-year Computer Science major was approved in 1981, implementing the 1977 Guidelines of the Association of Computing Machinery. Joe began his formal study in the emerging field of computer science in the 1970's at JMU and completed his Master's in Computer Science degree at the University of Virginia in 1986. Until the arrival of Charles Cooley in the Fall of 1999, Joe taught most of the upper level computer science courses.

Several significant administrative positions should be noted. Joe served as the Academic Computer Center Coordinator from 1980 to 1985. During this time desktop computer labs were furnished with the necessary peripherals. The Internet arrived on campus in the Fall of 1994, paid for by an NSF Connection grant that Joe submitted in 1993. That fall Dan Marple was hired to head up the new Information Systems department while Joe was off to UVa for a well-deserved sabbatical leave. (I'm encouraging him to write a brief history of computing at EMU!) In 1986 he became director of the M.T. Brackbill Planetarium. Over 5000 school-age children per year learn about the stars and solar system, which is helpful for their state SOL exams. He installed a new 10-inch Meade telescope in the observatory in 2003.

Here are a few additional interesting facts about Joe:

- He once coached the men's tennis team at EMC.
- Robert Lehman and Joe were on the first Board of Directors of the Park View Federal Credit Union. The bank headquarters was in Joe's office for 10 years.
- He (a good tenor) and Nancy sing with the Valley Table Singers. They are dedicated to the Harmonia Sacra legacy.
- He has been a very active member of the Harrisonburg Mennonite Church, serving on church and pastoral councils, singing in the choir, and teaching Sunday School.
- He has been on the Board of the Virginia Mennonite Auto Aid Plan since 1981.
- He taught over 45 different courses in his 37-year tenure at EMU.
- He received a Quality Service Award. His generous office hours were always open for consultation to faculty, staff, and students.

This coming fall, Joe and Nancy will be moving to Lancaster PA to be closer to Nancy's father, extended family, and especially, grandchildren. Thanks so much, Joe, for your dedicated 37 years of service to EMU. The faculty and staff in the Suter Science Center will miss your philosophical contributions to the Faculty Lounge discussions. In the words of our former friend and mentor, M. T. Brackbill: "Ad Astra!"

— Your colleague, John Horst, Faculty Emeriti

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## 2005 International Math Contest Results

**Three EMU Teams** participated in the 2005 International Mathematical Contest in Modeling. The contest began at 8:01 p.m. on Thursday, February 3 and officially ended at 8:00 p.m. on Monday, February 7.

Team #703 consisted of Austin Rhodes, Mark Risser, and Andrew Eshleman. Team #704 consisted of Michael Horst, Rachel Sims, and Karoline Smucker. Both teams worked on a mathematical model that would estimate the effect if an earthquake breached the Saluda Dam near Columbia, South Carolina. Both teams won Honorable Mention.

Team #863 consisted of Adam Adongo, Jason Hedrick, and Yohannes Yenealem. This team worked on a model for optimizing traffic flow through a toll plaza. They received the rating of Successful Participant.

A total of 664 teams from all over the world participated in the contest. There were 10 Outstanding winners (2%), 85 Meritorious Winners (13%), 195 Honorable Mentions (29%), and 374 Successful Participants (56%).

— Leah Boyer and Charles Cooley, advisors.

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**Yong Zhang** will join the Mathematical Science Department next fall, teaching computer science, computer information systems, and mathematics courses. Yong is expected to receive a Ph.D. in Computer Science from the University of South Carolina in May. Yong also has Masters degrees in Chemistry and Computer Engineering. His dissertation topic is “Quantum Circuits and Quantum Algorithms”.

**Dr. William Brenneman**, Senior Statistician at Proctor & Gamble, presented a seminar for the department on the topic of “Statistics in Industry: Robust Parameter Design Concepts”. Will received a bachelor’s degree in Mathematics at Tabor College and a Ph.D. degree in Statistics at the University of Michigan.

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## Problem Corner

Congratulations go to Mark Miller, Milton Loyer, and Ellis Detwiler (again!) for solving the Fall 2004 Integram problem by correctly calculating that the gasoline station was nine miles from the driver’s home.

### **New Problem:**

Our problem this semester is a challenging one and comes from an independent study project by senior Zachary Kurtz. You are playing a number game with a friend where you take turns subtracting an integer (from the set  $\{1,2,3,4,5,6,7,8,9\}$ ) from the running total, with one catch. Neither player cannot repeat the last number chosen by his/her opponent. The starting total is 100, and you get to go first. [Example: You could choose 2, putting the total at 98. Your opponent might then choose 3, reaching 95. Now it is your turn again, but you cannot choose the number 3.] The player who chooses a number that first causes the running total to become negative is the loser. What number should you choose for your first turn to guarantee that you will win the game?

Submit solutions to Owen Byer.

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**Editor: Joseph W. Mast  
mastj@emu.edu**