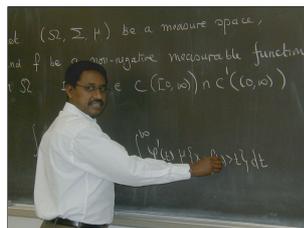


Undergraduate Colloquium Series

The Undergraduate Mathematics Colloquium at Ball State University

Dr. Ahmed Mohammed

The department of mathematical sciences at Ball State University provides a variety of opportunities to enrich the academic experience of its students. One such opportunity is offered through a colloquium series catered specifically to undergraduate mathematics majors. The colloquium series consists of half hour lectures that focus on applications of mathematics to real world problems and explores its interconnections with other sciences. The objective of



the colloquium is three-fold: to give undergraduate students a sense of the diversity and usefulness of mathematics in other sciences; to provide students with an opportunity to explore career options; to foster a close academic relationship with the faculty. The colloquium series tries to accomplish this by offering talks on topics that reflect the wide spectrum of mathematical interests in our department. In these presentations, our students can see the interconnections between the various mathematical subjects they learn in a class room setting and how they can be used in solving actual problems in other disciplines. While several talks are given by faculty members of the department, mathematicians from other universities and colleges are also invited to give lectures on topics deemed interesting to a wide audience of our faculty and students alike. Occasionally senior undergraduate students use this series to share their summer internship experiences or other mathematical projects with fellow students.

The colloquium series, called the Undergraduate Colloquium Series, typically runs every other Thursday from 12:30 P.M. to 1:00 P.M. Each semester, on the average, three talks are given by undergraduate mathematics majors. Our undergraduate students can obtain credit for attendance and writing a report on all or some of the scheduled talks by enrolling for MATHS 298.

Here is a list of speakers who participated in the 2003/2004 academic year, with topics:

Fall 2003

1. **Matthew Davis***, Burnside's lemma: advanced counting techniques
2. **Vania Mascioni**, Small Ramsey numbers and variations
3. **John Putz†**, Mozart and the golden ratio
4. **Ahmed Mohammed**, Singular value decomposition
5. **John Lorch**, The Hawkins random sieve
6. **Giray Okten**, Solving math problems by gambling! Random numbers, Monte Carlo methods, and quasi-Monte Carlo methods
7. **Lindsay Keazer***, Students' misconceptions in middle school mathematics

Spring 2004

1. **Gary Dean**, What are generalized linear models and why are actuaries using them?
2. **Mark Ward*†**, Analysis of a randomized selection algorithm
3. **John Emert**, Looking beyond the first wave: a non-stratified model for naturally occurring fractals
4. **Hanspeter Fischer**, Come visit John Conway's SymmetryLand
5. **Amiee Rodal***, Elliptic curves and elliptic curve cryptography
6. **Padmini Joshi**, Fun with trigonometry
7. **Linda Barton and Robin Rufatto**, Learning together: guiding students through a long term group project
8. **Alice Sampson***, Learning to teach mathematics in urban schools

Student contributions are marked by * and † identifies an invited speaker. All other talks were given by faculty members.