

McMASTER UNIVERSITY
GRADUATE PROGRAM IN STATISTICS

STATISTICS SEMINAR

Speaker: Dr. Shui Feng, Department of Mathematics and Statistics,
McMaster University

Title: “*Asymptotic Behaviour of Poisson-Dirichlet Distribution*”

Day: Tuesday February 15, 2005

Time: 3:30 - 4:30 PM

Place: HH/217 – Deloitte Colloquium Room (Refreshments in
HH/216 at 3:00 PM)

SUMMARY

The Poisson-Dirichlet distribution is introduced as the stationary distribution of an infinite-dimensional diffusion process. The asymptotic behavior of the distribution is investigated when the mutation parameter approaches infinity. This result is then used to prove a conjecture proposed by Gillespie in 1999.

REFERENCES

1. Dawson, D.A. & Feng, S. (1998). “Large Deviations for the Fleming-Viot Process with Neutral Mutation and Selection,” *Stochastic Processes and Applications* **77**, pp. 207-232.
2. Gillespie, J.H. (1999). “The Role of Population Size in Molecular Evolution,” *Theoretical Population Biology* **55**, pp. 145-156.
3. Joyce, P., Krone, S.M., & Kurtz, T.G. (2003). “When Can One Detect Overdominant Selection in the Infinite-Alleles Model?,” *Annals of*

- Applied Probability* 13(1), pp. 181-212.
4. Kingman, K.C. (1975). "Random Discrete Distributions," *Journal of the Royal Statistical Society B* 37, pp. 1-22.



ABOUT THE SPEAKER: Dr. Shui Feng is a Professor in the Department of Mathematics and Statistics at McMaster University. He obtained his B.Sc. and M.Sc. degrees from Beijing Normal University, China, and his Ph.D. in probability from Carleton University. Feng's research focuses on stochastic processes and their applications in biology, finance, and physics. (Picture by Cheryl McGill, 2004).

For more information, please contact Román Viveros at (905) 525-9140 ext. 23425,
e-mail: rviveros@math.mcmaster.ca
<http://icarus.math.mcmaster.ca/rviveros/StatsSem.html>