The *Third Edition* of the critically acclaimed *Univariate Discrete Distributions* provides a self-contained, systematic treatment of the theory, derivation, and application of probability distributions for count data. Generalized zeta-function and q-series distributions have been added and are covered in detail. New families of distributions, including Lagrangian-type distributions, are integrated into this thoroughly revised and updated text. Additional applications of univariate discrete distributions are explored to demonstrate the flexibility of this powerful method.

A thorough survey of recent statistical literature draws attention to many new distributions and results for the classical distributions. Approximately 450 new references along with several new sections are introduced to reflect the current literature and knowledge of discrete distributions.

Beginning with mathematical, probability, and statistical fundamentals, the authors provide clear coverage of the key topics in the field, including:

- Families of discrete distributions
- Binomial distribution
- Poisson distribution
- Negative binomial distribution
- Hypergeometric distributions
- Logarithmic and Lagrangian distributions
- Mixture distributions
- Stopped-sum distributions
- Matching, occupancy, runs, and q-series distributions
- Parametric regression models and miscellanea

Emphasis continues to be placed on the increasing relevance of Bayesian inference to discrete distribution, especially with regard to the binomial and Poisson distributions. New derivations of discrete distributions via stochastic processes and random walks are introduced without unnecessarily complex discussions of stochastic processes. Throughout the *Third Edition*, extensive information has been added to reflect the new role of computer-based applications.

With its thorough coverage and balanced presentation of theory and application, this is an excellent and essential reference for statisticians and mathematicians.