CURRICULUM VITAE

Personal Information

Name: Rahim Mahmoudvand

Education

• Ph.D. Statistics		Shahid Beheshti University (2008- 2012)
• M.Sc. Actuarial Sciences		Shahid Beheshti University (2001- 2004)
• B.Sc. Statistics		Ferdowsi University (1997- 2001)

Research Interests

Singular Spectrum Analysis (Time series analysis), Actuarial sciences, Applied Statistics

Work Experience

• 2024-	Researcher	University of Cagliari (Italy).
• 2021-	Associate Professor	Bu-Ali Sina University.
• 2014-2021	Assistant Professor	Bu-Ali Sina University.
• 2012-2015	Statistical Counselor	Mellat Insurance Company.
• 2016-Present	CEO	Amargostaran Niko Pardaz Alvand (AGNA).

Research Visits

- Visiting research, Department of Statistical Sciences, Duke University, Durham, United States, Feb 18th-March 17th 2025 (Host: David Banks).
- Visiting research, CAST, University of Tampere, Tampere, Finland, 24 June-7 July 2018 (Host: Paulo C Rodrigues; Full funded).
- Visiting research, Department of Science and Technology, University of Aberta, Portugal, Feb 10-18, 2017 (Host: Teresa Oliveira; Full funded)
- Visiting research, Department of Statistics, UFBA, Salvador, Brazil, 1 July-16 Aug 2015 (Host: Paulo C Rodrigues; Full funded).
- Visiting research, Department of Statistics, Aarhus University, Aarhus, Denmark, Aug 4-18, 2014 (Host: Søren Asmussen; Full funded).

- Academic visit, School of Mathematics, Cardiff University, Cardiff, UK, Sep 2011-Feb 2012 (Host: Anatoly Zhigljavsky).

Awards & Honors

- The third rank y-BIS best paper award for presenting paper in ISBIS2016 conference, Spain, 2016.
- CAPES, Brazil, Scholarship for doing a project on "*Singular Spectrum Analysis and Multivariate SSA*", 2014-2018.
- University of Cagliari, Italy, Research grant for collaborating on GRINS Project, 2024-2026.

Software and programming languages

R, Minitab, SPSS, Excel, QlikView, SAS

Publications (Book and Chapter in book)

1. **Mahmoudvand, R.** (2025). Applications of Singular Spectrum Analysis in Agricultural Financial Time Series. In: Assa, H., Liu, P., Wang, S. (eds) Quantitative Risk Management in Agricultural Business. Springer Actuarial. Springer, Cham. https://doi.org/10.1007/978-3-031-80574-5_12

2. Hassani, H. and **Mahmoudvand, R**. (2018). *Singular Spectrum Analysis Using R*. Springer.

3. **Mahmoudvand, R**., & Oliveira, T. A. (2018). On the application of sample coefficient of variation for managing loan portfolio risks. In Recent Studies on Risk Analysis and Statistical Modeling (pp. 87-97). Springer, Cham.

4. Oliveira, T.; Oliveira, A.; **Mahmoudvand, R.**; Ravishankar, N.; and Banks, D. ISBIS 2016 Meeting on Statistics in Business and Industry (Book of Abstract), Barcelona, Spain, June 2016.

5. **Mahmoudvand, R** and Aziznasiri, S. (2014). *Bonus-Malus systems in open and closed portfolios*. In *Modern Problems in Insurance Mathematics* (pp. 261-271). Springer International Publishing.

Publications (Peer-Reviewed Scientific Journals)

1. **Mahmoudvand, R**., Fiori Maccioni, A., Frigau, L., & Banks, D. (2025). Probability Distribution of Risk Priority Numbers in Failure Mode and Effects Analysis. *Risk Analysis*. 45: 4783-4795.

2. Fiori Maccioni, A, Sbaraglia S, **Mahmoudvand, R** and Zedda S. (2025). A Comparative Analysis of Price Forecasting Methods for Maximizing Battery Storage Profits. Energies, 18, 3309

3. **Mahmoudvand, R.** (2025). Comparing methods for forecasting time series with multiple observations per period using singular spectrum analysis. Environmental and Ecological Statistics published online (https://link.springer.com/article/10.1007/s10651-025-00648-8).

4. Barati, M., **Mahmoudvand, R**., Seif, A. et al. (2024). Modeling water table depth fluctuation with special reference to iran: the singular spectrum analysis approach. Environ Earth Sci 83, 639.

5. **Mahmoudvand, R.** (2024). Two New Estimators for the Autocorrelation Function Through Singular Spectrum Analysis, Fluctuation and Noise Letters, Vol. 23, No. 03, 2450026.

6. **Mahmoudvand, R.**, Barati, M. Seif. A, Ranjbaran, S. & Rodrigues, P. C. (2023). Modeling Water Table Depth using Singular Spectrum Analysis. Statistics and Its Interfaces, Vol. 16, pp. 279-286.

7. Yarmohammadi, M., Afshar, A., **Mahmoudvand, R.,** Nasiri, P. (2022). Predicting intensity function of nonhomogeneous Poisson process. Journal of Statistical Modelling: Theory and Applications, 3(2), 39-50.

8. Haghbin, H., Najibi, S. M., **Mahmoudvand, R.,** Trinka, J., & Maadooliat, M. (2021). Functional singular spectrum analysis. Stat, Vol. 10, No. 1, e330.

9. Jahromi, F. K., Sabziparvar, A. A., & **Mahmoudvand, R.** (2021). Spectral analysis of soil temperature and their coincidence with air temperature in Iran. Environmental Monitoring and Assessment, Vol. 193, No. 2, pp 1-14.

10. **Mahmoudvand, R.**, & Rodrigues, P. C. (2021). Prediction intervals for the vector singular spectrum analysis forecasting algorithm in a median-based singular spectrum analysis. Computational AND Mathematical Methods. Vol. 3, No. 1, e1080

11. Awe, O.O., Rodrigues, P.C. and **Mahmoudvand, R**. (2020). Non-negative time series reconstruction using singular spectrum analysis: A case study of precipitation dynamics in Nigeria. Fluctuation and Noise Letters. Vol. *19*, No. 04, pp 2050045

12. Rodrigues, P.C., Awe, O.O, Pimentel, J. and **Mahmoudvand, R**. (2020). Modelling the behaviour of currency exchange rates with singular spectrum analysis and artificial neural networks. Stats Vol. 3, pp. 137–157.

13. Rodrigues, P.C & **Mahmoudvand, R.** (2020): A new approach for the vector forecast algorithm in singular spectrum analysis, *Communications in Statistics - Simulation and Computation*, Vol. *49, No.* 3, pp. 591-605.

14. **Mahmoudvand, R.**, & Rodrigues, P. C. (2020). Predicting the Brexit Outcome Using Singular Spectrum Analysis. Journal of Computational Statistics and Modeling, Vol. *1,* No. 1, pp. 11-19.

15. Papatsouma, I., **Mahmoudvand, R**., and Farmakis, N. (2019) Evaluating the Goodness of the Sample Coefficient of Variation via Discrete Uniform Distribution. Statistics, Optimization and Information Computing, Vol *7*, No. 4, pp. 642-652.

16. **Mahmoudvand, R**.; Yarmohammadi, M.; and Rodrigues, P.C. (2019). Forecasting Daily Exchange Rates: A Comparison between SSA and MSSA. *RevStat-Statistical Journal*, *Vol. 17*, No. 4, pp. 599-616.

17. Rodrigues, P.C; Lourenco, V. and **Mahmoudvand, R**. (2018). A Robust Approach to Singular Spectrum Analysis. *Quality and Reliability Engineering International, Vol.* 34, pp. 1437-1447.

18. Arezoomand, F. Yarmohammadi, M, and **Mahmoudvand, R**. (2018). Asymmetric Uniform-Laplace Distribution: Properties and Applications. *Journal of the Iranian Statistical Society*, *Vol.* 17 (2), pp. 119-140.

19. Rodrigues, P.C; Tuy, Petala, G.S.E. and **Mahmoudvand, R**. (2018). Randomized singular spectrum analysis for long time series. *Journal of Statistical Computation and Simulation,* Vol. 88, pp, 1437-1447.

20. Rodrigues, P.C; and **Mahmoudvand, R**. (2018). The benefits of multivariate singular spectrum analysis over the univariate version. *Journal of the Franklin Institute,* Vol. 355, pp 544-564.

21. Manteqipour, M.; Ghaffari H.A.; **Mahmoudvand, R**. and Safari A. (2018). Grouping objects to homogeneous classes satisfying requisite mass. *Journal of AI and Data Mining*, Vol. 6, pp. 163-175.

22. Mohammadpour, S.; Karzan, S.; and **Mahmoudvand, R**. (2017). Generalised form of Bonus-Malus System Using Finite Mixture Models. Statistics, Optimization and Information Computing, vol. 5, pp. 179-187.

23. **Mahmoudvand, R**.; Konstantinides, G. Dimitrios.; Rodrigues, P.C. (2017). Forecasting Mortality Rate by Multivariate Singular Spectrum Analysis. *Applied Stochastic Models in Business and Industry*, Vol. 33, No. 6. pp. 717-732.

24. **Mahmoudvand, R**.; Rodrigues, P.C (2017). A New Parsimonious Recurrent Forecasting Model in Singular Spectrum Analysis. *Journal of Forecasting*, Vol. 37, pp. 191-200.

25. **Mahmoudvand, R**.; Chong It, T., and Abbasi, N. (2017). Adjusting the Premium Relativities in a Bonus-Malus System: An Integrated Approach Using the First Claim Time and the Number of Claims. *Asia-Pacific Journal of Risk and Insurance, Vol. 11, No. 2*.

26. Rodrigues, P.C; **Mahmoudvand, R**. (2016). Correlation Analysis in Contaminated Data by Singular Spectrum Analysis. *Quality and Reliability Engineering International*, Vol. 32, pp. 2127-2137.

27. Ghanati, R; Kazemhafizi, M; **Mahmoudvand, R**; and Fallahsafari, M. (2016). Filtering and parameter estimation of surface-NMR data using singular spectrum analysis. *Journal of Applied Geophysics*, Vol. 130, pp. 118-130.

28. **Mahmoudvand, R**.; Rodrigues, P.C. (2016). Missing value imputation in time series using Singular Spectrum Analysis. *International Journal of Energy and Statistics*, Vol *4,* No 01, 1650005.

29. Ghasemi, S.; **Mahmoudvand, R**.; Yavari, K. (2016). Application of the FMEA in Insurance of High-Risk Industries: A Case Study of Iran's Gas Refineries. *Stochastic Environmental Research and Risk Assessment*, Vol. 30, No. 2, pp. 737-745.

30. **Mahmoudvand, R**; Faradmal, J; Abbasi, N; and Lurz, K. (2015). A New Modification in the Classical Laplace Distribution. *Journal of the Iranian Statistical Society*, Vol. 14, No. 2, pp. 93-118.

31. **Mahmoudvand, R**.; Alehosseini, F.; Rodrigues, P.C. (2015). Forecasting Mortality Rate by Singular Spectrum Analysis. *RevStat-Statistical Journal*, Vol. 13, No. 3, pp. 193-206.

32. Hassani, H.; **Mahmoudvand, R**.; Nabe Omer, H.; Silvia, E.S. (2014). A Preliminary Investigation into the Effect of Outlier(s) on Singular Spectrum Analysis. *Fluctuation and Noise Letter*, Vol. 13, No. 4.14500290.

33. **Mahmoudvand, R**.; Alhosseini, F.; and Zokaei, M. (2013). Feasibility of Mortality Forecasting with Singular Spectrum Analysis. *Journal of Data Science*, Vol. 11, No. 4, pp. 851-866.

34. Hassani, H.; **Mahmoudvand, R**. (2013) Multivariate Singular Spectrum Analysis: A General view and New Vector Forecasting Approach. *International Journal of Energy and Statistics*, Vol. 1, No. 1, pp. 55-83.

35. **Mahmoudvand, R**.; Edalati, A.; and Shokoohi, F. (2013). Bonus-Malus System in Iran: An Empirical Evaluation. *Journal of Data Science*, Vol. 11, No. 1, pp. 20-41.

36. **Mahmoudvand, R**.; Najari, N.; and Zokaei, M. (2013). On the Parameters for Reconstruction and Forecasting in the Singular Spectrum Analysis. *Communication in Statistics: Simulations and Computations*, Vol. 42, pp. 860-870.

37. Hassani, H.; **Mahmoudvand, R**.; Zokaei, M.; and Ghodsi, M. (2012). On the Separability Between Signal and Noise in Singular Spectrum Analysis. *Fluctuation and Noise Letters*. Vol. 11, No. 2, pp. 1-11.

38. **Mahmoudvand, R**.; and Zokaei, M. (2012). On the Singular Values of the Hankel Matrix with Application in Singular Spectrum Analysis. *Chilean Journal of Statistics*, Vol. 3, No. 1. pp. 43-56.

39. Hassani, H.; **Mahmoudvand, R**.; and Zokaei, M. (2011). Separability and Window Length in Singular Spectrum Analysis. *Comptes Rendus Mathematique*, Vol. 349, No. 17. pp. 987-991.

40. Hassani, H; **Mahmoudvand, R**; Yarmohammadi, M. (2010). Filtering and Denoising in the Linear Regression Models. *Fluctuation and Noise Letter*. Vol. 9, No. 4, pp. 343-358.

41. **Mahmoudvand, R**; Hassani, H; Farzaneh, A; and Howell, G. (2010). The Distribution of a Linear Combination of r Independent Discreat Random Variables. *Journal of Interdisciplinary Mathematics*. Vol. 13. No. 2. pp 135-142.

42. **Mahmoudvand, R**; Hassani, H; Farzaneh, A; and Howell, G. (2010). The Exact Number of Nonnegative Solutions to the Diophantine Inequality. *IAENG International Journal of Applied Mathematics*, Vol. 40. No. 1, pp. 1-5.

43. **Mahmoudvand, R**; and Edalati, A. (2009). On the Distribution of Collective Risk Models. *Journal of Statistical Research of Iran*. Vol. 6, No. 2. pp. 141-155.

44. **Mahmoudvand, R**; and Hassani, H. (2009). Two New Confidence Interval for the Coefficient of Variation in a Normal Distribution. *Journal of Applied Statistics*. Vol. 36. No. 4. pp. 429-442.

45. **Mahmoudvand, R**; and Hassani, H. (2009). Generalized Optimal Bonus-Malus Systems with a Frequency and Severity Component on an Individual Basis in Automobile Insurance. *ASTIN Bulletin*. Vol. 39, No. 1, pp. 307-315.

46. **Mahmoudvand, R**; and Hassani, H. (2005). A New Approximation for the Null Distribution of the Likelihood-Ratio Test Statistics for k Outliers in a Normal Sample. *Journal of Statistical Research of Iran*. Vol. 2, No. 2. pp. 141-158.

Oral Presentations in International Conferences

1. **Mahmoudvand, R.** Study of the effects of extreme events on mortality using Singular Spectrum Analysis, ISI2025, 2025/10/05 to 2025/10/09, in the Hague, The Netherlands.

2. **Mahmoudvand, R**. Statistical Approaches to Measuring the Relationship between Customer and Employee Satisfaction with Unequal Sample Sizes. ISBIS Conference, Oct 2-3, 2025, Amsterdam, The Netherlands (Invited speaker).

3. **Mahmoudvand, R.** Change Point Detection Using Singular Spectrum Analysis. ISBIS Conference, June 2021 (I attended the conference virtually and the video of this presentation uploaded in the website: https://www.isbis-isi.org/webinars/ISBIS2021/Member_Contributed.html).

4. **Mahmoudvand, R.** Applications of Stochastic Ordering in Insurance: Challenges and Needs. The 3rd Int'l Conference on Statistics, Mathematical Modelling and Analysis, November 6-8, 2020 in Xiamen, China (I attended virtually).

5. **Mahmoudvand, R.** Highlighting a Mathematical Property of Sample ACF for Time Series Analysis, yBIS2019, 25-28 Sep 2019, Istanbul, Turkey.

6. **Mahmoudvand, R.** A Comparison of the Multivariate SSA Methods for Forecasting Mortality Rates, ISBIS2018, 4-6 July 2018, Piraeus, Greece (Invited talk)

7. **Mahmoudvand, R**. Determining Retention Limits in Reinsurance Using Bayesian Approach. XI Workshop on Statistics, Mathematics and Computations, July 11-12, 2017, Portalegre, Portugal (Plenary talk).

8. **Mahmoudvand, R**. Modelling Financial Data Using Modified Laplace Distribution. Satellite ISI-CRA Meeting, July 10, 2017, Lisbon, Portugal (Plenary talk).

9. **Mahmoudvand, R**. A New Parsimonious Vector Forecasting Model in Singular Spectrum Analysis. ISBIS Conference, June 8-10, 2016, Barcelona, Spain (Invited speaker).

10. **Mahmoudvand, R.** On the Possibility of using Multivariate Singular Spectrum Analysis for the Mortality Forecasting, ISI2015, 2015/7/26 to 2015/7/30 , in Rio de Janeiro, Brazil (Invited talk).

11. **Mahmoudvand, R.** Some Theoretical Aspects of the Multivariate Singular Spectrum Analysis, ISBIS Satellite Conference with Focus on Quality Control and Improvement, July 22- July 24, 2015, University of Campinas, Brazil.

12. **Mahmoudvand, R** and Aziznasiri, S. A New Modification on the Bonus-Malus System in Automobile Insurance, 8th Conference in Actuarial Science & Finance on Samos, 29 June-1 July, 2014, Samos, Greece.

13. **Mahmoudvand, R** and Aziznasiri, S. Bonus-Malus System in Open and Closed Portfolio. International Cramer Symposium on Insurance Mathematics, June 11-14, 2013, Stockholm University, Sweden.

14. **Mahmoudvand, R** and Zokaei, M. A Filter Based Correlation Coefficient by Using Singular Spectrum Analysis. The 31th Annual International Symposium on Forecasting, University of Economics, Prague, 26-29 Jun 2011.

Seminars and Invited Talks

1. **University of Cagliari, Italy.** "Covariate-Enhanced Singular Spectrum Analysis for Time Series" (Sep 2025)
2. **University of Lausanne, Switzerland.** "Time Series with Multiple Observations per Period and Its Applications to Loss Ratio Data" (Feb 2025)
3. **University of Cagliari, Italy.** "Challenges in Singular Spectrum Analysis" (Oct 2024)
4. **University of Cagliari, Italy.** "Introduction to Singular Spectrum Analysis" (Mar 2024)
5. **Universidad Autónoma de Madrid, Spain.** "An Overview of the Singular Spectrum Analysis" (Feb 2022-online seminar)
6. **Short course on Visualization Using QlikView, Mimar Sinan Fine Art University, Istanbul, Turkey** at yBIS 2019 conference (Sep 2019)
7. **CAST, Tampere University, Finland.** "Change Point Detection Using Singular Spectrum Analysis" (June 2018)
8. **CEAUL, University of Lisbon, Portugal.** "Bonus-Malus Systems: A brief discussion of some of the problems" (Feb 2017)
9. **University of Aberta, Lisbon, Portugal.** "Missing Data Imputation in Time Series Using Singular Spectrum Analysis" (Feb 2017)
10. **Aarhus University, Aarhus, Denmark.** "Mortality Forecasting by Singular Spectrum Analysis" (Aug 2014)

Academic Service

1. VP for Scientific Programs, International Society for Business and Industrial Statistics (ISBIS), 2025-2027.
2. VP for membership, International Society for Business and Industrial Statistics (ISBIS), 2023-2025.
3. Council member of ISBIS, 2017-2021.
4. Scientific Program Committee, ISBIS 2024 Conference, Indonesia, 10-12 July, 2024.
5. Lead organizer, Third Event on Play with Real Data, (virtual on 7th Oct-23th Oct 2023).
6. Lead organizer, Second Event on Play with Real Data, (virtual on 1st Mar-13th Mar 2023).
7. Lead organizer, Workshop on Common Errors in Statistical Studies, (virtual on 25 Feb 2022-03 Mar 2022).
8. Lead organizer, First Event on Play with Real Data, (virtual on 31 Dec 2020-30 Jan 2021).
9. Director for Research and Graduate Studies in the Faculty of Basic Sciences, Bu-Ali Sina University, 2020-2024.
10. Board member of Actuarial Society of Iran, 2018-2020 and 2020-2022.
11. Webinar's committee member, Iranian Statistical Society, 2020-2023.
12. Scientific Program Committee, Young Business and Industrial Statisticians Workshop on Recent Advances in Data Science and Business Analytics (y-BIS 2019), Istanbul, 25-28 Sep, 2019.
13. Editor-in-chief, Official Newsletter of the ASI, 2018-2021.
14. Chair of Scientific committee, Conference on Modern Method in Insurance Pricing and Industrial Statistics, Hamedan, Sep 3-5, 2017.
15. Scientific committee member, 7th International Conference on Risk Analysis (ICRA7), Chicago, USA, May 3-5, 2017.
16. Editorial member of the Journal of Statistics, Optimization and Information Computing (SOIC)
17. Serving as reviewer for international Journals.
18. Serving as external reviewer for research grant submitted to the Portuguese Foundation for Science and Technology (FCT).
19. Serving as external reviewer for several M.Sc. and Ph.D. thesis.
20. Serving as reviewers for book proposal on insurance and Statistics.

Advisory/Supervisory Service

Student	Level & discipline	University	Role	period
Shamsi Ghasemi	Ph.D. Financial Economic	Tarbiat Modares Univ	Advisor	2012-2013
Mahnaz Manteghipour	Ph.D. Applied Math	Shahid Madani Azar Univ	Advisor	2013-2017
Ali Sakhaei	Ph.D. Statistics	Payame Noor Univ	Advisor	2016-2018
Fatemeh Khani	MSc Meteorology	Bu-Ali Sina Univ	Advisor	2017-2018
Atefe Moradi	MSc Statistics	Razi Univ	Co-supervisor	2018-2019
Behnam Dabagh	MSc Actuarial Science	Shahid Beheshti Univ	Advisor	2018-2019
Behnaz Ahmadi	MSc Statistics	Razi Univ	Co-supervisor	2019-2020
Maryam Rahati	MSc Economics	Bu-Ali Sina Univ	Advisor	2019-2021
Jorge Basilo	Ph.D. Applied Math	Aberta Univ (Portugal)	Co-supervisor	2018-2021
Fatemeh Salim	MSc Meteorology	Bu-Ali Sina Univ	Advisor	2019-2022
Ada Afshar	Ph.D. Statistics	Payame Noor Univ	Advisor	2020-2024
Sedighe Setareh Shenas	Ph.D. Statistics	Birjand Univ	Advisor	2023-
Hadise Mojtahed	Ph.D. Actuarial Science	Eco Uni	Advisor	2023-
Amir Koulivand	MSc Statistics	Bu-Ali Sina Univ	Supervisor	2024-

Teaching Experience

I have extensive experience teaching undergraduate and postgraduate courses in statistics, probability, mathematics and related fields. My instruction has drawn on internationally recognized English-language textbooks. I have also taught service courses to students from a wide range of disciplines.

Undergraduate Courses:

- **Probability**
  Based on "A First Course in Probability" by Sheldon Ross (7th, 8th, and 9th editions).
- **Mathematical Statistics**
  Based on "An Introduction to Statistics" by Mood et al. (2nd edition), "Inferential Statistics" by Casella and Berger.
- **Regression Analysis**
  Based on "Introduction to Linear Regression" by Montgomery et al. (3rd, 4th, and 5th editions).
- **Time Series Analysis**
  Based on "Time Series Analysis with Applications in R" by Cryer.
- **Design of Experiments**
  Based on "Design and Analysis of Experiments" by Montgomery (3rd, 4th, and 5th editions).
- **Stochastic Processes**
  Based on "A First Course in Probability" by Sheldon Ross, and "Elementary Probability Theory with Stochastic Processes" by Chung K.L.
- **Categorical Data Analysis**
  Based on "An Introduction to Categorical Data Analysis" by Alan Agresti (2nd edition).
- **Financial Mathematics**
  Based on "Actuarial Mathematics" by Bowers et al. and "Life Insurance Mathematics" by Gerber.
- **Statistical Computing**
  Used various online resources and statistical software, including MINITAB, SPSS, R, and Microsoft Excel.
- **Official Statistics**

Postgraduate Courses:

- **Principles of Insurance**
  Based on "Fundamentals of Risk and Insurance" by Vaughan and Vaughan (11th edition) and "Loss Models: From Data to Decision" by Klugman et al. (3rd edition).
- **Selected Topics in Time Series Analysis**
  Based on "Analysis of Time Series Structure: SSA and Related Techniques" by Golyandina et al.
- **Financial Time Series Analysis**
  Based on "An introduction to analysis of financial data with R" by Tsay.
- **Advanced Statistics for Demography**
  Covered data preparation, regression analysis, forecasting, and categorical data analysis using a variety of sources.

Service Courses:
I have also taught introductory probability and statistics courses to students in Management, Economics, Biology, Engineering, Agricultural Sciences, Physical Education, Nursing, and Social Sciences.