CURRICULUM VITAE

YAAKOV MALINOVSKY **June 27, 2023**

University of Maryland, Baltimore County
Department of Mathematics and Statistics
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Education:

Ph.D.	2009	The Hebrew University of Jerusalem, Israel	Statistics
M.A.	2002	The Hebrew University of Jerusalem, Israel	Statistics with Operation Research
B.A.	1999	The Hebrew University of Jerusalem, Israel	Statistics (Summa Cum Laude)

Experience in Higher Education:

From July 1, 2017 , University of Maryland, Baltimore County, Associate Professor, Mathematics and Statistics.

Fall 2011 – 2017, University of Maryland, Baltimore County, Assistant Professor, Mathematics and Statistics.

September 2009 – August 2011, NICHD, Visiting Fellow.

Spring 2003 – Spring 2007, The Hebrew University in Jerusalem, Instructor, Statistics.

2000–2004, The Open University, Israel, Instructor, Mathematics and Computer Science.

Service to the Profession

Associate Editor, Methodology and Computing in Applied Probability , May 2023-present

Associate Editor, The American Statistician, August 2017-present

Associate Editor, Journal of Applied Statistics, February 2017-March 2019

Research Support

2021–2025 Israel-US Binational Science Foundation: Grant no. 2020063 "Minimax online learning policies in stochastic sequential selection and assignment," [with A. Goldenshluger, Haifa U and A. Zeevi, Columbia U], total $\$140,000$.

2012 Summer Faculty Fellowship, UMBC, $\$6,000$

2013 Summer Faculty Fellowship, UMBC, $\$6,000$

Scholarships & Awards:

2014 NSF registration award for Frontiers of Hierarchical Modeling in Observational Studies, Complex surveys and Big Data
2014 IMS Meeting of New Researchers Travel award
2012 Summer Faculty Fellowship, UMBC.
2013 Summer Faculty Fellowship, UMBC.
2010 IMS Meeting of New Researchers Travel award
2010 Borrowing Strength, A Festschrift for Lawrence D. Brown, Travel award
2003 Hebrew University Yochi Wax prize for PhD student
2001 Hebrew University Rector fellowship
1996 Hebrew University Dean's award
1995 Hebrew University Dean's list

Academic visiting:

Biostatistics Research Branch NIAID (June-August 2015)
La Sapienza Rome Department of Mathematics (January 2018)
Alfréd Rényi Institute of Mathematics Budapest (June 2018)
Biostatistics Branch NCI (August 2017, August 2018, August 2019)
Haifa University Department of Statistics (October 2018 - January 2019, June-July 2022, January 2023, June 2023)
Summer (Virtually) at Census (US Census Bureau, June 2022).

Ph.D. Students:

Maria Barouti, defended May 2016 (co-adviser)
Current position: Professorial Lecturer, Mathematics & Statistics, American University
Gregory Haber, defended May 2018 (adviser)
Current position: Statistical Design, Analysis, and Modeling Group, NIST

Undergraduate Students:

Tanvi Mehta, National Cancer Institute (2021/2022) (co-adviser).

Ph.D. committees:

Michelle Danaher, defended Fall 2012(reader)
Andrew Raim, defended Spring 2014 (reader)
Zachary Zimmer, defended Spring 2014 (member)
Nilabja Guha, defended Summer 2014 (member)
Jian Zhao, defended Fall 2016 (member)
Ye Yang, defended Fall 2016 (member)
John Zylstra, defended Spring 2018 (reader)

Yun-Ju Cheng, defended Fall 2018 (member)
Wenxin Lu, defended Fall 2019
Rabab Elnaiem, defended Fall 2020 (member)
Michael Daniel Lucagbo, defended Spring 2021 (reader)
Abhishek Guin, defended Fall 2021 (reader)
Mark Ramos Fall, defended Fall 2021 (reader)
Neha Agarwala, defended Spring 2022 (reader)
Yewon Kim Spring, defended 2022 (reader)
Sidd Roy, current (member)
Gaurab Hore, current (member)

Publications:

Peer–Reviewed:

Articles:

1. Alon, N., Malinovsky, Y. Hitting a prime in 2.43 dice rolls (on average). *The American Statistician*, To appear, 2023.

2. Malinovsky, Y., Rinott, Y. On Tournaments and Negative Dependence. *Journal of Applied Probability*, To appear, 2023.

3. Malinovsky, Y. On the distribution of winners' scores in a round-robin tournament. *Probability in the Engineering and Informational Sciences*, 36, 1098–1102, 2022.

4. Malinovsky, Y., Moon, J. W. On the negative dependence inequalities and maximal score in round-robin tournament. *Statistics and Probability Letters*, 185, 109432, 2022.

5. Malinovsky, Y., Zacks, S. Two-stage and sequential unbiased estimation of N in binomial trials, when the probability of success p is unknown. *Sequential Analysis*, 41, 275–284, 2022.

6. Malinovsky, Y. A note on the closed-form solution for the longest head run problem of Abraham de Moivre. *The Mathematical Intelligencer*, 44, 267–268, 2022.

7. Malinovsky, Y. A Short Probabilistic Proof of a Binomial Identity. *The College Mathematics Journal*, 53, 394–395, 2022.

8. Mehta, T., Malinovsky, Y., Abnet, C., Albert, P. Using group testing in a two-phase epidemiologic design to identify the effects of a large number of antibody reactions on disease risk. *BMC Medical Research Methodology*, 22(1), 1–9, 2022.

9. Best, A. F., Malinovsky, Y., Albert, P. S. The efficient design of Nested Group Testing algorithms for disease identification in clustered data. *Journal of Applied Statistics*, Accepted, 2022.

10. Haber, G., Malinovsky, Y., Albert, P. Is Group Testing Ready for Prime-time in Disease Identification? Rejoinder to discussion on Is group testing ready for prime-time in disease identification? *Statistics in Medicine*, Discussion Article, 40, 3865–3880, 3892-3894, 2021.

11. De Santis, E., Malinovsky, Y., and Spizzichino, F. Stochastic precedence and minima among dependent variables. *Methodology and Computing in Applied Probability,* 23, 187–205, 2021.

12. Malinovsky, Y. Conjectures on optimal nested generalized group testing algorithm. *Applied Stochastic Models in Business and Industry*, 36, 1029–1036, 2020.

13. Malinovsky, Y., Haber, G., Albert, P. An optimal design for hierarchical generalized group testing. *JRSS C*, 69, 607–621, 2020.

14. Goldenshluger, A., Malinovsky, Y. and Zeevi, A. A unified approach for solving sequential selection problems. *Probability Surveys*, 17, 214–256, 2020.

15. Haber, G., Malinovsky, Y. On the construction of unbiased estimators for the group testing problem. *Sankhya A*. 82, 220–241, 2020.

16. Malinovsky, Y. Sterrett Procedure for the Generalized Group Testing Problem. *Methodology and Computing in Applied Probability*, 21, 829-840, 2019.

17. Haber, G., Malinovsky, Y. Efficient methods for the estimation of the multinomial parameter for the two-trait group testing model. *Electronic Journal of Statistics*, 13, 2624-2657, 2019.

18. Malinovsky, Y., and P. Albert, P. Revisiting Nested Group Testing Procedures: New results, Comparisons, and Robustness. *American Statistician*. 73, 117-125, 2019.

19. Fay, M., and Malinovsky, Y. Confidence Intervals on the Mann-Whitney parameter that give unified inferences with the Wilcoxon-Mann-Whitney test. *Statistics in Medicine*, 37, 3991–4006, 2018.

20. Malinovsky, Y. On optimal policy in the group testing with incomplete identification. *Statistics and Probability Letters*, 140, 44–47, 2018.

21. Malinovsky, Y., and Zacks, S. Proportional closeness estimation of probability of contamination under group testing. *Sequential Analysis*, 37, 145-157, 2018.

22. Haber, G., Malinovsky, Y., and Albert, P. Sequential estimation in the group testing problem. *Sequential Analysis*, 37, 1–17, 2018.

23. Haber, G., Malinovsky, Y. Random walk designs for selecting pool sizes in group testing estimation with small samples. *Biometrical Journal*, 59, 1382–1398, 2017.

24. Guha, N., Roy, A., Malinovsky, Y., Datta, G. An Optimal Shrinkage Factor in Prediction of Ordered Random Effects. *Statistica Sinica*, 26, 1709–1728, 2016.

25. Kagan, A. M., and Malinovsky, Y. On the structure of UMVUEs. *Sankhya A*, 78, 124–132, 2016.

26. Malinovsky, Y., Albert, P. S., and Roy, A. A note on the evaluation of group testing algorithms in the presence of misclassification, *Biometrics*, 72, 299–304, 2016.

27. Malinovsky, Y., and Albert, P. S. A note on the minimax solution for the two-stage group testing problem, *American Statistician*, 69, 45–52, 2015.

28. Kagan, A. M., Malinovsky, Y., and Mattner, L. Partially Complete Sufficient Statistics are Jointly Complete. *Theory of Probability and its Applications*, 59, 542–561, 2014.

29. Kagan, A. M. and Malinovsky, Y. On the Nile problem by Sir Ronald Fisher, *The Electronic Journal of Statistics*, 7, 1968–1982, 2013.

30. Kagan, A. M. and Malinovsky, Y. Monotonicity in the Sample Size of the Length of Classical Confidence Intervals, *Statistics and Probability Letters*, 83, 78–82, 2013.

31. Malinovsky, Y. and Kogan, J. Monitoring Threshold Functions over Distributed Data Streams with Node Dependent Constraints, *Algorithms*, 5, 379–397, 2012.

32. Vexler, A., Tsai, W. and Malinovsky, Y. Estimation and Testing Based on Data Subject to Measurement Errors: From Parametric to Non-Parametric Likelihood Methods, *Statistics in Medicine*, 31, 2498–2512, 2012.

33. Malinovsky, Y., Albert, P. S. and Schisterman, E. F. Pooling Designs for Outcomes Under a Gaussian Random Effects Model, *Biometrics*, 68, 45–52, 2012.

34. Malinovsky, Y. and Rinott, Y. Best Invariant and Minimax Estimation of Quantiles in Finite Population, *Journal of Statistical Planning and Inference*, 141, 2633–2644, 2011.

35. Malinovsky, Y. and Rinott, Y. Prediction of Ordered Random Effects in a Simple Small Area Model, *Statistica Sinica*, 20, 697–714, 2010.

36. Malinovsky, Y. and Rinott, Y. On stochastic order of absolute value of order statistics in symmetric distribution, *Statistics and Probability Letters*, 79, 2086–2091, 2009.

Referred Conference Proceedings:

37. Kogan, J. and Malinovsky, Y. Monitoring Threshold Functions over Distributed Data Streams with Clustering, *SDM 13 Workshop on Data Mining for Service and Maintenance*, Austin, Texas, 2013.

38. Kogan, J. and Malinovsky, Y. Robust Stability and Monitoring Threshold Functions, *A Workshop in Memory of Arie Leizarowitz*, Israel Mathematics Conference Proceedings (IMCP, 2014), Contemporary Mathematics 619, AMS.

39. Barouti, M., Keren, D., Kogan, J. and Malinovsky, Y. Adaptive Clustering for Monitoring Distributed Data Streams, *SDM 14 Workshop on Exploratory Data Analysis*, Philadelphia, PA, 2014.

40. Barouti, M., Keren, D., Kogan, J. and Malinovsky, Y. Monitoring Distributed Data Streams Through Node Clustering. International Conference on Machine Learning (MLDM'2014), July 21-24, 2014, St. Petersburg, Russia. Springer–Verlag Lecture Notes in Computer Science, Lecture Notes in Artificial Intelligence (LNAI), 149–162.

Referred Book Chapters:

41. Barouti, M., Keren, D., Kogan, J. and Malinovsky, Y. Clustering for Monitoring Distributed Data Streams, in Partitional Clustering Algorithms, M. Emre Celebi (eds.), Springer, 385–413, 2015.

Other and Non-Peer-Reviewed:

42. Malinovsky, Y. and Rinott, Y. Best Invariant and Minimax Estimation of Quantiles in Finite Population, Center for Rationality. The Hebrew University of Jerusalem. Discussion paper 553, 2010.

43. Malinovsky, Y. Book Review. Statistics in the Health Sciences: Theory, Applications, and Computing., *Biometrics*, 75, 356, 2019.

44. Malinovsky, Y. Follow Up on Detecting Deficiencies: An Optimal Group Testing. Mathematics Magazine 92, 398, 2019.

45. Malinovsky, Y., Albert, P. Nested Group Testing Procedures for Screening, 2021. Wiley StatsRef-Statistics Reference Online.

Works Submitted:

46. Malinovsky, Y. A note on the distribution of the extreme degrees of a random graph via the Stein-Chen method.
`https://arxiv.org/abs/2204.05881`

47. Malinovsky, Y., Moon, J. W. On round-robin tournaments with a unique maximum score and some related results.
`https://arxiv.org/abs/2208.14932`

Presentations:

Invited talk at Colloquia:

1. Negative Dependence Notions and Tournament Scores, *Department of Mathematics, Ariel University, Israel*, June, 19, 2023.

2. Group Testing: Some Results and Open Challenges, *Department of Mathematics and Statistics University of North Carolina at Charlotte*, May, 5, 2023.

3. Tournaments and Negative Dependence, *Department of Statistics, University of Haifa, Israel*, January 4, 2023.

4. Hitting a Prime in 2.43 Dice Rolls (on average) and on Round-Robin Tournaments with a Unique Maximum Score. *Rutgers Experimental Mathematics Seminar*, November, 2022. Video of the lecture: `https://vimeo.com/775086637`

5. Group Testing: Some Results and Open Challenges (Invited, Summer in Census Program). *Center for Statistical Research and Methodology, US Census Bureau*, June 2022.

6. A Unified Approach for Solving Sequential Selection Problems (Invited, Summer in Census Program). *Center for Statistical Research and Methodology, US Census Bureau*, June 2022.

7. A Unified Approach for Solving Sequential Selection Problems. *Mathematics Department, Bar-Ilan University*, Online, December 2020.
   Video of the lecture: `https://www.youtube.com/watch?v=XvCuSj_vMM4`.

8. A Unified Approach for Solving Sequential Selection Problems (Invited talk), *Rutgers Business School*, October 10, 2019.

9. "Group Testing: Some Results and Open Problems", *Department of Statistics, The Hebrew University of Jerusalem, Israel*, November 5, 2018.

10. "Group Testing: Some Results and Open Problems", *Department of Statistics, University of Haifa, Israel*, October 31, 2018.

11. "Generalized Group Testing: Some Results and Open Problems", *Department of Mathematics, UMCP*, September 20, 2018.

12. "Revisiting Group Testing Procedures", *Department of Mathematics & Statistics, American University*, March 20, 2018.

13. "Revisiting Group Testing Procedures", *Department of Statistics, George Mason University*, February 23, 2018.

14. "Nested Group Testing Procedures and Generalized GT Problem", *Biostatistics Department, University of North Carolina at Chapel Hill*, September 28, 2017.

15. "Nested Group Testing Procedures and Generalized GT Problem", *IBM Thomas J. Watson Research Center*, August 18, 2017.

16. "Nested Group Testing Procedures and Generalized GT Problem", *Biostatistics Branch, Division of Cancer Epidemiology and Genetics, NCI*, August 7, 2017.

17. "Nested Group Testing Procedures", *Department of Statistics & Operations Research, Tel Aviv University, Israel*, January 10, 2017.

18. "Nested Group Testing Procedures", National Heart, Lung and Blood Institute, NIH, December 13, 2016.

19. "Some Challenging Problems in Group Testing", Department of Biostatistics, University at Buffalo, March 31, 2016.

20. "Some Challenging Problems in Group Testing", Biostatistics Branch, NIAID, April 22, 2015.

21. "Some Challenging Problems in Group Testing", *Department of Statistics, George Mason University*, March 20, 2015.

22. "On the Nile Problem by Sir Ronald Fisher", Math Colloquium, Lehigh University, December 4, 2013.

23. "Prediction of Ordered Random Effects in a Simple Small Area Model, and Related Problems", Center for Statistical Research & Methodology, Bureau of the Census, Washington DC, March 8, 2012.

24. "Monotonicity in the Sample Size of the Length of Classical Confidence Intervals", *Department of Mathematics, UMCP*, February 9, 2012.

25. "Prediction of Ordered Random Effects in a Simple Small Area Model", *Department of Mathematics and Statistics, UMBC*, September 30, 2011.

26. "Pooling designs for outcome under Gaussian random effects model", *Department of Statistics, GWU*, February 11, 2011. The George Washington University. Department of Statistics. February, 2011.

27. "On the Nile problem by Ronald Fisher", *Department of Mathematics, UMCP*, October 25, 2010.

28. "Invariant and minimax strategies for quantiles estimation in sampling from finite population" and "Pooling designs for outcome under Gaussian random effects model", *Department of Mathematics and Statistics, UMBC*, December 13, 2010.

29. "Prediction of Ordered Random Effects in a Simple Small Area Model", *Department of Mathematics, UMCP*, May 6, 2010.

Conferences and Workshops: Invited

30. "On Round-Robin Tournaments with a Unique Maximum Score and Some Related Results." International Workshop on Applied Probability, Thessaloniki, Greece, June 2023 (Organized session: Sequential Selection, Best Choice and Games Problems).

31. Tournaments and Negative Dependence (Accepted Poster). *Rényi 100, Budapest, Hungary*, June 2022.

32. "Group Testing: Some Results and Open Challenges." *UP-STAT 2022 Hybrid Conference, University of Buffalo*, May, 2022.

33. A Unified Approach for Solving Sequential Selection Problems. *Bernoulli-IMS 10th World Congress in Probability and Statistics* (Invited talk), Online, July 2021.

34. "Group Testing for Identifying Cases of COVID-19: Opportunities and Challenges," *ENAR*, Online, March 2021.

35. "A Unified Approach for Solving Sequential Selection Problems," The Seventh International Workshop in Sequential Methodologies, *The Department of Mathematical Sciences, Binghamton University*, June 20, 2019.

36. "A Sequential Stochastic Assignment Problem with Random Number of Jobs," The 36th Annual Quality and Productivity Research Conference, *American University*, June 11, 2019.

37. "Conjectures on Optimal Nested Generalized Group Testing Algorithm", 2nd Russian-Hungarian Combinatorial Workshop, Alfréd Rényi Institute of Mathematics, Budapest, Hungary, June 28, 2018.

38. "Generalized Group Testing: Some Results and Open Problems", International Workshop on Applied Probability, Budapest, Hungary, June 20, 2018.

39. "Sequential Estimation in the Group Testing", The 34th Quality and Productivity Research Conference, *Department of Statistics, University of Connecticut*, June 13, 2017.

40. "Revisiting Nested Group Testing Procedures: New Results, Comparisons, Robustness", Latent Variables Conference, The University of South Carolina, October 14, 2016.

41. "Revisiting Nested Group Testing Procedures: New Results, Comparisons, Robustness", International Workshop on Applied Probability, Toronto, Canada, June 21, 2016.

42. "On the structure of UMVUEs", The 2nd Russian-Indian Joint Conference in Statistics and Probability, Saint-Petersburg, Russia, 31 May, 2016.

43. "Minimax Solution for the Two-Stage Group Testing Problem" (Travel Award), 16-th Annual IMS Meeting of New Researchers in Statistics and Probability, Harvard University, July 31-August 2, 2014.

44. "Invariant and Minimax Strategies for Quantiles Estimation in Sampling from Finite Population (poster)" (NSF Registration Award), Frontiers of Hierarchical Modeling in Observational Studies, Complex Surveys and Big Data: A Conference Honoring Professor Malay Ghosh, College Park, Maryland, May 28-31, 2014.

45. "Invariant and Minimax Strategies for Quantiles Estimation in Sampling from Finite Population", Ordered Data Analysis, Models and Health Research Methods: An International Conference in Honor of H.N. Nagaraja for His 60th Birthday. UT Dallas, March 7, 2014.

46. "Some Open Problems in Mathematical Statistics: Existence of UMVUE's", Fourth International Workshop in Sequential Methodologies, Athens, Georgia, July 19, 2013.

47. "Pooling Designs for Outcomes Under a Gaussian Random Effects Model", ENAR, Washington DC, April 3, 2012.

48. "Invariant and minimax strategies for quantiles estimation in sampling from finite population (poster)" (Travel Award), Borrowing Strength Theory Powering Applications workshop in honor of Larry Brown's 70th Birthday, "Wharton School of the University of Pennsylvania", Philadelphia, PA, December, 2010.

49. "Best invariant and minimax nonparametric estimation of quantiles in finite population" (Travel Award), 13-th Annual IMS Meeting of New Researchers in Statistics and Probability, Vancouver, Canada, July 27, 2010.

50. "Pooling Strategies for Outcome Under a Gaussian Random Effects Model", American Chemistry Council meeting, NICHD, May 20, 2010.

51. "Pooling Strategies for Outcome Under a Gaussian Random Effects Model", ENAR, New Orleans, March 22, 2010.

Conferences and Workshops: Contributed

52. On Maximal Scores in Round-Robin Tournaments. *53rd Southeastern International Conference on Combinatorics, Graph Theory & Computing*, March, 2022.

53. "Sterrett Procedure for the Generalized Group Testing Problem", INFORMS Applied Probability Society Conference 2017, *Kellogg School of Management and the McCormick School of Engineering*, July 11, 2017.

54. "Evaluation of Group Testing Algorithms in the Presence of Misclassification", JSM, Seattle, Washington, August 11, 2015.

55. "Minimax Solution for the Two-Stage Group Testing Problem", JSM, Boston, Massachusetts, August 6, 2014.

56. "On the Nile Problem by Sir Ronald Fisher", JSM, Montréal, Québec, Canada , August 8, 2013.

57. "Monotonicity in the Sample Size of the Length of Classical Confidence Intervals", JSM, San Diego, August 2, 2012.

58. "Prediction of Ordered Random Effects in a Simple Small Area Model", SSC and SFdF Conference, Ottawa, Canada, May 28, 2008.

Service:

Departmental Service:

Member, Statistics Graduate Program Committee, Fall 2017-present.
Member, Basic Probability Comprehensive Exam Committee, Fall 2012 - present.
Member, Basic Mathematical Statistics Comprehensive Exam Committee, Spring 2013 - present.
Organizer, weekly Statistics Colloquium, Spring 2012, Fall 2013, Spring 2013, Spring 2016, Fall 2016, Spring 2017.
Member, Workload committee, Fall 2012, Spring 2013.
Member, Statistics Faculty Search committee, Fall 2019, 2022 and Spring 2020, 2023
Member, DEIA committee, Spring 2023-current.

College, University and Community Service:

Judge, Graduate Student Day, Spring 2012.
Organizing committee of the Statistics and Probability day conference, 2012-current.
START FY23 selection committee.
2022-2023 Arbitrary and Capricious Grading Review Panel.
Fall 2022-current The Faculty Senate: open access policies.
University of Maryland Graduate School (UMGSB) Graduate Council, 2023-2025.

Referee for papers in the following journals:

ANZJS
Bernoulli
Biometrics
Biostatistics
Communications in Statistics: Theory and Methods
Computational Statistics & Data Analysis
European Journal of Operational Research
Journal of Applied Statistics
Journal of Statistical Planning and Inference
Journal of the Royal Statistical Society: Series A and Series C
Mathematics of Operations Research
Mathematical Reviews
Metrika
Metron

Operations Research
REVSTAT
Sankhya A
South African Journal of Statistics
Statistics and Probability Letters
Statistics in Medicine
The American Statistician.

Referee for Grant Proposal:

The Army Research Office (2014)
NSF (2016)
Reviewer, NSF DMS Review Panel, January 2017.

Membership:

American Statistical Association
Applied Probability Society, INFORMS
Bernoulli Society
Institute of Mathematical Statistics