

CURRICULUM VITAE

YAAKOV MALINOVSKY

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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.

Research Support

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] 10/2021– 10/2025.

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).

Ph.D. Students:

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

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), Michael Daniel Lucagbo, defended Spring 2021 (reader), Mark Ramos, defended Fall 2021 (reader).

Publications:

Peer-Reviewed:

Articles:

1. Malinovsky, Y. A note on the closed-form solution for the longest head run problem of Abraham de Moivre. *The Mathematical Intelligencer*, Accepted, 2021.
2. Malinovsky, Y. On the distribution of winners' scores in a round-robin tournament. *Probability in the Engineering and Informational Sciences*, In Press, 2021.
3. Malinovsky, Y. A Short Probabilistic Proof of a Binomial Identity. *The College Mathematics Journal*, Accepted, 2021.
4. 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.

5. 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.
6. Malinovsky, Y. Conjectures on optimal nested generalized group testing algorithm. *Applied Stochastic Models in Business and Industry*, 36, 1029–1036, 2020.
7. Malinovsky, Y., Haber, G., Albert, P. An optimal design for hierarchical generalized group testing. *JRSS C*, 69, 607–621, 2020.
8. Goldenshluger, A., Malinovsky, Y. and Zeevi, A. A unified approach for solving sequential selection problems. *Probability Surveys*, 17, 214–256, 2020.
9. Haber, G., Malinovsky, Y. On the construction of unbiased estimators for the group testing problem. *Sankhya A*. 82, 220–241, 2020.
10. Malinovsky, Y. Sterrett Procedure for the Generalized Group Testing Problem. *Methodology and Computing in Applied Probability*, 21, 829–840, 2019.
11. 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.
12. Malinovsky, Y., and P. Albert, P. Revisiting Nested Group Testing Procedures: New results, Comparisons, and Robustness. *American Statistician*. 73, 117–125, 2019.
13. 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.
14. Malinovsky, Y. On optimal policy in the group testing with incomplete identification. *Statistics and Probability Letters*, 140, 44–47, 2018.
15. Malinovsky, Y., and Zacks, S. Proportional closeness estimation of probability of contamination under group testing. *Sequential Analysis*, 37, 145–157, 2018.
16. Haber, G., Malinovsky, Y., and Albert, P. Sequential estimation in the group testing problem. *Sequential Analysis*, 37, 1–17, 2018.
17. Haber, G., Malinovsky, Y. Random walk designs for selecting pool sizes in group testing estimation with small samples. *Biometrical Journal*, 59, 1382–1398, 2017.
18. Guha, N., Roy, A., Malinovsky, Y., Datta, G. An Optimal Shrinkage Factor in Prediction of Ordered Random Effects. *Statistica Sinica*, 26, 1709–1728, 2016.
19. Kagan, A. M., and Malinovsky, Y. On the structure of UMVUEs. *Sankhya A*, 78, 124–132, 2016.
20. 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.

21. 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.
22. 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.
23. Kagan, A. M. and Malinovsky, Y. On the Nile problem by Sir Ronald Fisher, *The Electronic Journal of Statistics*, 7, 1968–1982, 2013.
24. 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.
25. Malinovsky, Y. and Kogan, J. Monitoring Threshold Functions over Distributed Data Streams with Node Dependent Constraints, *Algorithms*, 5, 379–397, 2012.
26. 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.
27. Malinovsky, Y., Albert, P. S. and Schisterman, E. F. Pooling Designs for Outcomes Under a Gaussian Random Effects Model, *Biometrics*, 68, 45–52, 2012.
28. 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.
29. Malinovsky, Y. and Rinott, Y. Prediction of Ordered Random Effects in a Simple Small Area Model, *Statistica Sinica*, 20, 697–714, 2010.
30. 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:

31. 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.
32. 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.
33. 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.

34. Barouti, M., Keren, D., Kogan, J. and Malinovsky, Y. Monitoring Distributed Data Streams Through Node Clustering. International Conference on Machine Learning (MLDM2014), July 21-24, 2014, St. Petersburg, Russia. SpringerVerlag Lecture Notes in Computer Science, Lecture Notes in Artificial Intelligence (LNAI), 149–162.

Referred Book Chapters:

35. 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.

Non-Peer-Reviewed:

36. 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.
37. Malinovsky, Y. Book Review. *Statistics in the Health Sciences: Theory, Applications, and Computing.*, *Biometrics*, 75, 356, 2019.
38. Malinovsky, Y. Follow Up on Detecting Deficiencies: An Optimal Group Testing. *Mathematics Magazine* 92, 398, 2019.
39. Malinovsky, Y., Albert, P. Nested Group Testing Procedures for Screening, 2021. Accepted in Wiley StatsRef-Statistics Reference Online.

Works Submitted:

40. Best, A., Malinovsky, Y., Albert, P. The efficient design of nested group testing algorithms for disease identification in clustered data.
41. Malinovsky, Y., Moon, J. W. On the negative dependence inequalities and maximal score in round-robin tournament (available in my web page).
42. 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.
43. Malinovsky, Y., and Zacks, S. Two-Stage and Sequential Unbiased Estimation of N in Binomial Trials, when the Probability of Success p is Unknown (available in my web page).

Presentations:

1. A unified approach for solving sequential selection problems. *Bernoulli-IMS 10th World Congress in Probability and Statistics*, Online, July 2021.

2. "Group Testing for Identifying Cases of COVID-19: Opportunities and Challenges." *ENAR*, Online, March 2021.
3. "A Unified Approach for Solving Sequential Selection Problems" (Invited talk), *Rutgers Business School*, October 10, 2019.
4. "A Unified Approach for Solving Sequential Selection Problems" (Invited talk), The Seventh International Workshop in Sequential Methodologies, *The Department of Mathematical Sciences, Binghamton University*, June 20, 2019.
5. "A Sequential Stochastic Assignment Problem with Random Number of Jobs" (Invited talk), The 36th Annual Quality and Productivity Research Conference, *American University*, June 11, 2019.
6. "Group Testing: Some Results and Open Problems", *Department of Statistics, The Hebrew University of Jerusalem, Israel*, November 5, 2018.
7. "Group Testing: Some Results and Open Problems", *Department of Statistics, University of Haifa, Israel*, October 31, 2018.
8. "Generalized Group Testing: Some Results and Open Problems", *Department of Mathematics, UMCP*, September 20, 2018.
9. "Conjectures on Optimal Nested Generalized Group Testing Algorithm", 2nd Russian-Hungarian Combinatorial Workshop, Alfréd Rényi Institute of Mathematics, Budapest, Hungary, June 28, 2018.
10. "Generalized Group Testing: Some Results and Open Problems" (Invited talk), International Workshop on Applied Probability, Budapest, Hungary, June 20, 2018.
11. "Revisiting Group Testing Procedures", *Department of Mathematics & Statistics, American University*, March 20, 2018.
12. "Revisiting Group Testing Procedures", *Department of Statistics, George Mason University*, February 23, 2018.
13. "Nested Group Testing Procedures and Generalized GT Problem", *Biostatistics Department, University of North Carolina at Chapel Hill*, September 28, 2017.
14. "Nested Group Testing Procedures and Generalized GT Problem", *IBM Thomas J. Watson Research Center*, August 18, 2017.
15. "Nested Group Testing Procedures and Generalized GT Problem", *Biostatistics Branch, Division of Cancer Epidemiology and Genetics, NCI*, August 7, 2017.
16. "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.

17. “Sequential Estimation in the Group Testing”, The 34th Quality and Productivity Research Conference, *Department of Statistics, University of Connecticut*, June 13, 2017.
18. “Nested Group Testing Procedures”, *Department of Statistics & Operations Research, Tel Aviv University, Israel*, January 10, 2017.
19. “Nested Group Testing Procedures”, National Heart, Lung and Blood Institute, NIH, December 13, 2016.
20. “Revisiting Nested Group Testing Procedures: New Results, Comparisons, Robustness” (Invited talk), Latent Variables Conference, The University of South Carolina, October 14, 2016.
21. “Revisiting Nested Group Testing Procedures: New Results, Comparisons, Robustness” (Invited talk), International Workshop on Applied Probability, Toronto, Canada, June 21, 2016.
22. “On the structure of UMVUEs” (Invited talk), The 2nd Russian-Indian Joint Conference in Statistics and Probability, Saint-Petersburg, Russia, 31 May, 2016.
23. “Some Challenging Problems in Group Testing”, Department of Biostatistics, University at Buffalo, March 31, 2016.
24. “Evaluation of Group Testing Algorithms in the Presence of Misclassification”, JSM, Seattle, Washington, August 11, 2015.
25. “Some Challenging Problems in Group Testing”, Biostatistics Branch, NIAID, April 22, 2015.
26. “Some Challenging Problems in Group Testing”, *Department of Statistics, George Mason University*, March 20, 2015.
27. “Minimax Solution for the Two-Stage Group Testing Problem” (Travel Award), 16th Annual IMS Meeting of New Researchers in Statistics and Probability, Harvard University, July 31-August 2, 2014.
28. “Minimax Solution for the Two-Stage Group Testing Problem”, JSM, Boston, Massachusetts, August 6, 2014.
29. “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.
30. “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.

31. "On the Nile Problem by Sir Ronald Fisher", Math Colloquium, Lehigh University, December 4, 2013.
32. "On the Nile Problem by Sir Ronald Fisher", JSM, Montréal, Québec, Canada , August 8, 2013.
33. "Some Open Problems in Mathematical Statistics: Existence of UMVUE's" (Invited talk), Fourth International Workshop in Sequential Methodologies, Athens, Georgia, July 19, 2013.
34. "On the Nile problem by Ronald Fisher" , *Department of Mathematics, UMCP*, October 25, 2010.
35. "Monotonicity in the Sample Size of the Length of Classical Confidence Intervals" , JSM, San Diego, August 2, 2012.
36. "Pooling Designs for Outcomes Under a Gaussian Random Effects Model" (Invited talk), ENAR, Washington DC, April 3, 2012.
37. "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.
38. "Monotonicity in the Sample Size of the Length of Classical Confidence Intervals" , *Department of Mathematics, UMCP*, February 9, 2012.
39. "Prediction of Ordered Random Effects in a Simple Small Area Model" , *Department of Mathematics and Statistics, UMBC*, September 30, 2011.
40. "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.
41. "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.
42. "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.
43. "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.
44. "Pooling Strategies for Outcome Under a Gaussian Random Effects Model" , American Chemistry Council meeting, NICHD, May 20, 2010.

45. "Prediction of Ordered Random Effects in a Simple Small Area Model", *Department of Mathematics, UMCP*, May 6, 2010.
46. "Pooling Strategies for Outcome Under a Gaussian Random Effects Model", ENAR, New Orleans, March 22, 2010.
47. "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 and Spring 2020.

College, University and Community Service:

Judge, Graduate Student Day, Spring 2012.

Organizing committee of the Statistics and Probability day conference, 2012-2018.

Service to the Profession:

Associate Editor, *The American Statistician*, August 2017-present

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

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*, *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:

Applied Probability Society, INFORMS

Bernoulli Society

Institute of Mathematical Statistics