

Professional Experience

New York University, Assistant Professor of Applied Statistics, 2014 - Present.

Center for the Promotion of Research Involving Innovative Statistical Methodology
Department of Applied Statistics, Social Science, and Humanities
Steinhardt School of Culture, Education and Human Development

Affiliated Faculty: NYU Center for Data Science, NYU Population Center.

Education

Ph.D. Mathematics and Statistics, McGill University, 2014.

Dissertation: The effect of model misspecification for polytomous logistic adjacent category item response theory models. Advisor: Russell Steele

B.Sc. Probability and Statistics, First Class Honors, McGill University, 2010.

Publications

Journal Articles

*Campbell, H., **Harel, D.**, & McAllister Byun, T. Selecting an acoustic correlate for automated measurement of /r/ production in children. *International Journal of Speech-Language Pathology*. (In press)

Lubetzky, A.V., **Harel, D.**, Darmanin, H., & Perlin, K. Assessment via the Oculus of visual ‘weighting’ and ‘re-weighting’ in young adults. *Motor Control*. (2017), Epub ahead of print. DOI: 10.1123/mc.2016-0045

***Harel, D.**, Hitchcock, E.R., Ortiz, J., Szeredi, D., & McAllister Byun, T. Finding the experts in the crowd: Validity and reliability of crowdsourced measures of children’s gradient speech contrasts. *Clinical Linguistics & Phonetics*. (2017), 31(1):104-117.

McAllister Byun, T., **Harel, D.**, Halpin, P., & Szeredi, D. Deriving gradient measures of child speech from crowdsourced ratings. *Journal of Communication Disorders*. (2016), 64:91-102.

*Levis, A.W., **Harel, D.**, Kwakkenbos, L., Carrier, M., Mouthon, L., Poiraudreau, S., Bartlett, S.J., Khanna, D., Malcarne, V.L., Sauve, M., Poole, J.L., Schouffoer, A.A., van den Ende, C.H.M., Welling, J., Thombs, B.D., & SPIN Investigators. Using Optimal Test Assembly methods for shortening patient-reported outcome measures: Development and validation of the Cochin Hand Function Scale-6. *Arthritis Care & Research*. (2016), 68(11):1704-1713.

***Harel, D.**, Hudson, M., Iliescu, A., Baron, M., & Steele, R.J. on behalf of the CSRG. Summed and weighted summary scores for the Medsger Disease Severity Scale compared with a Physician Global Assessment of Disease Severity in Systemic Sclerosis. *Journal of Rheumatology*. (2016), 43(8):1510-1518.

*Indicates papers as leading author, including first or corresponding author.
Indicates names of my supervised trainees or students

Hitchcock, E.R., **Harel, D.**, & McAllister Byun, T. Social, emotional, and academic impact of residual speech errors in school-age children: A survey study. *Seminars in Speech and Language*. Thieme Medical Publishers. (2015), 36(4):283-294.

***Harel, D.**, Thombs, B.D., Hudson, M., Baron, M., & Steele, R.J. on behalf of the CSRG. Measuring fatigue in Systemic Sclerosis: A comparison of the SF-36 Vitality subscale and FACIT Fatigue scale. *Rheumatology*. (2012), 51(12):2177-2185.

Book Chapters

***Harel, D.**, & Wentland, E. Survey use in academic contexts: considerations and guidelines. In Secolsky, C. & Denison, D.B. (Eds), *Handbook on Measurement, Assessment and Evaluation in Higher Education*. (2nd ed.) Routledge. (2017).

Extended Abstracts and Conference Proceedings

McAllister Byun, T., Hitchcock, E., & **Harel, D.** Validating and optimizing a crowd-sourced method for gradient measures of child speech. Proceedings of Interspeech 2015 Special Session: Advanced Crowdsourcing for Speech and Beyond, Germany. (2015).

McAllister Byun, T., Halpin, P., & **Harel, D.** Crowdsourcing for gradient ratings of child speech: Comparing three methods of response aggregation. Proceedings of 18th International Conference of Phonetic Sciences, Glasgow, UK. (2015).

Under Review

***Harel, D.**, & Steele, R.J. An information matrix test for the collapsing of categories under the partial credit model. (Under Review) *Journal of Educational and Behavioral Statistics*.

*Fernández, D., **Harel, D.**, Ipeirotis, P., & McAllister Byun, T. Statistical considerations for crowdsourced perceptual ratings of human speech productions. (Under Review) *Statistical Analysis and Data Mining*.

Lubetzky, A.V., Kary, E., **Harel, D.**, Hujsak, B., & Perlin, K. Feasibility and reliability of a virtual reality Oculus platform to measure sensory integration for postural control in young adults. (Under Review). *Physiotherapy Theory and Practice*.

In Preparation

*Ishihara, M., **Harel, D.**, Levis, B., Levis, A.W., & Thombs, B.D. Using Optimal Test Assembly methods for shortening patient-reported outcome measures: Development and validation of the Patient Health Questionnaire - 6. (In Preparation).

***Harel, D.** Optimal methods for shortening patient-reported outcome measures. (In Preparation).

***Harel, D.** Mixed Effect Models for Speech-Language Pathology. (In Preparation).

Research Grants

Extramural Awards

Youth, Peace, and Violence in Nairobi and Karachi: Testing Educational Assumptions.
Amount: \$1,000,000, *Spencer Foundation: Lyle Spencer Award*
Co-PI, with Dana Burde, Elisabeth King (PIs) and Jennifer Hill (Co-PI), 2016 - 2018.

Emerging Team: The Scleroderma Patient-centered Intervention Network.
Canadian Institutes of Health Research. Emerging Team Grant: Rare Diseases.
Amount: \$1,499,765 with an additional \$205,000 in partner funding.
Co-Investigator, with Brett Thombs (PI), 2012 - 2017.

Developing Short-Forms of Patient-reported Outcome Measures for Rheumatology
Canadian Institute for Health Research, Undergraduate Summer Studentship Award
Amount: \$5,000 for undergraduate student, Alexander Levis, Rank 3/73.
Principal Investigator, with Brett Thombs, 2015.

Model misspecification in polytomous logistic adjacent-category item response models.
Institute de Science Mathematiques Predoctoral Fellowship.
Amount: \$7,000.
Principal Investigator, 2013 - 2014.

Measuring fatigue and disease severity in Systemic Sclerosis
Canadian Scleroderma Research Group Training Program Predoctoral Fellowship.
Amount: \$46,000 including \$9,000 via the Maysie MacSporran Award
Principal Investigator, 2010 - 2013.

Intramural Awards

Estimating rater quality in a crowdsourced speech rating task
NYU Center for Data Science Moore-Sloane Environment
Amount: \$130,000 in direct costs.
Principal Investigator, with Panos Ipeirotis, Tara McAllister Byun, 2016 - 2018.

TalkBirdy: A Crowdsourced Platform to Evaluate Human Speech Production
University Research Challenge Fund, New York University
Amount: \$11,000
Principal Investigator, with Tara McAllister Byun (PI), R Luke DuBois (Co-I), Mario Svirsky (Co-I), Panos Ipeirotis (Co-I), 2016 - 2017.

Virtual Reality Clinical Assessment of Visuomotor Function and Visual Integration for Postural Control for Patients with Vestibular Dysfunction
Steinhardt Research Development Award, New York University
Amount: \$10,000
Co-Investigator, with Anat Lubetzky-Vilnai and Ken Perlin (PIs), 2016 - 2017.

Clinical, Morphological and Functional Success Predictors Following Lumbar Spinal Surgery in Patients with Chronic Low Back Pain and Degenerative Disorders Phase 1
University Research Challenge Fund, New York University
Amount: \$11,000
Co-Investigator, with Marilyn Moffat and Anat Lubetzky-Vilnai (PIs), 2015 - 2016.

Fellowships and Awards

NYU Steinhardt HMSS High Merit Award	2016
ETS/IMPS Student Travel Award (\$500)	2013
Graduate Excellence Award (\$6,000)	2012 - 2013
Departmental Teaching Assistant Award (\$250)	2011, 2012
McGill Graduate Student Fellowship (\$5,000)	2011 - 2012
CSRG Best Clinical Trainee Abstract	2011
Provost's Graduate Fellowship (\$5,000)	2010 - 2011

Conference Activity

Presentations

McAllister Byun, T.[†], Hitchcock, E., **Harel, D.**, & Lopez, M. (2017). Students' perceptual ratings of child speech: Accuracy, efficiency, and gamification. International Child Phonology Conference, Washington, DC.

McAllister Byun, T.[†], Hitchcock, E., **Harel, D.**, & Lopez, M. (2017). Not-quite-naive listeners: Students as an audience for gamified crowdsourcing. Meeting of the Acoustical Society of America. Boston, MA.

Lubetzky, A.V.[†], **Harel, D.**, Darmanin, H., Kary, E., Perlin, K. (2017) Assessment of Visual Dependence for Postural Control in Young Adults using the Oculus Development Kit 2. APTA Combined Sections Meeting. San Antonio, TX.

Levis, A.W.[†], **Harel, D.**, Kwakkenbos, L., & Thombs, B.D. (2016) Using Optimal Test Assembly Methods for Shortening Patient-Reported Outcome Measures: Development and Validation of the Cochin Hand Function Scale-6. Statistical Society of Canada Annual Meeting. St. Catharines, Ontario.

Hitchcock, E.R.[†], **Harel, D.**, & McAllister Byun, T. (2015) When should we treat residual speech errors? Survey data on social, emotional, and academic impacts. Technical Seminar presentation at the American Speech-Language-Hearing Association National Convention, Denver, CO.

Harel, D.[†], Steele, R.J., Thombs, B.D., Hudson, M., Baron, M. & the CSRG. (2015). A Weighted Summed Score for the Center for Epidemiologic Studies - Depression Scale in Systemic Sclerosis. Joint Statistical Meetings, Seattle, WA.

McAllister Byun, T.[†], Halpin, P., & **Harel, D.** (2015) Crowdsourcing for gradient ratings of child speech: Comparing three methods of response aggregation. 18th International Conference of Phonetic Sciences, Glasgow, UK. *Selected for highly selective discussant session.*

Harel, D.[†], Steele, R.J. (2012) Measuring Disease Severity in Patients with Systemic Sclerosis. Canadian Scleroderma Research Group Annual Meeting. Vancouver, BC.

Harel, D.[†], Steele, R.J. (2011) Measuring Fatigue in Patients with Systemic Sclerosis: the SF-36 or the FACIT? Canadian Arthritis Network and Canadian Scleroderma Research Group Annual Meeting. Quebec City, Quebec. *Invited, award winner*

[†] Indicates presenting author.

Harel, D.[†], Steele, R.J. (2010) Comparing Fatigue in Scleroderma Patients. Canadian Scleroderma Research Group Annual Meeting. Halifax, Nova Scotia.

Harel, D.[†] (2010) Item Response Theory: an Application to LSAT Scores. Seminars in Undergraduate Mathematics in Montreal. Montreal, Quebec.

Posters

Harel, D.[†], Levis, A.W., Kwakkenbos, L., & Thombs, B.D. (2017) Using Optimal Test Assembly Methods to Shorten Patient-Reported Outcome Measures. ENAR Spring Meeting. Washington, DC.

Lubetzky, A.V.[†], Masharawi, Y., **Harel, D.**, Burr, J., Errico, T., Bendo, J., Moffat, M. (2017) Body Functions Activity Limitations and Participation Restrictions in patients with chronic low back pain who choose to undergo lumbar spine surgery. APTA Combined Sections Meeting. San Antonio, TX.

McAllister Byun, T.[†], **Harel, D.**, Hitchcock, E.R., Ortiz, J., Szeredi, D. (2016) Finding experts in the crowd: Validity and reliability of crowdsourced listeners' ratings of clinical speech samples. Motor Speech Conference, Newport Beach, CA.

McAllister Byun, T.[†], **Harel, D.**, Hitchcock, E.R., Ortiz, J., Szeredi, D. (2016) Predicting crowdsourced listeners' ability to detect gradient phonetic contrast in child speech. Linguistics Society of America Annual Meeting, Washington, DC.

McAllister Byun, T.[†], Hitchcock, E.R., & **Harel, D.** (2015) Validating and optimizing a crowdsourced method for gradient measures of child speech. Interspeech 2015 Special Session: Advanced Crowdsourcing for Speech and Beyond, Germany.

Harel, D.[†], Steele, R.J. (2013) Assessing the Utility of the Summed Score and Weighted Summed Score for Stochastic Ordering in the Generalized Partial Credit Model. International Meeting of the Psychometrics Society: Arnhem, Netherlands

Harel, D.[†], Hudson, M., Illiescu, A., Baron, M., the CSRG, Steele, R.J. (2012) Measuring Disease Severity in Systemic Sclerosis. Scleroderma Society of Canada Meeting.

Harel, D.[†], Thombs, B.D., Hudson, M., Baron, M., the CSRG, Steele, R.J. (2011) Measuring Fatigue in Systemic Sclerosis: the SF-36 or the FACIT? Scleroderma Society of Canada Meeting. Quebec City, QC.

Harel, D.[†], Steele, R.J., Thombs, B.D., the CSRG, and Baron, M. (2010) Analysis of Fatigue Instruments in Patients with SSc. Scleroderma Society of Canada Meeting.

Invited Presentations for Research Groups

Fordham University (2016), New York University (2013, 2014, 2015, 2016), Université de Montréal (2014), Educational Testing Services (2014), McGill University (2012, 2013), Canadian Scleroderma Research Group (2011, 2012, 2013).

Advising

Postdoctoral Fellows

Daniel Fernandez (2016, with Panos Ipeiroitis and Tara McAllister Byun)

Doctoral Students

Heather Campbell (Expected 2019, chair: Tara McAllister Byun)
Benjamin Selznick (2017, chair: Matthew Mayhew)
Sarah Randall Johnson (2016, chair: Frances Stage)

Masters Students

Miyabi Ishihara (2017)
Mayari Montes de Oca Salinas (2016)
Alexander Levis (2015, with Brett Thombs)

Teaching

New York University

Graduate: Applied Probability, Survey Research Methodology, Statistical Inference
Undergraduate: Statistical Mysteries (and how to solve them!)

McGill University

Undergraduate: Principles of Statistics I

Professional Activities

Journal reviews: *Applied Psychological Measurement; Applied Clinical Informatics; Arthritis Care & Research; Health and Quality of Life Outcomes; Journal of Psychosomatic Research; Journal of Speech, Language, and Hearing Research; PLoS-ONE; Quality of Life Research.*

Conference, Grant, or Book reviews: Crowdsourcing and Online Behavioral Experiments, CRDF Global: Global Center for Food Systems Innovation Grants, Johns Hopkins University Press

Professional Associations:

American Statistical Association, Member	2015 - Present
American Education Research Association, Member	2015 - Present
National Council on Measurement in Education, Member	2015 - Present
Psychometric Society, Member	2014 - Present
Statistical Society of Canada, Member	2012 - 2014

Committees and Service

New York University

Benefits and Housing Committee of the Tenure/Tenure-Track Faculty Senators Council	2015 - 2016
Committee Member	

Steinhardt School

Mitchell Leaska Dissertation Awards, Reviewer	2016
Steinhardt Faculty Challenge Grants, Reviewer	2015

PRIISM Center/ASH Department

A3SR Professional Development Committee, Chair	2016 - Present
A3SR Curriculum Committee, Member	2016 - Present
A3SR M.Sc. Admissions Committee, Chair	2015 - Present
Applied Statistics Seminar Series, Organizer	2015 - Present

McGill University

Committee of Graduate Affairs	2010 - 2013
Committee of Undergraduate Affairs	2008 - 2010