

Yossef Steinberg, Ph.D

CURRICULUM VITAE

Updated: March 2014

Prof. Yossef Steinberg
Faculty of Electrical Engineering
Technion - IIT
Technion City, Haifa 32000
Israel
e-mail ysteinbe@ee.technion.ac.il

url: <http://ysteinbe.eew.technion.ac.il/>

Academic Degrees

- Ph.D. in Electrical Engineering. Date of confirm: 1991,
Department of Electrical Engineering, Tel-Aviv University.
Supervisors: Prof. Zeev Schuss, Department of Applied Mathematics,
and Prof. B. Z. Bobrovsky, Department of EE.
- M.Sc. Electrical Engineering, Magna Cum Laude. Date: 1986,
Department of Electrical Engineering, Tel-Aviv University.
Supervisor: Prof. B. Z. Bobrovsky, Department of EE.
- B.Sc. Electrical Engineering. Date: 1984,
Department of Electrical Engineering, Tel-Aviv University.

Academic Appointments

- 08/2009
-01/2010 Guest professor, Signal and Information Processing Laboratory,
ETH, Zurich, Switzerland. On sabbatical leave from the Technion.
- 2008- Associate professor, Faculty of Electrical Engineering,
Technion - IIT, Haifa 32000, Israel.
- 2000-2007 Senior lecturer, Faculty of Electrical Engineering,
Technion - IIT, Haifa 32000, Israel.
- 1995-1999 Lecturer, Dept. of EE, Ben-Gurion University, Beer-Sheva, Israel.
- 1994 Research assistant professor, C³I Center,
George Mason University, Fairfax, VA, USA.
- 1991-1993 Post-doctoral fellow, Department of Electrical Engineering,
Princeton University, Princeton, NJ, USA.
- 1990 Lady Davis fellow, Department of Electrical Engineering,
Technion - IIT, Haifa, Israel.

Professional Experience

- 1983–1985 Development Engineer, Tadiran Electronic Industries, ISRAEL.
2/1997–10/1998 R&D, ComWiz Digital Communications,
on leave of absence from Ben-Gurion University.
11/1998–7/2003 Consultant for Millimetrix Broadband Networks (formerly ComWiz)
1/2005–11/2005 Consultant for WideMed Intelligent Healthcare,
a bio-medical signal diagnostics company, that provides signal analysis solutions
to the sleep and cardio-vascular markets.

Research Interests

Information Theory, Communications, Multi-user communication systems.

Teaching Experience

Courses taught at the Technion:

- Signals and Systems (044130). Undergraduate course. Spring 1999-2000, 2000-2001, 2001-2002, 2002-2003. Fall 2000-2001, 2001-2002, 2002-2003. Summer 2009-2010, 2012-2013.
- Random Signals (044202). Undergraduate course. Spring 2004-2005, 2009-2010, 2010-2011. Fall 2004, 2006-2007, 2007-2008, 2011-2012. Summer 2003-2004.
- Control Systems 2 (044192). Undergraduate course. Spring 2003-2004. Fall 2004-2005, 2006-2007, 2010-2011.
- Introduction to Processing of Random Signals (046201). Undergraduate+graduate course. Fall 2004-2005, Spring 2004-2005, 2005-2006, 2011-2012.
- Introduction to Digital Communications (046206). Undergraduate+graduate course. Spring 2007-2008, 2013-2014. Fall 2008-2009.
- Advanced Topics in Communication and Information Theory – Multiuser Systems (048703). Graduate course. Spring 1999-2000, 2000-2001, 2001-2002, 2002-2003. **Initiated and prepared** by Dr. Yossef Steinberg.
- Information Theory (048733). Graduate course. Fall 2005-2006, 2008-2009. (Course number 046733 starting fall 2010-2011.)
- Information Theory (046733). Undergraduate+graduate course. Fall 2010-2011, Spring 2012-2013.
- Multiuser Information Theory (049027). Graduate course. Spring 2003-2004, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, 2011-2012, 2013-2014. **Initiated and prepared** by Dr. Yossef Steinberg (this is an evolution of the advanced topics course 048703).

Courses taught at Ben-Gurion University:

- Communication Systems. Undergraduate course, 2/1996–6/1996, and 10/1998–2/1999. The basic course in communications, covers analog communications and introduction to digital communications.
- Digital Coding of Waveforms. Mixed undergraduate and graduate level, 2/1996–6/1996. Coding techniques for signal compression, with and without distortion.
- Information Theory. Graduate course. 2/1995–6/1995, and 10/1997–2/1998.

Departmental activities

10/1999 – present Coordinator of the communications area in graduate studies
1/2002 – 08/2008 Member of curriculum committee, undergraduate studies
10/1999 – 09/2007 Communications area students consultant
10/2004 – 9/2006 Reserves consultant
10/2011 – Vice Dean for undergraduate studies

Public Professional Activities

- Technical Program Committee, International Symposium on Information Theory (ISIT) 2001, Washington D.C.
- Technical Program Committee, ISIT 2002, EPFL, Switzerland.
- Associate Editor for Shannon Theory, *IEEE Trans. Inform. Theory*, starting November 2004, three years period.
- Member of 2006 IEEE Information Theory Society Awards Committee, starting October 2005.
- Member of the 2007 Joint COM/IT Paper Award Committee.
- Technical Program Committee, Information Theory Workshop (ITW) 2008. May 5–9 2008, Porto, Portugal.
- Technical Program Committee, The 2008 International Conference on Information Theory and Statistical Learning (ITSL 2008). June 23–24, 2008, Las Vegas, NV. Held in conjunction with WORLDCOMP'08.
- Technical Program Committee, International Symposium on Information Theory and Applications (ISITA) 2008, Auckland, New Zealand, December 2008.
- Technical Program Committee and invited session organizer, Information Theory Workshop (ITW) 2009. June 10–12, 2009, Volos, Greece.
- Technical Program Committee and invited session organizer, International Zurich Seminar on Communications (IZS) 2010.
- Technical Program Committee, Information Theory Workshop 2010 (ITW2010), August 30–September 3, Dublin, Ireland.

- Technical Program Committee, Information Theory Workshop (ITW) 2011, Paraty, Brazil. October 16-20 2011.
- Associate Editor at large, *IEEE Trans. Inform. Theory*, starting July 2010, three years period.
- Member of the editorial board, *Foundations and Trends on Communications and Information Theory*, starting May 2012.
- Technical Program Committee, ISIT 2012, Cambridge MA, USA. July 1-6 2012.
- Technical Program Committee, ISIT 2013, Istanbul, Turkey, July 7-12 2013.
- Technical Program Committee, ITW 2013, Seville, Spain.
- General co-chair, ITW 2015, Jerusalem, Israel.
- Technical Program Committee co-chair, ISIT 2016, Barcelona, Spain.
- Member and head of the ISF EE committee. Dates withheld.

Membership in Professional Societies

IEEE Information Theory Society, Fellow.

Awards

- Israel Ministry of Communication Fellowship 1986, granted for M.Sc. research.
- Lady Davis Fellowship 1990, administered by the Technion and the Hebrew University.
- Wolfson Postdoctoral Fellowship 1991, administered by the Israel Academy of Sciences and Humanities.
- The 2007 Information Theory Society Paper Award, for the paper:
H. Weingarten, Y. Steinberg, and S. Shamai, "The Capacity Region of the Gaussian Multiple-Input Multiple-Output Broadcast Channel," *IEEE Trans. Inform. Theory*, vol. 52, No. 9, pp. 3936 – 3964, September 2006.
- IEEE Fellow effective January 2011, for contributions to information theory.

Graduate Students

M.Sc. Students:

1. Hanan Weingarten, EE Technion. Research subject: Information theoretic approach to robust communication. December 2001.
2. Igor Bilik, EE BGU. Research subject: Bounds on identification capacity, and identification schemes, in multiterminal networks. July 2003.
3. Aviv Rosenzweig, EE Technion. Research subject: On channels with partial side information at the transmitter - bounds on achievable rates and coding strategies. September 2003.

4. Dan Goldsmidt, EE Technion. (Main advisor.) Research subject: On capacities of fading channels with side information. Jointly with Prof. Shlomo Shamai. November 2004.
5. Yakup Cemal, EE Technion. Research subject: Coding for multi-terminal systems with partial side information. April 2005.
6. Guy Keshet, EE Technion. Subject overview: Channel Coding in the Presence of Side Information. Jointly with Prof. Neri Merhav. Graduated June 2006.
7. Amir Winshtok, EE Technion. Research subject: Source and channel coding in the presence of side information. Graduated June 2007.
8. Orna Sumszyk, EE Technion. Research subject: Information embedding with reversible stegotext and related problems. Graduated July 2011.
9. Dor Shaviv, EE Technion. Research subject: The multiple access channel with rate limited feedback. Started March 2010. Graduated July 2012.
10. Eliron Amir, EE Technion. Research subject: Multiple access channels with correlated sources and cribbing encoders. Started April 2011. Graduated April 2013.

Ph.D. Students:

1. Yoav Tock, EE Technion. (Main advisor.) Research subject: Information theoretic analysis of the muscle spindle system. Jointly with Prof. G. Inbar. October 2003.
2. Michael Katz, EE Technion. Research subject: Multiuser Communication Systems. Emphasis on fading models. Jointly with Prof. S. Shamai. February 2007.
3. Hanan Weingarten, EE Technion. (Main advisor.) Research subject: Multiterminal MIMO Systems. Jointly with Prof. S. Shamai. Nov. 2007.
4. Amichai Sanderovitch, EE Technion. (Main advisor.) Research subject: Communication in networks, via de-centralized processing. Jointly with Prof. S. Shamai. May 2008.

Research Grants

1. 1997-1999, Israeli Ministry of Science, “Unified Methods and Algorithms for Joint Storage, Organization, and Labeling of Image, Voice and Text Data in Multimedia Applications on the Information Highway,” 1,670,000 NIS. Principal Investigators: Prof. Amir Averbuch (TAU), Prof. Arnon Cohen (BGU), Prof. Itzhak Dinstein (BGU), Dr. Joseph Francos (BGU), Dr. Yossef Steinberg (BGU), Prof. David Malah (Technion), Prof. Ehud Gudes (BGU).
After receiving the grant, I turned back my budget due to Leave of Absence.
2. 2001-2003, The Israel Science Foundation, “Information Theoretic Study of Communication and Identification Channels,” \$9,000 for equipment, \$45,417 for first year, \$45,416 for second year, \$45,417 for third year.
Principal Investigators: Dr. Yossef Steinberg, and Prof. Shlomo Shamai.

3. 2004-2007, The Israel Science Foundation, “Multiterminal Communication with Side Information: An Information Theoretic Inspired Approach,” \$64,545 for first year, \$62,153 for second year, \$59,625 for third year, \$63,819 for fourth year. Principal Investigators: Dr. Yossef Steinberg, and Prof. Shlomo Shamai.
4. 2005, Intel Corp. “Wireless Networks: Cooperative Approaches in Communications and Protocols,” \$27,000. Principal Investigators: Dr. Yossef Steinberg, Prof. Ariel Orda, and Prof. Shlomo Shamai.
5. 2008-2011, The Israel Science Foundation, “Multiterminal Communication Systems with Coded Side Information,” four years grant. Principal Investigator: Yossef Steinberg, submitted October 2006. \$47,529 for first year (2007-2008), \$53,173 for second year (2008-2009), \$52,411 for third year (2009-2010), \$51,794 for fourth year (2010-2011).
6. 2012-2015, The Israel Science Foundation, “The Role of Explicit and Implicit Cooperation in Communication Networks,” four years grant, submitted October 2010. Principal investigators: Prof. Yossef Steinberg and Dr. Haim Permuter (EE BGU). \$66,857 for first year(2011-2012), \$58,942 for second year (2012-2013), \$65,000 for third year (2013-2014).

PUBLICATIONS

Theses

- M.Sc. Thesis title: “Asymptotic Solution of the Optimal Filtering Problem for Scalar Diffusion Processes Measured by a Sensor with Critical Inflection Point in a Gaussian Channel,” thesis supervisor: Prof. B. Z. Bobrovsky, Dept. of EE, Tel-Aviv University.
- Ph.D. Dissertation Title: “Nonlinear Smoothing of Scalar Diffusions,” Thesis Supervisors: Prof. Zeev Schuss, Dept of Applied Mathematics, and Prof. B. Z. Bobrovsky, Dept. of EE, Tel-Aviv University.

Book Chapters

1. Y. Tock and Y. Steinberg. Information Theory. In: Marc D. Binder, Nobutaka Hirokawa, Uwe Windhorst (Eds), *Encyclopedia of Neuroscience*. Springer Verlag, 2008.
<http://www.springer.com/biomed/neuroscience/book/978-3-540-35857-2>
2. G. Caire, S. Shamai, Y. Steinberg, and H. Weingarten. MIMO Broadcast Channel: Theoretical and System Aspects. Invited book chapter, in *Space-Time Wireless Systems: From Array Processing to MIMO Communications*, edited by H. Bölcskei, D. Gesbert, C. Papadias, and A. J. van der Veen, Cambridge University Press, 2006.
3. Y. Steinberg. Coding for Single and Multi User Channels with Constrained and Unconstrained Side Information. in *Multiple Access Channels: Theory and Practice*, NATO Security through Science Series, subseries D: Information and Communication Security, Volume 10. IOS Press, 2007.

Coauthors who were my students at the time of writing are underlined.

Papers

1. Y. Steinberg, B. Z. Bobrovsky and Z. Schuss, "On the Optimal Filtering Problem for the Cubic Sensor," *Circuits, Systems and Signal Processing*, **7** (3), pp 381–408, 1988.
2. Y. Steinberg, O. Zeitouni, "On Tests for Normality," *IEEE Trans. Inform. Theory*, vol. 38, no. 6, pp. 1779–1787, 1992.
3. Y. Steinberg, M. Gutman, "An Algorithm for Source Coding Subject to a Fidelity Criterion, Based on String Matching," *IEEE Trans. Inform. Theory*, vol. 39, no. 3, pp. 877-886, May 1993.
4. Y. Steinberg, H. Vincent Poor, "Sequential Amplitude Estimation in Multiuser Communications," *IEEE Trans. Inform. Theory*, vol. 40, no. 1, pp. 11-20, January 1994.
5. Y. Steinberg, B. Z. Bobrovsky and Z. Schuss, "Fixed Point Smoothing of Scalar Diffusions, Part I: An Asymptotically Optimal Smoother," *SIAP*, Vol. 54, No. 3, pp. 833-853, June 1994.
6. Y. Steinberg, H. V. Poor, "On Sequential Delay Estimation in Wideband Digital Communication Systems," *IEEE Trans. Inform. Theory*, vol. 40, no. 5, September 1994.
7. Y. Steinberg, S. Verdú, "Channel Simulation and Coding with Side Information," *IEEE Trans. Inform. Theory*, vol. 40, no. 3, pp. 634–646, 1994.
8. S. Vembu, S. Verdú, Y. Steinberg, "The Source-Channel Separation Theorem Revisited," *IEEE Trans. Inform. Theory*, vol. 41, no. 1, pp. 44 – 54, January 1995.
9. Y. Steinberg, S. Verdú, "Simulation of Random Processes and Rate-Distortion Theory," *IEEE Trans. Inform. Theory*, vol. 42, no. 1, pp. 63-86, Jan. 96.
10. R. Liptser, B. Z. Bobrovsky, Z. Schuss and Y. Steinberg, "Nonlinear Fixed Lag Smoothing of Scalar Diffusions, Part I: A Filtering-Smoothing Equation," *Stochastic Processes and their Applications*, 1996, pp 237–255.
11. K. Bell, Y. Steinberg, Y. Ephraim and H. L. Van Trees, "Extended Ziv-Zakai Lower Bound for Vector Parameter Estimation," *IEEE Trans. Inform. Theory*, vol. 43, no. 2, pp. 624 – 637, March 1997.
12. Y. Steinberg, "Resolvability Theory for the Multiple Access Channel," *IEEE Trans. Inform. Theory*, vol. 44, no. 2, pp. 472 – 487, March 1998.
13. Y. Steinberg, "New Converses in the Theory of Identification via Channels," *IEEE Trans. Inform. Theory*, vol. 44, no. 3, pp. 984 – 998, May 1998.
14. A. B. Geva, Y. Steinberg, S. Bruckmair, and G. Nahum, "A Comparison of Cluster Validity Criteria for a Mixture of Normal Distributed Data," *Pattern Recognition Letters*, Vol. 21, No. 6, pp. 511-529, 2000.

15. Y. Steinberg, B. Z. Bobrovsky and Z. Schuss, “Fixed Point Smoothing of Scalar Diffusions, Part II: The Error of the Optimal Smoother,” *SIAM J. Appl. Math.*, Vol. 61, No. 4, pp. 1437-1444, 2001.
16. Y. Steinberg and N. Merhav, “Identification in the Presence of Side Information with Application to Watermarking,” *IEEE Trans. Inform. Theory*, vol. 47, no. 4, pp. 1410-1422, May 2001.
17. H. Weingarten, Y. Steinberg, and S. Shamai, “Gaussian Codes and Weighted Nearest Neighbor Decoding in Fading Multiple-Antenna Channels,” *IEEE Trans. Inform. Theory*, vol. 50, no. 8, pp. 1665 – 1686, August 2004.
18. Y. Steinberg, N. Merhav, “On Successive Refinement for the Wyner-Ziv Problem,” *IEEE Trans. Inform. Theory*, vol. 50, no. 8, pp. 1636 – 1654, August 2004.
19. A. Rosenzweig, Y. Steinberg, S. Shamai, “On Channels with Partial State Information at the Transmitter,” *IEEE Trans. Inform. Theory*, vol. 51, no. 5, pp. 1817 – 1830, May 2005.
20. Y. Tock, G. F. Inbar, Y. Steinberg, M. Ljubisavljevic, J. Thunberg, U. Windhorst, H. Johansson, “Estimation of Muscle Spindle Information Rate by Pattern Matching and the effect of Gamma System Activity on Parallel Spindles,” *Biological Cybernetics*, vol. 92, no. 5, pp. 316 – 332, May 2005.
21. Y. Steinberg, “Coding for the Degraded Broadcast Channel with Random Parameters, with Causal and Non-Causal Side Information,” *IEEE Trans. Inform. Theory*, vol. 51, no. 8, pp. 2867 – 2877, August 2005.
22. Y. Cemał and Y. Steinberg, “The Multiple-Access Channel with Partial State Information at the Encoders,” *IEEE Trans. Inform. Theory*, vol. 51, no. 11, pp. 3992 – 4003, November 2005.
23. Y. Steinberg and N. Merhav, “On Hierarchical Joint Source-Channel Coding with Degraded Side Information,” *IEEE Trans. Inform. Theory*, Vol. 52, no. 3, pp. 886–903, March 2006.
24. H. Weingarten, Y. Steinberg, and S. Shamai, “The Capacity Region of the Gaussian Multiple-Input Multiple-Output Broadcast Channel,” *IEEE Trans. Inform. Theory*, vol. 52, No. 9, pp. 3936 – 3964, September 2006.
25. G. Keshet, Y. Steinberg, N. Merhav “Channel Coding in the Presence of Side Information,” *Foundations and Trends in Communications and Information Theory*, Vol. 4, No. 6, pp. 445–586, 2007.
26. Y. Cemał and Y. Steinberg, “Coding Problems for Channels with Partial State Information at the Transmitter,” *IEEE Trans. Inform. Theory*, Vol. 53, No. 12, pp. 4521 – 4536, December 2007.
27. A. Sanderovitch, S. Shamai, Y. Steinberg, and G. Kramer, “Communication via Decentralized Processing,” *IEEE Trans. Inform. Theory*, Vol. 54, No. 7, pp. 3008 – 3023, July 2008.

28. Y. Steinberg, "Coding for Channels With Rate-Limited Side Information at the Decoder, With applications," *IEEE Trans. Inform. Theory*, vol. 54, No. 9, pp. 4283 – 4295, September 2008.
29. A. Sanderovitch, S. Shamai, Y. Steinberg, "Distributed MIMO Receiver - Achievable Rates and Upper Bounds," *IEEE Trans. Inform. Theory*, Vol. 55, No. 10, pp. 4419–4438, October 2009.
30. H. Weingarten, T. Liu, S. Shamai, Y. Steinberg, P. Viswanath, "The Capacity Region of the Degraded Multiple Input Multiple Output Compound Broadcast Channel," *IEEE Trans. Inform. Theory*, Vol. 55, No. 11, pp. 5011–5023, November 2009.
31. Y. Steinberg, "Coding and Common Reconstruction," *IEEE Trans. Inform. Theory*, Vol. 55, No. 11, pp. 4995–5010, November 2009.
32. H. Permuter, Y. Steinberg, T. Weissman, "Two-Way Source Coding With a Helper," *IEEE Trans. Inform. Theory*, Vol. 56, No. 6, pp. 2905-2919, June 2010.
33. A. Lapidoth, Y. Steinberg, "The Multiple-Access Channel with Causal Side Information: Common State," *IEEE Trans. Inform. Theory*, Vol. 59, No. 1, pp 32-50, January 2013.
34. A. Lapidoth, Y. Steinberg, "The Multiple-Access Channel with Causal Side Information: Double State," *IEEE Trans. Inform. Theory*, Vol. 59, No. 3, pp. 1379-1393, March 2013.
35. Dor Shaviv and Y. Steinberg, "On the Multiple-Access Channel with Common Rate-Limited Feedback," *IEEE Trans. Inform. Theory*, Vol. 59, No. 6, pp 3780-3795, June 2013.
36. S. Bross, Y. Steinberg, S. Tinguely, "The Discrete Memoryless Interference Channel with One-Sided Generalized Feedback," *IEEE Trans. Inform. Theory*, Vol. 59, No. 7, pp 4171-4191, July 2013.
37. M. Gastpar, A. Lapidoth, Y. Steinberg, and M. Wigger, "Coding Schemes and Asymptotic Capacity for the Gaussian Broadcast and Interference Channels with Feedback," *IEEE Trans. Inform. Theory*, Vol. 60, No. 1, pp. 54-71, January 2014.

Submitted

1. E. Amir, Y. Steinberg, "Joint Source-Channel Coding for Cribbing Models," *IEEE Trans. Inform. Theory*, Jan. 2013, submitted.
2. O. Sumszyk, Y. Steinberg, "Information Embedding with Reversible Stegotext," *IEEE Trans. Inform. Theory*, Jan. 2013, submitted.
3. S. B. Amor, Y. Steinberg, and M. Wigger, "MIMO MAC-BC Duality with Linear-Feedback Coding Schemes," *IEEE Trans. Inform. Theory*, April 2014, submitted.
4. L. Dikstein, H. Permuter and Y. Steinberg, "On State Dependent Broadcast Channels with Cooperation," *IEEE Trans. Inform. Theory*, May 2014, submitted.

Presentations in International Conferences

Invited Talks

1. The 1993 IEEE Information Theory Workshop, Shizuoka, Japan, June 4–8, 1993, “A Construction Technique for Efficient Sequential Estimators, with Applications to Multiuser Estimation.”
2. The 1994 IEEE-IMS Workshop on Information Theory and Statistics, Alexandria, Virginia, October 27–29, 1994, “Finite-Precision Intrinsic Randomness and Source Resolvability.”
3. 39th Annual Allerton Conference on Communication, Control, and Computing, Allerton House, Monticello, Illinois, 3–5 October, 2001. “Gaussian Codes and Nearest-Neighbor Decoding for Fading Multi Antenna Channels.”
4. The 2002 IEEE Information Theory Workshop, Bangalore, India, October 20–25, 2002, “Watermarking Identification for Private and Public Users: The Broadcast Channel Approach.”
5. The 41st Annual Allerton Conference on Communication, Control, and Computing, Allerton House, Monticello, Illinois, 1–3 October, 2003. “On Coding with Rate-Limited Side Information.”
6. The 2006 IEEE Information Theory Workshop, Punta del Este, Uruguay, March 13-17, 2006. “Coding for Channels with Rate-Limited Side Information.”
7. NATO Advanced Study Institute on Coding and Analysis of Multiple Access Channels 2006, 26 August – 5 September 2006, Budapest, Hungary. “Coding for Single and Multi User Channels with Constrained and Unconstrained Side Information.”
8. The 44th Annual Allerton Conference on Communication, Control, and Computing, Allerton House, Monticello, Illinois, 27–29 September, 2006. “Joint Source-Channel Coding for Arbitrarily Varying Wyner-Ziv Source and Gel’fand-Pinsker Channel.”
9. The 2008 Information Theory and Applications Workshop, UC San Diego, CA, January 28-February 1, 2008. “Coding and Common Knowledge.”
10. The 2008 International Zurich Seminar on Communications, March 12–14 2008, Zurich, Switzerland. “On the Multiple-Access Channel with Common Rate-Limited Feedback.”
11. The 2009 Information Theory and Applications Workshop, UC San Diego, CA, February 8–13, 2009. “Problems We Can Solve With a Helper.”
12. The 2010 International Zurich Seminar on Communications, March 3-5 2010, Zurich, Switzerland. “The Multiple Access Channel with Causal and Strictly Causal Side Information at the Encoders.”
13. BIRS Workshop on Interactive Information Theory, January 15-20 2012, Banff, AB, Canada. “The Broadcast Channel with Action-Dependent States.”
14. The 2012 International Zurich Seminar on Communications, February 29 - March 2 2012, Zurich, Switzerland. “The Multiple Access Channel with Correlated Sources and Cribbing Encoders.”
15. The 2013 Information Theory and Applications Workshop, San Diego, CA, February 10-15, 2013. “The Broadcast Channel with Action-Dependent States - the Non-causal Case.”

16. The 2014 Information Theory and Applications Workshop, San Diego, CA, February 9-14, 2014. “Cooperative Coding for Channels with Uncertainty in the Cooperation Links.”

Contributed Talks

1. The 31st Conference on Decision and Control, Tuscon, Arizona, Dec. 1992. Title of presentation: “Sequential Amplitude Estimation in Multiuser Communications.”
2. The 1993 IEEE International Symposium on Information Theory, San Antonio, Texas, Jan. 1993, “Sequential Delay Estimation in Wideband Digital Communication Systems.”
3. The 1993 Conference on Information Science and Systems, Johns Hopkins University, Baltimore MD, March 24–26, 1993. “Delay Estimation in Multiuser Environments.”
4. The Sixth Joint Swedish-Russian International Workshop on Information Theory, Mölle, Sweden August 22-27, 1993, “The Random Bit Rate Required for Channel Simulation.”
5. The 1994 IEEE International Symposium on Information Theory, Trondheim, Norway, 27 June – 1 July, 1994. Long Presentation: “Finite-Precision Source Resolvability.”
6. The 1998 IEEE International Symposium on Information Theory, MIT, Boston, August 16–22, 1998, “New Converses in the Theory of Identification via Channels.”
7. The 2000 IEEE International Symposium on Information Theory, Sorrento, Italy, June 25–30, 2000, “Identification in the Presence of Side Information with Application to Watermarking.”
8. The 2001 IEEE International Symposium on Information Theory, Washington D.C., 24–29 June, 2001. “The Identification Capacity Region of the Broadcast Channel.”
9. The 2002 IEEE International Symposium on Information Theory, Lausanne, Switzerland, June 30 – July 5, 2002. “On the Broadcast Channel with Random Parameters.”
10. The 2004 IEEE International Symposium on Information Theory, Chicago, USA, June 27 – July 2, 2004. “On Successive Refinement for the Wyner-Ziv Problem.”
11. The 2004 IEEE International Symposium on Information Theory, Chicago, USA, June 27 – July 2, 2004. “On Hierarchical Joint Source-Channel Coding.”
12. The 2005 IEEE International Symposium on Information Theory, Adelaide, Australia, September 4 – September 9, 2005. “Hierarchical and Joint Source-Channel Coding with Coded State Information at the Transmitter.”
13. The 2005 IEEE International Symposium on Information Theory, Adelaide, Australia, September 4 – September 9, 2005. “Achievable Rates for the Broadcast Channel with States Known at the Transmitter.”
14. The 2006 IEEE International Symposium on Information Theory, Seattle, Washington, USA, July 9–14, 2006. “Decentralized Receiver in a MIMO System.”
15. The 2006 IEEE International Symposium on Information Theory, Seattle, Washington, USA, July 9–14, 2006. “Reversible Information Embedding with Compressed Host at the Decoder.”

16. The 2008 IEEE International Symposium on Information Theory, Toronto, Canada, July 1–6, 2008. “Simultaneous Transmission of Data and State under Common Knowledge.”
17. The 2008 IEEE Israel Convention, Eilat, Israel, December 3–5, 2008. “Rate-Distortion With Common Rate-Limited Side Information to the Encoder and Decoder.”
18. The 2009 IEEE Information Theory Workshop on Networking and Information Theory, Volos, Greece, June 10–12, 2009. “Problems We Can Solve With a Helper.”
19. The 2009 IEEE International Symposium on Information Theory, Seoul, South Korea, June 28–July 3, 2009. “Information Embedding With Reversible Stegotext .”
20. The 2010 IEEE International Symposium on Information Theory, Austin, Texas, June 13-18, 2010. “The Multiple-Access Channel with Two Independent States Known Causally to One Encoder.”
21. The 2012 IEEE International Symposium on Information Theory, Cambridge, MA, July 1–6 2012. “The Broadcast Channel with Action Dependent States.”
22. The 2012 IEEE International Symposium on Information Theory, Cambridge, MA, July 1–6 2012. “Joint Source-Channel Coding for Cribbing Models.”
23. The 2013 IEEE International Symposium on Information Theory, Istanbul, Turkey, July 7–12, 2013. “The Degraded Broadcast Channel with Non-Causal Action-Dependent Side Information.” “Joint Source-Channel Coding for Cribbing Models.”
24. The 2014 IEEE International Symposium on Information Theory, Honolulu, Hawaii, June 29–July 4, 2014. “Channels with Cooperation Links that May Be Absent.”

Refereed Papers in Conference Proceedings:

1. Y. Steinberg, H. V. Poor, “Sequential Amplitude Estimation in Multiuser Communications,” *Proc. of The 31st Conference on Decision and Control*, Tucson, Arizona, Dec. 1992.
2. Y. Steinberg, H. V. Poor, “Sequential Delay Estimation in Wideband Digital Communication Systems,” in *Proc. 1993 IEEE International Symposium on Information Theory*, San Antonio, Texas, Jan. 1993.
3. Y. Steinberg, H. V. Poor, “Delay Estimation in Multiuser Environments,” in *Proc. of the 1993 Conference on Information Science and Systems*, The Johns Hopkins University, Baltimore, MD, March 24-26, 1993.
4. Y. Steinberg, H. V. Poor, “A Construction Technique for Efficient Sequential Estimators, with Applications to Multiuser Estimation,” in *Proceedings of the 1993 IEEE Information Theory Workshop*, Shizuoka, Japan, June 4-8, 1993.
5. Y. Steinberg, S. Verdú, “The Random Bit Rate Required for Channel Simulation,” in *Proceedings of the Sixth Joint Swedish-Russian International Workshop on Information Theory*, Mölle, Sweden, August 22-27, 1993.

6. Y. Steinberg, S. Verdú, “Finite-precision Source Resolvability,” in *Proc. of the 1994 IEEE International Symposium on Information Theory*, Trondheim, Norway, 27th June - 1st July, 1994. long presentation.
7. S. Vembu, S. Verdú and Y. Steinberg, “When does the Separation Theorem Hold?” in *Proc. of the 1994 IEEE International Symposium on Information Theory*, Trondheim, Norway, 27th June - 1st July, 1994.
8. Kristine L. Bell, Yariv Ephraim, Yossef Steinberg, and Harry L. Van Trees, “Improved Bellini-Tartara Lower Bound for Parameter Estimation,” in *Proc. of the 1994 IEEE International Symposium on Information Theory*, Trondheim, Norway, 27th June - 1st July, 1994.
9. Y. Steinberg, S. Verdú, “Finite-precision Intrinsic Randomness and Source Resolvability,” invited talk, in *Proc. of the 1994 IEEE-IMS Workshop on Information Theory and Statistics*, Alexandria, Virginia, October 27–29, 1994.
10. K. L. Bell, Y. Steinberg, Y. Ephraim, and H. L. Van Trees, “Improved Ziv-Zakai Lower Bound for Vector Parameter Estimation,” in *Proc. of the 1994 IEEE-IMS Workshop on Information Theory and Statistics*, Alexandria, Virginia, October 27–29, 1994.
11. Y. Steinberg and S. Verdú, “Simulation of Random Processes Using Limited Randomness,” in *Proc. of the 1996 Information Theory Workshop*, Haifa, Israel, June 9–13, 1996.
12. Y. Steinberg, “Approximating the Output of the Multiple Access Channel,” in *Proc. of the 1997 IEEE International Symposium on Information Theory*, Ulm, Germany, June 29 - July 4, 1997.
13. Y. Steinberg, “New Converses in the Theory of Identification via Channels,” in *Proc. of the 1998 IEEE International Symposium on Information Theory*, MIT, Boston, 16-22 August 1998.
14. Y. Steinberg and N. Merhav, “Identification in the Presence of Side Information with Application to Watermarking,” in *Proc. of the 2000 IEEE International Symposium on Information Theory*, Sorrento, Italy, 25–30 June, 2000.
15. [I. Bilik](#) and Y. Steinberg, “The Identification Capacity Region of the Broadcast Channel,” in *Proc. of the 2001 IEEE International Symposium on Information Theory*, Washington D.C., 24–29 June, 2001.
16. [H. Weingarten](#), Y. Steinberg, and S. Shamai, “Gaussian Codes and Nearest-Neighbor Decoding for Fading Multi Antenna Channels,” in *Proc. of the 39th Annual Allerton Conference on Communication, Control, and Computing*, Allerton House, Monticello, Illinois, 3–5 October, 2001.
17. Y. Steinberg, “On the Broadcast Channel with Random Parameters,” in *Proc. of the 2002 IEEE International Symposium on Information Theory*, Lausanne, Switzerland, June 30 – July 5, 2002.

18. H. Weingarten, Y. Steinberg, and S. Shamai, “Gaussian Codes and the Scaled Nearest Neighbor Decoder in Fading Multi-Antenna Channels,” in *Proc. of the 2002 IEEE International Symposium on Information Theory*, Lausanne, Switzerland, June 30 – July 5, 2002.
19. Y. Steinberg, “Watermarking Identification for Private and Public Users: The Broadcast Channel Approach,” in *Proc. of the 2002 IEEE Information Theory Workshop*, Bangalore, India, October 20–25, 2002.
20. D. Goldsmith, Y. Steinberg, and S. Shamai, “Bounds on the Capacity of a Flat Fading Gaussian Channel with Side Information at the Transmitter,” in *Proc. of the 22nd Convention of Electrical and Electronics Engineers in Israel*, Tel-Aviv, Israel, Dec. 1, 2002.
21. Y. Tock, Y. Steinberg, M. Ljubisavljevic, J. Thunberg, U. Windhorst, H. Johanson, G. F. Inbar, “Estimation of Muscle Spindle Information Rate by Pattern Matching and Effects of the Gamma System,” in *Proc. of the 1st International IEEE EMBS Conference on Neural Engineering*, Capri Island, Italy, March 20–22, 2003.
22. A. Rosenzweig, Y. Steinberg, and S. Shamai, “On Coding with Rate-Limited Side Information,” in *Proc. of the 41 Annual Allerton Conference on Communication, Control, and Computing*, Allerton House, Monticello, Illinois, 1–3 October, 2003.
23. H. Weingarten, Y. Steinberg, and S. Shamai, “The Capacity Region of the Gaussian MIMO Broadcast Channel,” in *Proceedings of the 38th Annual Conference on Information Sciences and Systems (CISS)*, Princeton, New Jersey, March 17–19, 2004.
24. H. Weingarten, Y. Steinberg, and S. Shamai, “The Capacity Region of the Gaussian MIMO Broadcast Channel,” in *Proc. of the 2004 IEEE International Symposium on Information Theory*, Chicago, June 27 – July 2, 2004.
25. Y. Steinberg and N. Merhav, “On Successive Refinement for the Wyner-Ziv Problem,” in *Proc. of the 2004 IEEE International Symposium on Information Theory*, Chicago, June 27 – July 2, 2004.
26. Y. Steinberg and N. Merhav, “On Hierarchical Joint Source-Channel Coding,” in *Proc. of the 2004 IEEE International Symposium on Information Theory*, Chicago, June 27 – July 2, 2004.
27. Y. Cemal and Y. Steinberg, “On the Multiple-Access Channel with Rate-Limited State Information at the Encoders,” in *Proc. of the 2004 IEEE International Symposium on Information Theory*, Chicago, June 27 – July 2, 2004.
28. Y. Cemal and Y. Steinberg, “Hierarchical and Joint Source-Channel Coding with Coded State Information at the Transmitter,” in *Proc. of the 2005 IEEE International Symposium on Information Theory*, Adelaide, Australia, September 4–9, 2005.
29. A. Sanderovitch, S. Shamai, Y. Steinberg, and G. Kramer, “Communication via Decentralized Processing,” in *Proc. of the 2005 IEEE International Symposium on Information Theory*, Adelaide, Australia, September 4–9, 2005.

30. Y. Steinberg and S. Shamai, "Achievable Rates for the Broadcast Channel with States Known at the Transmitter," in *Proc. of the 2005 IEEE International Symposium on Information Theory*, Adelaide, Australia, September 4–9, 2005.
31. Y. Steinberg, "Coding for Channels with Rate-Limited Side Information at the Decoder," in *Proc. of the 2006 IEEE Information Theory Workshop*, Punta del Este, Uruguay, March 13-17, 2006.
32. A. Sanderovich, S. Shamai, Y. Steinberg, and M. Peleg, "Decentralized Receiver in a MIMO System," in *Proc. of the 2006 IEEE International Symposium on Information Theory*, Seattle, Washington, U.S.A., July 9–14, 2006.
33. H. Weingarten, Y. Steinberg, and S. Shamai, "On the Capacity Region of the Multi-Antenna Broadcast Channel with Common Messages," in *Proc. of the 2006 IEEE International Symposium on Information Theory*, Seattle, Washington, U.S.A., July 9–14, 2006.
34. A. Winshtok and Y. Steinberg, "The Arbitrarily Varying Degraded Broadcast Channel with States Known at the Encoder," in *Proc. of the 2006 IEEE International Symposium on Information Theory*, Seattle, Washington, U.S.A., July 9–14, 2006.
35. Y. Steinberg, "Reversible Information Embedding with Compressed Host at the Decoder," in *Proc. of the 2006 IEEE International Symposium on Information Theory*, Seattle, Washington, U.S.A., July 9–14, 2006.
36. A. Winshtok and Y. Steinberg, "Joint Source-Channel Coding for Arbitrarily Varying Wyner-Ziv Source and Gel'fand-Pinsker Channel," in *Proc. of the 44th Annual Allerton Conference on Communication, Control, and Computing*, Allerton House, Monticello, Illinois, September 27–29, 2006.
37. H. Weingarten, T. Liu, S. Shamai, Y. Steinberg, and P. Viswanath, "The Capacity Region of the Degraded MIMO Compound Broadcast Channel," in *Proc. of the 2007 IEEE International Symposium on Information Theory*, Nice, France, June 24–29, 2007.
38. A. Sanderovich, S. Shamai, and Y. Steinberg, "On Upper Bounds for Decentralized MIMO Receiver," in *Proc. of the 2007 IEEE International Symposium on Information Theory*, Nice, France, June 24–29, 2007.
39. Dor Shaviv and Y. Steinberg, "On the Multiple-Access Channel with Common Rate-Limited Feedback," in *Proc. of the 2008 International Zurich Seminar on Communications*, March 12–14 2008, Zurich, Switzerland.
40. Y. Steinberg, "Simultaneous Transmission of Data and State with Common Knowledge," in *Proc. of the 2008 IEEE International Symposium on Information Theory*, Toronto, Canada, July 6-11, 2008.
41. H. Permuter, Y. Steinberg, and T. Weissman, "Rate-Distortion With Common Rate-Limited Side Information to the Encoder and Decoder," in *Proc. of the 2008 IEEE Convention of Electrical and Electronics Engineers in Israel*, Eilat, Israel, December 3–5, 2008.

42. O. Sumszyk and Y. Steinberg, "Information Embedding With Reversible Stegotext," in *Proc. of the 2008 IEEE Convention of Electrical and Electronics Engineers in Israel*, Eilat, Israel, December 3–5, 2008.
43. H. Permuter, Y. Steinberg, T. Weissman, "Problems We Can Solve With a Helper," in *Proc. of the 2009 IEEE Information Theory Workshop on Networking and Information Theory*, Volos, Greece, June 10–12, 2009.
44. H. Permuter, Y. Steinberg, T. Weissman, "Two-Way Source Coding With a Common Helper," in *Proc. of the 2009 IEEE International Symposium on Information Theory*, Seoul, South Korea, June 28–July 3, 2009.
45. O. Sumszyk and Y. Steinberg, "Information Embedding With Reversible Stegotext," in *Proc. of the 2009 IEEE International Symposium on Information Theory*, Seoul, South Korea, June 28–July 3, 2009.
46. A. Lapidoth and Y. Steinberg, "The Multiple Access Channel with Causal and Strictly Causal Side Information at the Encoders," in *Proc. of the 2010 International Zurich Seminar on Communications*, March 3–5 2010, Zurich, Switzerland.
47. S. I. Bross, Y. Steinberg, and S. Tinguely, "The Causal Cognitive Interference Channel," in *Proc. of the 2010 International Zurich Seminar on Communications*, March 3–5 2010, Zurich, Switzerland.
48. A. Lapidoth and Y. Steinberg, "The Multiple Access Channel with Two Independent States Each Known Causally to One Encoder," in *Proc. of the 2010 IEEE International Symposium on Information Theory*, Austin, TX, June 13–18, 2010.
49. S. I. Bross, Y. Steinberg, and S. Tinguely, "The Discrete Memoryless Interference Channel with One-Sided Generalized Feedback," in *Proc. of the 2010 IEEE International Symposium on Information Theory*, Austin, TX, June 13–18, 2010.
50. S. I. Bross, Y. Steinberg, S. Tinguely, "The Noisy Feedback Interference Channel with Secrecy," in *Proc. of the 2010 IEEE Convention of Electrical and Electronics Engineers in Israel*, Eilat, Israel, November 17–20, 2010.
51. A. Lapidoth, Y. Steinberg, M. Wigger, "Gaussian Broadcast Channel with Partial Feedback," in *Proc. of the 2010 IEEE Convention of Electrical and Electronics Engineers in Israel*, Eilat, Israel, November 17–20, 2010.
52. A. Lapidoth and Y. Steinberg, "A note on Multiple-Access Channels with Strictly-Causal State Information," in *Wireless Advanced* (formerly SPWC), London, June 20–22 2011.
53. S. I. Bross, Y. Steinberg, "The State-Dependent Interference Channel with States Available at a Cribbing Encoder and One Receiver," in *Proc. of the 2011 IEEE International Symposium on Information Theory*, St. Petersburg, Russia, July 31–August 5, 2011.
54. M. Gastpar, A. Lapidoth, Y. Steinberg, M. Wigger, "New Achievable Rates for the Gaussian Broadcast Channel with Feedback," in *Proc. of the Eighth International Symposium on Wireless Communication Systems (ISWCS'11)*, Aachen Germany, November 6–9, 2011.

55. E. Amir and Y. Steinberg, “The Multiple Access Channel with Correlated Sources and Cribbing Encoders,” in *Proc. of the 2012 International Zurich Seminar on Communications*, February 29–March 2, 2012, Zurich, Switzerland.
56. Y. Steinberg and T. Weissman, “The Degraded Broadcast Channel with Action-Dependent States,” in *Proc. of the 2012 IEEE International Symposium on Information Theory*, Cambridge, MA, July 1–6 2012.
57. E. Amir and Y. Steinberg, “Joint Source-Channel Coding for Cribbing Models,” in *Proc. of the 2012 IEEE International Symposium on Information Theory*, Cambridge, MA, July 1–6 2012.
58. A. Bracher, A. Lapidoth, Y. Steinberg, “On Feedback, Cribbing, and Causal State-Information on the Multiple-Access Channel,” in *Proc. of the 2012 IEEE Information Theory Workshop*, Lausanne, Switzerland, Sept. 3–7, 2012.
59. Y. Steinberg, “The Degraded Broadcast Channel with Non-Causal Action-Dependent Side Information,” in *Proc. of the 2013 IEEE International Symposium on Information Theory*, Istanbul, Turkey, July 7–12, 2013.
60. L. Dikstein, H. H. Permuter, and Y. Steinberg, “The State-Dependent Broadcast Channel with Cooperation,” in *Proc. of the 51st Annual Allerton Conference on Communication, Control, and Computing*, Allerton House, Monticello, Illinois, October 2–4, 2013.
61. S. Belhadj Amor, Y. Steinberg, M. Wigger, “Duality with Linear-Feedback Schemes for the Scalar Gaussian MAC and BC,” in *Proc. of the 2014 International Zurich Seminar on Communications*, February 26–28, 2014, Zurich, Switzerland.
62. S. Belhadj Amor, Y. Steinberg, M. Wigger, “MAC-BC Duality with Linear-Feedback Schemes,” in *Proc. of the 2014 IEEE International Symposium on Information Theory*, Honolulu, Hawaii, USA, June 29– July 4, 2014.
63. Y. Steinberg, “Channels with Cooperation Links that May Be Absent,” in *Proc. of the 2014 IEEE International Symposium on Information Theory*, Honolulu, Hawaii, USA, June 29– July 4, 2014.