

# BARBARA J. GROSZ

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## EDUCATION

A.B., Mathematics, Cornell University, 1969  
M.A., Computer Science, University of California at Berkeley, 1971  
Ph.D., Computer Science, University of California at Berkeley, 1977

## PROFESSIONAL EXPERIENCE

**Harvard University**, Higgins Professor of Natural Sciences, 2001-; Dean, Radcliffe Institute for Advanced Study, 2008-2011; Interim Dean, Radcliffe Institute for Advanced Study, 2007-08; Dean of Science, Radcliffe Institute for Advanced Study 2001-2007; Gordon McKay Professor of Computer Science, 1986-2001.

**SRI International, Artificial Intelligence Center**, Sr. Staff Scientist, 1983-86; Program Director, Natural Language and Representation, 1982-83; Senior Computer Scientist, 1981-82; Computer Scientist, 1977-81; Research Mathematician, 1973-77.

**Center for the Study of Language and Information**, SRI International and Stanford University: Co-founder; Executive Committee and Principal Researcher, 1983-86; Advisory Panel, 1986-87.

## VISITING AND CONSULTING POSITIONS

**Stanford University**, Consulting Associate Professor, Computer Science, 1985-87; Consulting Associate Professor, Computer Science and Linguistics, 1984-85; Visiting Faculty, Department of Computer Science, Fall Quarter, 1982.

**Brown University**, Visiting Professor of Computer Science (Research), September, 1998 – May, 1999.

**Hebrew University**, Jerusalem, Israel, Harold Perlman Visiting Professor, Faculty of Science, January-June 1992.

**University of Pennsylvania**, Visiting Associate Professor, Department of Computer and Information Science, 1984-86; Visiting Scholar, Department of Computer and Information Science, January-June 1982.

## HONORS AND AWARDS

**ACM/AAAI Allen Newell Award** (2009)

Member, **National Academy of Engineering** (2008)

Member, **American Academy of Arts and Sciences** (2004)

Fellow, **Association for Computing Machinery** (2004)

Member, **American Philosophical Society** (2003)

**Distinguished Alumna Award in Computer Sciences and Engineering**, University of California at Berkeley, 1997

Fellow, **American Association for Artificial Intelligence** (1990)

Fellow, **American Association for the Advancement of Science** (1990)

**IFAAMAS Influential Paper Award, 2007** for the paper, Grosz, Barbara, and Sarit Kraus. 1996.

“Collaborative Plans for Complex Group Action.” In *Artificial Intelligence* 86(2), pp. 269-357.

**Miegunyah Distinguished Fellow**, Department of Information Systems, Faculty of Science, University of Melbourne, Australia.

**Donald E. Walker Distinguished Service Award**, International Joint Conferences on Artificial Intelligence, 2001

**Distinguished Service Award**, American Association for Artificial Intelligence, 1999

**Distinguished Lecturer:** Distinguished Visiting Professor, Peter Wall Institute for Advanced Studies, June 2010, Miegunyah Lecturer in Science, University of Melbourne, Australia, March 2007, CMU Women@SCS Distinguished Lecture, Carnegie Mellon University, November 2005; CRA-W Distinguished Lecture, University of Maryland, Baltimore County, April 2005; Distinguished Lecture Series, University of Waterloo, November 2004; McKay Lectures, UC Berkeley, November 2002; “Getting Computer Systems to Function as Team Players,” Inaugural Grace Hopper Lecture, University of Pennsylvania, 2001; “Planning and Acting Together,” Princeton University, December 1999; “Making Computer Systems Team Players,” University of Southern California, March 1998; “Collaborative Systems,” LCS Distinguished Lecturer, Massachusetts Institute of Technology, February, 1995; “Collaborative Planning for Cooperative Human-Computer Communication and Problem-Solving,” University of Washington, October 1991.

#### **PUBLICATIONS—JOURNALS, REFEREED PROCEEDINGS AND BOOK CHAPTERS:**

Ofra Amir, Barbara J. Grosz, Edith Law and Roni Stern. 2013. Collaborative Health Care Plan Support. *Proceedings of the 12th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2013)*, Ito, Jonker, Gini, and Shehory (eds.). pp. 793-796. **Second Prize, Computing Community Consortium/AAMAS2013 Challenges and Visions Track**

Ece Kamar, Kobi Gal, and Barbara Grosz. Modeling Information Exchange Opportunities for Effective Human-computer Teamwork. 2013. *Artificial Intelligence* 195:528–550.

David Sarne and Barbara J. Grosz. Determining the Value of Information for Collaborative Multi-Agent Planning. 2013. *Journal of Autonomous Agents and Multi-Agent Systems*. 26(3): pp. 456-496.

Ya'akov Gal, Swapna Reddy, Stuart Shieber, Andee Rubin and Barbara Grosz. Plan Recognition in Exploratory Domains. 2012. *Artificial Intelligence*. 176(1): pp. 2270—2290.

Dimitrios Antos, Celso De Melo, Jonathan Gratch, & Barbara J. Grosz. 2011. The influence of emotion expression on perceptions of trustworthiness in negotiation. In *Proceedings of Twenty-Fifth Conference on Artificial Intelligence (AAAI)*. , 7-11 Aug. 2011, San Francisco, CA.

David Sarne, Avshalom Elmalech, Barbara J. Grosz and Moti Geva. 2011. Less Is More: Restructuring Decisions to Improve Agent Search. In *Proceedings of AAMAS-2011*, Taipei, Taiwan. May 2-6. pp 431-438.

Ya'akov Gal, Barbara Grosz, Sarit Kraus, Avi Pfeffer, Stuart Shieber. 2010. Agent Decision-Making in Open Mixed Networks. *Artificial Intelligence*, 174(18): pp. 1460-1480.

Ece Kamar, Ya'akov Gal and Barbara J. Grosz. Modeling User Perception of Interaction Opportunities for Effective Teamwork. In *Proceedings of IEEE SocialCom*, (CSE'09). Vancouver, BC. August 2009, 271 - 277.

Ece Kamar, Ya'akov Gal, and Barbara J. Grosz. 2009. Incorporating helpful behavior into collaborative planning. In *Proceedings of The 8th International Conference on Autonomous Agents and Multiagent Systems - Volume 2 (AAMAS '09)*, Vol. 2. International Foundation for Autonomous Agents and Multiagent Systems, Richland, SC, pp. 875-882.

Shulamit Reches, Philip Hendrix, Sarit Kraus and Barbara J. Grosz, 2008. Efficiently Determining the Appropriate Mix of Personal Interaction and Reputation Information in Partner Choice. In *Proceedings of Autonomous Agents and Multi-Agent Systems, AAMAS-2008*, Estoril, Portugal. May,

12-16, 2008.

- Ya'akov Gal, Barbara J. Grosz, Avi Pfeffer, Stuart M. Shieber and Alex Allain, 2007. The Influence of Task Contexts on the Decision-making of Humans and Computers. In *Proceedings of the Sixth International Interdisciplinary Conference on Modeling and Using Context (CONTEXT)*, Roskilde University, Denmark, August 2007, pp 206-209.
- David Sarne, and Barbara Grosz, 2007. Sharing Experiences to Learn User Characteristics in Dynamic Environments with Sparse Data. In *Proceedings of Autonomous Agents and Multi-Agent Systems, AAMAS-2007*, pp. 202-209.
- David Sarne and Barbara Grosz, 2007. Estimating Information Value in Collaborative Multi-Agent Planning Systems. In *Proceedings of Autonomous Agents and Multi-Agent Systems, AAMAS-2007*, pp. 227-234.
- Rachel Greenstadt, Barbara Grosz and Michael D. Smith, 2007. SSDPOP: Improving the Privacy of DCOP with Secret Sharing (short paper). In *Proceedings of Autonomous Agents and Multi-Agent Systems, AAMAS-2007*.
- Barbara J. Grosz and Luke Hunsberger, 2006. The Dynamics of Intentions in Collaborative Intentionality. In *Cognitive Systems Research (special issue on Cognition, Joint Action and Collective Intentionality)*, 7,2-3. Available online <http://www.sciencedirect.com/science/journal/13890417>.
- Jill Nickerson, Stuart M. Shieber and Barbara J. Grosz, 2006. Referring-Expression Generation: Using a Transformation-Based Learning Approach. In *Proceedings of the 19<sup>th</sup> International FLAIRS Conference*, Melbourne, Florida, May 2006. **Best paper award**.
- Francesca Marzo, Ya'akov Gal, Avi Pfeffer and Barbara J. Grosz. 2004. Social Preferences in Negotiations. In the Conference on Collective Intentionality IV, Siena, Italy, October 13-15, 2004.
- Barbara J. Grosz, Sarit Kraus et al. 2004. The Influence of Social Dependencies on Decision-Making: Initial Investigations with a New Game. In *Proceedings of Autonomous Agents and Multi-Agent Systems, AAMAS-2004*, pp. 782-789.
- Ya'akov Gal, Avi Pfeffer, Francesca Marzo and Barbara J. Grosz. 2004. Learning social preferences in games. In *Proceedings of AAI-2004*, pp. 226-231.
- Alyssa Glass and Barbara J. Grosz. 2003. Socially Conscious Decision Making. *Autonomous Agents and Multi-Agent Systems (Special Issue of Agents-2003)* 6,3. pp. 317-339.
- Barbara J. Grosz, S. Kraus, David G. Sullivan, and Sanmay Das. 2002. The influence of social norms and social consciousness on intention reconciliation. ICMAS-2000 Special Issue of *Artificial Intelligence*, Elsevier, vol. 142. pp. 147-177.
- Sanmay Das, Barbara J. Grosz and Avi J. Pfeffer. 2002. Learning and Decision-Making for Intention Reconciliation. *Proceedings of the First Joint Conference on Autonomous Agents and Multi-agent Systems*. Bologna, Italy. July 2002. pp. 1121-1128.
- Pedro Sander, Denis Peleshchuk and Barbara J. Grosz. 2002. A Scalable, Distributed Algorithm for Efficient Task Allocation. *Proceedings of the First Joint Conference on Autonomous Agents and Multi-agent Systems*. Bologna, Italy. July 2002. pp. 1191-1198.

- Tamara Babaian, Barbara J. Grosz and Stuart M. Shieber. 2002 A Writer's Collaborative Aid. *Proceedings of the Intelligent User Interfaces Conference (IUI-2002)*, San Francisco, CA. January 13-16. ACM Press. pp. 7-14.
- Charles L. Ortiz and Barbara J. Grosz. 2002. Interpreting Information Requests in Context: A Collaborative Web Interface for Distance Learning. *Autonomous Agents and Multi-Agent System*. Kluwer, vol. 5, pp.429-465.
- Alyssa Glass and Barbara J. Grosz. 2000. Socially Conscious Decision-Making. *Proceedings of the Fourth International Conference on Autonomous Agents (Agents-2000)*. Barcelona, Spain. 3-7 June 2000. ACM Press. pp. 217-224.
- Luke Hunsberger and Barbara J. Grosz. 2000. A Combinatorial Auction for Collaborative Planning. *Proceedings of the Fourth International Conference on Multi-Agent Systems (ICMAS-2000)*. Boston, MA. 10-12 July 2000. IEEE Computer Society Press. pp. 151-158.
- David G. Sullivan, Barbara. J. Grosz and Sarit Kraus. 2000. Intention Reconciliation by Collaborative Agents. *Proceedings of the Fourth International Conference on Multi-Agent Systems (ICMAS-2000)*. Boston, MA. 10-12 July 2000. IEEE Computer Society Press. pp. 293-300.
- Barbara J. Grosz and Peter C. Gordon, 1999. Conceptions of Limited Attention and Discourse Focus. *Computational Linguistics*, 25, pp. 617-624.
- Barbara J. Grosz, Luke Hunsberger and Sarit Kraus. 1999. Planning and Acting Together. *AI Magazine*. Winter. pp. 23-33.
- Barbara Grosz and Sarit Kraus. 1999. The Evolution of SharedPlans. *Foundations of Rational Agencies*, A. Rao and M. Wooldridge, eds., Kluwer Academic Press, pp. 227-262.
- David G. Sullivan, Alyssa Glass, Barbara J. Grosz, and Sarit Kraus. 1999. Intention Reconciliation in the Context of Teamwork: An Initial Empirical Investigation. *Cooperative Information Agents III, Lecture Notes in Artificial Intelligence*, M. Klusch, O. Shehory, and G. Weiss, eds., Springer-Verlag Press. pp. 149-162.
- Barbara J. Grosz, and Yael Ziv. 1998. Centering, Global Focus, and Right Dislocation. In *Centering Theory in Discourse*, Marilyn Walker, Aravind Joshi and Ellen Prince, eds., Oxford University Press. pp. 293-307.
- Barbara J. Grosz, and Candace Sidner. 1998. Lost Intuitions and Forgotten Intentions. In *Centering in Discourse*, Marilyn Walker, Aravind Joshi and Ellen Prince, eds., Oxford University Press. pp. 39-51.
- Barbara J. Grosz and Sarit Kraus. 1996. Collaborative Plans for Complex Group Action. In *Artificial Intelligence* 86(2), pp. 269-357. **Awarded IFAAMAS Influential Paper Award, 2007.**
- Barbara J. Grosz, Aravind Joshi, and Scott Weinstein. 1995. Centering: A Framework for Modeling the Local Coherence of Discourse. In *Computational Linguistics* 2(21), pp. 203-225.
- Yael Ziv and Barbara J. Grosz. 1994. Right Dislocation and Attentional State. In *Papers from the Israel Association of Theoretical Linguistics Meetings*, R. Buchalla and A. Mittwoch, eds., Akademon Press, Jerusalem.
- Barbara J. Grosz and Sarit Kraus. 1993. Collaborative Plans for Group Activities. *Proc. of IJCAI-13*, Chambery, France, Volume 1. pp. 367-373.

- P.C. Gordon, Barbara J. Grosz, and L.A. Gillom. 1993. Pronouns, Names and the Centering of Attention in discourse, *Cognitive Science*, 17:3, pp. 311-347.
- Barbara J. Grosz and J. Hirschberg. 1992. Some Intonational Characteristics of Discourse Structure, *Proc. of 1992 International Conference on Spoken Language Processing*, Banff, Alberta, Canada, Volume 1, pp. 429-432.
- J. Hirschberg and Barbara J. Grosz. 1992. Intonational Features of Local and Global Discourse Structure, *Proceedings of the DARPA Workshop on Spoken Language Systems*, Arden House, N.Y., pp. 441-446.
- Karen Lochbaum, Barbara J. Grosz and C. Sidner, 1990. Models of Plans to Support Communication, *Proc. of the Eighth National Conference on Artificial Intelligence (AAAI-90)*, Boston MA. pp. 485-490.
- Barbara J. Grosz and C. Sidner, Plans for Discourse, 1990. In Cohen, Morgan and Pollack (eds.), *Intentions in Communications*, MIT Press, Chapter 20, pp. 417-444.
- Barbara J. Grosz, D.E. Appelt, P.A. Martin and F. Pereira. 1987. TEAM: An Experiment in the Design of Transportable Natural Language Interfaces, *Artificial Intelligence* 32, pp. 173-243.
- Barbara J. Grosz and C.L. Sidner. 1986. Attention, Intentions, and the Structure of Discourse. *Computational Linguistics*, 12:3, pp. 175-204.
- Barbara J. Grosz and C.L. Sidner, 1985. Discourse Structure and the Proper Treatment of Interruptions, *Proc. 9th Intl. Joint Conf. on Artificial Intelligence*, Los Angeles, California (20-23 August). pp. 832-839.
- Barbara J. Grosz, A.K. Joshi, and S. Weinstein, 1983. Providing a Unified Account of Definite Noun Phrases in Discourse. *Proc. 21st Annual Meeting of the Association for Computational Linguistics*, Cambridge, Mass., June. pp. 44-50.
- Barbara J. Grosz, 1983. TEAM: A Transportable Natural Language Interface System, *Proc. Conference on Applied Natural Language Processing*, Santa Monica, CA (1-3 February). pp. 39-45.
- Barbara J. Grosz, et al. 1982. DIALOGIC: A Core Natural-Language Processing System, *Proc. Ninth International Conference on Computational Linguistics*, Prague, Czechoslovakia (5-9 July).
- Barbara J. Grosz, 1981. Focusing and Description in Natural Language Dialogues. *Elements of Discourse Understanding*, A. K. Joshi, I. Sag, and B. Webber (eds.) Cambridge University Press, Cambridge, England.
- Barbara J. Grosz, 1979. Utterance and Objective: Issues in Natural Language Communication, *Proc. 6th Intl. Joint Conf. on Artificial Intelligence*, Tokyo, Japan (20-30 August 1979), pp. 1067-1076; revised version in *AI Magazine*, 1,1 (1980), pp. 11-20. Reprinted in: Antonio Zampoli, Nicoletta Calzolari, (Eds) and Martha Palmer (Guest Editor), *Current Trends in Computational Linguistics: In honor of Don Walker*, *Linguistica Computazionale*, Vol IX.X, Giardini editori e stampatori (Italy) and Kluwer Academic Publishers, pp. 21-39.
- Barbara J. Grosz, 1978. Focusing in Dialog, *Proceedings of Workshop on Theoretical Issues in Natural Language Processing-2*, Urbana, Illinois (24-26 July).
- Barbara J. Grosz, G. Hendrix, and A. Robinson, 1977. Using Process Knowledge in Understanding Task-Oriented Dialogs, *Proc. of the Fifth Intl. Joint Conference on Artificial Intelligence*, Cambridge, Massachusetts (22-24 August), p. 90.

Barbara J. Grosz, 1977. The Representation and Use of Focus in a System for Understanding Dialogs,” *Proc. of the Fifth Intl. Joint Conference on Artificial Intelligence*, pp. 67-76, Cambridge, Massachusetts (22-25 August).

(Deutsch) Barbara J. Grosz, 1975. Establishing Context in Task-Oriented Dialogs. *American Journal of Computational Linguistics*.

(Deutsch) Barbara J. Grosz, 1974. The Structure of Task-Oriented Dialogs. *Proc. IEEE Symposium on Speech Recognition*, pp. 250-254, Carnegie-Mellon U., Pittsburgh, Pennsylvania (15-19 April).

#### **PUBLICATIONS—INVITED ARTICLES, CONFERENCE PAPERS AND BOOK CHAPTERS:**

Grosz, Barbara J., “What Question Would Turing Pose Today?” *AI Magazine*, 33(4), (Winter 2012) 73-81.

Grosz, Barbara J., “A Conjecture for a Better Turing Test.” *The Atlantic technology blog*, August 29 2012

Grosz, Barbara J. 2005. “Whither AI: Identity Challenges of 1993-95.” *AI Magazine*, 26(4) Winter 2005, pp. 42-44.

Grosz, Barbara J. 2005. “Beyond Mice and Menus,” *Proceedings of the American Philosophical Society*. 149:4, December 2005. pp. 529-523.

Grosz, Barbara J. 2002. “Discourse Structure, Intentions, and Intonation,” *The Languages of the Brain*. A. Galaburda, S. Kosslyn, and Y. Christen (eds.), Harvard University Press.

Ortiz, Charles, Eric Hsu, Marie des Jardins, Timothy Rauenbusch, Barbara J. Grosz, Osher Yadgar, and Sarit Kraus, 2002. "Incremental Negotiation and Coalition Formation for Resource-bounded Agents: Preliminary Report." AAI Fall Symposium on Negotiation Methods for Autonomous Cooperative Systems.

Grosz, Barbara. 1999. “The Contexts of Collaboration.” *Cognition, Agency and Rationality*, K. Korta, E Sosa, and X. Arrazola, eds., Dordrecht: Kluwer. (Paper presented at the *Fifth International Colloquium on Cognitive Science*). pp. 175-187.

Lochbaum, K., B. Grosz, and C. Sidner. 1999. “Discourse Structure & Intention Recognition.” *A Handbook of Natural Language Processing: Techniques and Applications for the Processing of Language as Text*. R. Dale, H. Moisl, and H. Somers, eds.

Grosz, Barbara. 1996. “Collaborative Systems: AAI Presidential Address” In *AI Magazine* 2(17), pp. 67-85.

Grosz, Barbara J. 1989. “Machine Intelligence,” in *Today's Science Tomorrow's Technology*,” M.H. Brennan and D.D.Millar (eds.) Pergamon Press.

Grosz, Barbara J., M. Pollack and C. Sidner, 1989. “Computational Models of Discourse,” In *Foundations of Cognitive Science*, Michael Posner (ed), MIT Press, Bradford Books.

Perrault, C.R. and Grosz, Barbara J. 1986. “Natural Language Interfaces,” Invited Paper, *Annual Review of Computer Science*, Vol. 1, pp. 47-82.

- Grosz, Barbara J. 1985 “Natural-Language Processing (Correspondent’s Report).” In *Artificial Intelligence*, 25 (1), pp. 1-4.
- Grosz, Barbara, 1984. “Issues in the Design of Transportable Natural Language Interfaces,” In *Proc. of the 4<sup>th</sup> Jerusalem Conference on Information Technology*, IEEE Computer Society Press, 1984, pp. 595-599
- Grosz, Barbara J. 1982 “Natural-Language Processing (Correspondent’s Report).” In *Artificial Intelligence* 19(2), pp. 131-136.
- “Discourse Knowledge,” section (three chapters) in *Understanding Spoken Language*, Donald Walker (ed.), pp. 229-344, North-Holland, New York (1978). The chapter “Discourse Analysis” reprinted in *Sublanguage: Studies of Language in Restricted Semantic Domains*, Richard Kittredge and John Lehrberger (eds.), pp. 138-174, Walter de Gruyter, New York (1982).

#### **PUBLICATIONS—EDITED VOLUMES**

- Steering Committee on Every Citizen Interfaces (Member of committee, and author of Chapter 5, “Communication and Collaboration”), 1997. *More Than Screen Deep*, Computer Science and Telecommunications Board, National Research Council.
- Pereira, F.C., and Barbara J. Grosz, eds., 1994., *Natural Language Processing*, The MIT Press, Cambridge.
- Grosz, Barbara J.K. Sparck Jones and B. Webber, eds. 1986. *Readings in Natural-Language Processing*, Morgan Kaufmann, Los Altos, CA.

#### **PUBLICATIONS—WORKSHOP PRESENTATIONS, TECHNICAL NOTES, AND REPORTS, (PARTIAL LIST)**

- Edith Law, Barbara J. Grosz, Lee Sanders, and Shira H. Fischer. SimplyPut: A Crowdsware System for Improving Health Literacy. In the Workshop on Human-Agent Interaction Design and Models (HAIDM). AAMAS 2013. 6th-7th May, 2013. St. Paul, Minnesota.
- Ofra Amir, Barbara J. Grosz, Roni Stern and Lee M. Sanders. “Information Sharing for Care Coordination.” In Proceedings of the Second International Workshop on Human-Agent Interaction Design and Models (HAIDM). AAMAS 2013. 6th-7th May, 2013. St. Paul, Minnesota.
- Roni Stern, Ofra Amir, Barbara J. Grosz, Shira H. Fischer, and Lee M. Sanders. Augie: A dialogue augmenting agent for improved health care communication. In the Workshop on Human-Agent Interaction Design and Models (HAIDM). AAMAS 2013. 6th-7th May, 2013. St. Paul, Minnesota.
- Rachel Greenstadt, Barbara Grosz, and Michael D. Smith. SSDPOP: Improving the Privacy of DCOP with Secret Sharing, Distributed Constraint Reasoning Workshop (DCR), Providence, Rhode Island, September 2007.
- David Sarne and Barbara Grosz: Timing Interruptions for Better Human-Computer Coordinated Planning, 2006 AAAI Spring Symposium on Distributed Plan and Schedule Management, pp. 161-162
- Ece Kamar, Barbara J. Grosz. “Applying MDP Approaches for Estimating Outcome of Interaction in Collaborative Human-Computer Settings.” Workshop paper, workshop presentation, Multi-Agent Sequential Decision Making in Uncertain Domains (MSDM) workshop, May 14-18, 2007, pp 25-32

- Yaakov Gal, Barbara J. Grosz, Sarit Kraus, Avi Pfeffer and Stuart Shieber. "Colored Trails: A Formalism for Investigating Decision-making in Strategic Environments." *IJCAI'05 Workshop on Reasoning, Representation, and Learning in Computer Games*, 2005.
- Carbone, Marco, Y. Gal, S. Shieber, and B. J. Grosz, 2004 "Unifying Annotated Discourse Hierarchies to Create a Gold Standard", Proceedings of the 4th SIGdial Workshop on Discourse and Dialogue.
- Nakatani, C., J. Hirschberg and B. Grosz, 1995. "Discourse Structure in Spoken Language: Studies on Speech Corpora", Proceedings of the AAAI Spring Symposium on Empirical Methods in Discourse Interpretation and Generation, American Association for Artificial Intelligence.
- Hirschberg, J., Nakatani, C. and B. Grosz, 1995. "Conveying Discourse Structure through Intonation Variation," Proceedings of the ECSA Workshop on Spoken Dialogue Systems: Theories and Applications, Visgo, Denmark.
- Grosz, Barbara J., J. Hirschberg and C. Nakatani, 1994. "A Study of Intonation and Discourse Structure in Directions", Proceedings of the AAAI-94 Workshop on the Integration of Natural Language and Speech Processing, American Association for Artificial Intelligence.
- Buvac, S. and Grosz, B. "Approach to Focused Reasoning," Technical Report.
- Grosz, Barbara J. and Hendrix, G.G. 1978. "A Computational Perspective on Indefinite Reference," presented at Sloan Workshop on Indefinite Reference, U. of MA, Amherst, Massachusetts.
- Grosz, Barbara J. 1977. "The Representation and Use of Focus in a System for Dialogue Understanding," Ph.D. thesis, U. of CA, Berkeley, California. Also Tech. Note 151, Artificial Intelligence Center, SRI International, Menlo Park, California.
- Grosz, B.G. 1974. "Typescripts of Task-Oriented Dialogs," SUR Note 146, Artificial Intelligence Center, Stanford Research Institute, Menlo Park, California.
- Gross, Barbara J., O. Johnson, and B. Parlett, 1971. "A Program to Calculate Solutions and Error Bounds to Finite Interval Sturm-Liouville Eigenvalue Problems," Technical Report 2, Computer Science Department, University of California, Berkeley.

## SCIENTIFIC AND PROFESSIONAL SOCIETY SERVICE

- National Academy of Engineering:** Committee on A Global Review of Data-to-Decisions: Integrating Humans, Machines and Networks, 2012-
- Israel Institute for Advanced Study:** Board of Directors, 2012-
- American Philosophical Society:** Vice President, 2011- ; Council 2009-2011
- Woods Hole Oceanographic Institution (WHOI):** Corporation Member, 2008-2011
- ACM: Women's Council Executive Board** 2008-
- National Academy of Sciences:** Committee on Women in Academic Science and Engineering, 2005-2006
- ACM:** Athena Lecturer Selection Committee, 2005-2007
- National Science Foundation Directorate for Computer and Information Science and Engineering:** Advisory Committee, 2002-2006.
- University of Haifa/ITC-IRST Collaboration Unit Focusing on Innovative Technologies for Human Development:** Chair, Scientific Advisory Board, (2003-11).
- Computing Research Association:** Board of Directors, 2002-2004
- International Foundation for Multiagent Systems:** Board of Directors, 1999-2004
- Computer Science and Telecommunications Board:** National Research Council, 1994-98

**American Association for Artificial Intelligence:** Past-President, 1995-97; President, 1993-95; President-Elect, 1991-93; Strategic Planning Committee 1991–present; Executive Council, 1981-84 and 1986-89; Program Committee, 1982-84.

**International Joint Conference on Artificial Intelligence:** Conference Chair and Chair, Board of Trustees, 1989-1991; Board of Trustees, 1989-97; Program Committee, 1982

**CRA Committee on Women:** 1991

**Association for Computational Linguistics:** Executive Committee, 1986-88; Program Committee, 1982; 1989

**ACM Special Interest Group on Artificial Intelligence:** Chair, 1981-83; Vice-chair, 1979-81

**Editorial boards** of *Artificial Intelligence* (1982-2003), *American Journal of Computational Linguistics* (1981-83), *Autonomous Agents and Multi-Agent Systems* (2000-) and *Computational Intelligence* (1987-).

**Correspondent** for Natural Language Processing, *Artificial Intelligence* (1982-1985).

**Associate Editor**, *Annual Review of Computer Science*, 1984-90.

**Reviewer** for numerous journals, conferences, and NSF programs

**Program Committee member** for numerous scientific conferences.

**Visiting Committees** for Computer Science Departments: Stanford University (1991), New York University (1990, 2002), University of Washington (1999), Intelligent Systems Program, University of Pittsburgh, (1992), Research School of Information Science and Engineering, Australian National University (1994).

**Participant** in advisory meetings to set long-term research and funding goals for several sponsors (NSF, SDF, DARPA, ONR, AFOSR)

## UNIVERSITY SERVICE (PARTIAL LIST)

Chair, Task Force on Women in Science and Engineering, Harvard University, 2005

FAS Ad Hoc Committee on Faculty Diversity, 1998-2001

Search Committee, Director of Athletics, 2001

Interim Associate Dean for Affirmative Action, Harvard University, 1993-94

Faculty Council, 1992-95; Docket Committee 1992-93

FAS Standing Committee on Athletics, 1989-91; 1992-98; 1999-

Chair, Subcommittee on Equity, NCAA Athletics Certification Self-Study Report, 1996-98

Standing Committee on Women, 1988-95; 1999; Chair 1989-91 (produced *Report on Women in the Sciences at Harvard*)

Faculty-Student Judicial Board 1988

Search Committee, Associate Director of DEAS, 2000-2001

DEAS Graduate Admissions

DEAS Committee of Six, 1992-93

DEAS Library Committee

Member of numerous DEAS faculty review and promotions committees and Chair of four such committees

Harvard University Standing Committee on Honorary Degrees, 1994-97; 2004-06

## PUBLICATIONS RELATED TO SCIENTIFIC, PROFESSIONAL AND UNIVERSITY SERVICE

Grosz, Barbara J. and R. Davis (eds.) "A Report to ARPA on Twenty-First Century Intelligent Systems." *AI Magazine*. 15(3): 10-20, Fall 1994.

Chair, NSF/AAAI Workshop on "The Role of Intelligent Systems in the National Information Infrastructure." Summer 1994. Report: Weld, et al., "The Role of Intelligent Systems in the National Information Infrastructure," *AI Magazine*, 16(3): 45-64, Fall 1995.

- Grosz, Barbara J. and FAS Standing Committee on the Status of Women, *Women in Science at Harvard; Part I: Junior Faculty and Graduate Students*. February 1991.
- Grosz, Barbara J. and members of Task Force on Women in Science and Engineering, *Report of the Task Force on Women in Science and Engineering*, Harvard University, May 2005.

## **POST-DOCTORAL FELLOWS**

Charles Ortiz, 1996-1998  
Tamara Babaian, 2000-2001  
Rani Nelken, 2004-2006  
David Sarne, 2005-2007  
Meir Kalech, 2007-2008  
Kobi Gal, 2006-2009  
Roni Stern, 2012-

## **PH. D. ADVISEES, HARVARD UNIVERSITY**

### **Current students:**

Ofra Amir

Dimitrios Antos, "Deploying Affect-Inspired Mechanisms to Enhance Agent Decision-Making and Communication", 2012  
Ece Kamar, "Reasoning Effectively Under Uncertainty for Human-Computer Teamwork", 2010.  
Philip Hendrix, "Learning and Decision Making with Reputation Information", 2009.  
Jill Nickerson, "Reference Specification in Multilingual Document Production", 2005  
Timothy Rauenbusch, "Measuring Information Transmission for Team Decision Making", 2004.  
Luke Hunsberger, "Group Decision Making and Temporal Reasoning", 2002.  
Christine Nakatani, "The Computational Processing of Intonational Prominence: A Functional Prosody Perspective", 1997.  
Karen Lochbaum, "Using Collaborative Plans to Model the Intentional Structure of Discourse", 1994.  
Cecile Balkanski, "Actions, Beliefs, and Intentions in Rationale Clauses and Means Clauses", 1993.  
Ehud Reiter, "Generating Appropriate Natural Language Object Descriptions," 1990.

## **PH. D. COMMITTEES, HARVARD UNIVERSITY**

Ken Shan, "Linguistic Side Effect", 2005  
David Sullivan, "Using Probabilistic Reasoning to Automate Software Tuning," 2003.  
Wheeler Ruml, "Adaptive Tree Search", 2002  
Rebecca Hwa, "Learning Probabilistic Lexicalized Grammars for Natural Language Processing," 2001.  
Joshua Goodman, "Parsing-Inside and Out," 1998.  
Lillian Lee, "Similarity-Based Approaches to Natural Language Processing," 1997.  
Kathy Ryall, "Computer-Human Collaboration in the Design of Graphics," 1997.  
Stanley Chen, "Building Probabilistic Models for Natural Language," 1996.  
Roni Khardon, "Learning to be Competent," 1996.  
Andrew Kehler, "Interpreting Cohesive Forms in the Context of Discourse Inference," 1995.

Helen Hanson, "Glottal Characteristics of Female Speakers," 1995.  
Mark Nitzberg, "Depth From Overlap," 1991.  
Steven Salzberg, "Learning with Nested Generalized Exemplars," 1989.

#### **PH.D. ADVISING AND COMMITTEES, BEFORE AND OUTSIDE HARVARD**

Flammia, Giovanni, "Discourse Segmentation of Spoken Dialogue: An Empirical Approach." MIT Lab. for Computer Science, June 1998. (Dissertation Committee).

Stifelman, Lisa, "The Audio Notebook. Paper and Pen Interaction with Structured Speech." Program in Media Arts and Sciences, Massachusetts Institute of Technology, Sept. 1997 (Dissertation Committee; effectively co-advisor).

Pollack, Martha, "The Inference and Evaluation of Plans in Question Answering," Department of Computer and Information Science, University of Pennsylvania, 1986 (Dissertation Committee; effectively co-advisor).

Kameyama, Megumi, "Centering and Zero Anaphora in Japanese," Department of Linguistics, Stanford University, August, 1985 (Dissertation Committee; effectively co-advisor).

Appelt, Douglas E., "Planning Natural Language Utterances to Satisfy Multiple Goals," Department of Computer Science, Stanford University, December 1981 (unofficial reader)

Steinberg, Louis, "A Dialogue Moderator for Program Specification Dialogues in the PSI System," Department of Computer Science, Stanford University, 1981 (Dissertation Committee)

Sidner, Candace, "Towards a Computational Theory of Definite Anaphora Comprehension in English Discourse," Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, May 1979 (Dissertation Committee)

#### **UNDERGRADUATE THESIS AND RESEARCH STUDENTS (PARTIAL LIST)**

Reddy, Swapna, "Constraint Satisfaction-Aided Plan Recognition", 2009.  
Jinger Zhao, "VoiceNotes: Analysis of Programmer Voice Annotations", 2004.  
Moura, André, "Cooperative Behavior Strategies in Colored Trails," 2003.  
Das, Sanmay, "Optimal Behavior in Group Environments," 2001. Hoopes Prize. (co-advisor: Avi Pfeffer)  
Glass, Alyssa, "Creating Socially Conscious Agents: Decision Making in the Context of Group Commitments," 1999.  
Hsu, Eric, "Group Intentions for Collaborative Agents," 1999.  
Kang, Nina, "Planning Coherent Monologues," 1998.  
Ahn, David, "Ellipsis and Opaque Contexts: Higher-Order Unification in Intensional Logic," 1997.  
Bodis, Attila, "Generating Locally Coherent Discourse: A System Implementation," 1996.  
Chang, Nancy, "Generation of Structured Discourse for Intonational Variation," 1994.  
Pasula, Hanna, "Design of a Collaborative Planning System," 1994  
Ketchpel, Steven Paul, "Coalition Formation Among Autonomous Agents," 1993.  
Bussgang, Jeffrey, "Coordinating Natural Language and Graphics in the Automatic Generation of Explanations of Causal Business Models," 1991.  
Sirote, Kira, "The Effect of Perception Verbs on Narrative Discourse," 1991.  
Wang, Michelle Q., "Sequence of Tense in Indirect Discourse," 1990. Hoopes Prize. (co-advisor: Stuart Shieber)

Nakatani, Christine, "Resolving Structural Ambiguity in Discourse: The Case of Prepositional Phrases as Event Modifiers," 1989.

Roy, Scott, "Intelligent Planning Behavior," 1989.

Resnik, Philip Stuart, "Strengthening the No Recursion Hypothesis," 1987.

Caywood, Matthew, research on reasoning about belief, 1998-99

Buvac, Sasa, research on the use of context in reasoning systems, 1989-90

Yarowsky, David, research on word sense disambiguation and machine translation, 1986-87

### **INVITED PRESENTATIONS (PARTIAL LIST)**

"Collaborative Systems: Prospects and Problems," **The 16th International FLAIRS Conference**.  
St. Augustine, FL. May 2003.

"Getting Computer Systems to Function as Team Players," **Seventh Ibero-American Conference on AI and Fifteenth Brazilian Symposium on AI** (Joint Conference). Atibaia, Brazil, November 2000.

"What's Needed to Build Team Players," **Fourth International Conference on Multi-Agent Systems** (ICMAS-2000). Boston, MA. July 2000.

"Discourse Structure, Intentions, and Intonation," **Conference on Language and the Brain**, Harvard Interfaculty Initiative on the Mind, Brain, and Behavior and Fondation Ipsen, Paris, March 1998.

"The Contexts of Collaboration," **Fifth International Colloquium on Cognitive Science**, Donostia - San Sebastian, May 1997.

"Modeling Collaboration for Human-computer Communication," **Twelfth European Conference on Artificial Intelligence**, Budapest, Hungary, August, 1996.

"Discovering the Sounds of Discourse Structure," **Sixteenth International Conference on Computational Linguistics**, Copenhagen, Denmark, August, 1996.

"Collaborative Systems," Presidential Address, American Association for Artificial Intelligence, **Twelfth National Conference on Artificial Intelligence**, July, 1994.

"Collaborative Plans for Dialogue Participation", **Grace Hopper Celebration of Women in Computing**, Washington, D.C., June, 1994.

"Collaborative Plans in Discourse Models," **ATR International Workshop on Speech Translation**, Kyoto, November, 1993.

"Intonational Correlates of Discourse Structure," **International Symposium on Spoken Dialogue**, Tokyo, Japan, November, 1993.

"Modeling Collaborative Plans for Discourse Processing," **Third Bar-Ilan Symposium on Foundations of Artificial Intelligence**, Bar-Ilan University, Ramat-Gan, Israel, June, 1993.

"Collaborative Planning for Discourse," **Ninth European Conference on Artificial Intelligence**, Stockholm, Sweden, August 1990.

"Machine Intelligence," **International Science School**, Sydney, Australia, July 1989.

“Survey: Natural Language Communication with Software Systems,” (with C.R. Perrault), **Fifth National Conference on Artificial Intelligence**, Philadelphia, August 1986.

“Discourse Structure and Intentions,” Invited Speaker on Natural Language Processing, **International Conference on Artificial Intelligence and its Applications**, Singapore, March 1986.

“Discourse Structure and Intentions,” **International Symposium on Language and Artificial Intelligence**, Kyoto, Japan, March 1986.

“A Theory of Discourse Structure,” Keynote Speaker, **Cognitive Science Society Annual Meeting**, 1986.

“The Structure of Discourse Structure,” **23rd Annual Meeting, Association for Computational Linguistics**, Chicago, Illinois, 1985.

“Discourse Structure and Intentions,” **Ninth International Conference on Artificial Intelligence**, Los Angeles CA, 1985.

Invited Speaker, **Symposium on Advances in Cognitive Science**, American Association for the Advancement of Science Annual Meeting, 1985.

“Issues in the Design of Transportable Natural Language Interfaces,” **4th Jerusalem Conference on Information Technology**, Jerusalem, Israel, 1984.

Invited Speaker on “Machine Intelligence,” **Computing 81**, Sydney, Australia, 1981.

“Utterance and Objective,” Invited Speaker on Natural Language Processing, **Sixth International Conference on Artificial Intelligence**, Tokyo, Japan, 1979.

#### **INVITED COURSES AND TUTORIALS (PARTIAL LIST)**

Tutorial, “Collaborative Multi-agent Systems,” AAAI-02, -04 (with C.L.Ortiz and M. Tambe); AAMAS-02, -04.

Tutorial, “Modeling Plans and Intentions for Group Activities and Dialogue,” International Colloquium on Cognitive Science, San Sebastian Spain, May 1997

Invited Course, “Computational Models of Discourse,” Vilem Mathesius Lecture Series, Centre of Vilem Mathesius, Charles University, Prague, The Czech Republic, November, 1997.

Invited Course, “Computational Models of Discourse,” Vilem Mathesius Courses, Centre of Vilem Mathesius, Charles University, Prague, The Czech Republic, November, 1995.

Lectures on Natural Language Processing: “Computational Models of Discourse and Collaborative Planning,” Advanced Course on Artificial Intelligence, European Coordinating Committee for AI, June 1993, Capri Italy.

Tutorial, “Natural Language Processing: From Sentence to Discourse,” Eleventh International Joint Conference on Artificial Intelligence, Detroit Michigan, August 1989 [with James Allen]

Tutorial on discourse, COLING International Conference on Computational Linguistics, 1988 [with Eva Hajicova]

