

DATE

PREPARED:

10/22/04

SUSAN H. BENOFF, Ph.D.

PROFESSIONAL ADDRESS: North Shore-Long Island Jewish Research Institute
350 Community Drive, Room 125
Manhasset, New York 11030
Tel: 516-562-1121/1050/1049
Fax: 516-562-1022
E-mail: sbenoff@nshs.edu

EDUCATION:

1971 B.A. Biology Queens College, City University of New York, Queens, N.Y.
1977 Ph.D. Cell Biology Albert Einstein College of Medicine, Yeshiva University, Bronx, N.Y.

POSTDOCTORAL TRAINING:

1979 Cell Biology Belfer Institute for Advanced Biomedical Studies, Albert Einstein College of Medicine,
Yeshiva University, Bronx, N.Y.

1983 Molecular Biology DNA Sequencing Course, The Waksman Institute of Molecular Biology, The State University of New Jersey, Rutgers, N.J.

1992 Developmental Biology The American Fertility Society, Twenty Fifth Annual Biology Postgraduate Program, Course VIII C Oocytes and Embryos: Basic and Clinical Considerations.

1995 Developmental Biology The Society for Gynecologic Investigation, Postgraduate Biology Course: Biology of Gametes.

1995 Toxicology The American Society for Andrology, Postgraduate Courses: Prenatal Determinants of Postnatal Development; Environmental Effects on Human Semen Quality and on Reproductive Development.

1996 Endocrinology The American Society of Andrology Post Graduate Course: Endocrinology of the Male, From Head to Testes.

1996 Reproductive Immunology The Society for Gynecologic Investigation, Postgraduate Course II, Immunology Update, Topics in Basic and Applied Reproductive Immunobiology

1996 Cell Biology American Association of Biologists Eastern Region Workshop, Andrology and Embryology - "Back to Basics"

1997 Reproductive Biology The American Society of Andrology Postgraduate Course: Animal and Human Reproduction: Genetic and Technological Advances

1997 Toxicology The American Society for Reproductive Medicine, Thirtieth Annual Postgraduate Program,

Quality

2003 Bioinformatics Silicon Genetics GeneSpring Workshops Levels I, II, III and IV

PROFESSIONAL EXPERIENCE:

- 1980-1987 Assistant Professor Department of Anatomy and Cell Biology, SUNY-Health Science Center at Brooklyn, Brooklyn, N.Y.
- 1980-1981 Consultant Experimental Polymer Culture Surfaces Development, Falcon Plastics, Becton Dickinson Research Center, Research Triangle Park, N.C.
- 1988 Senior Scientist Laboratory of Cell Biology and Product Development, Enzo Biochem Inc., NY, NY
- 1989 Consultant Special Products Group, Enzo Biochem Inc., New York, N.Y.
- 1990 Visiting Senior Scientist Live Viral Vaccine Discovery and Development Research Virologist Program Lederle-Praxis Biologicals, Pearl River, N.Y.
- 1991-2000 Director, Molecular Biology Laboratories, Division of Human Reproduction, Department of Obstetrics and Gynecology, North Shore University Hospital, Manhasset, N.Y.
- 1995-Present Associate Professor Department of Obstetrics and Gynecology, New York University School of Medicine, New York, N.Y.
- 1995-Present Associate Professor Department of Cell Biology, Sackler Institute, New York University Post-Graduate Medical School, New York, N.Y.
- 2000-Present Director, Fertility Research Laboratories Center for Molecular and Cell Biology, North Shore-Long Island Jewish Research Institute, Manhasset, N.Y.
- 2000-2004 Associate Investigator, Scientific Track, Center for Oncology & Cell Biology, North Shore-Long Island Jewish Research Institute, Manhasset, NY
- 2004-Present Senior Investigator, Scientific Track, Center for Oncology & Cell Biology, North Shore-Long Island Jewish Research Institute, Manhasset, NY

AWARDS:

- 1980 Outstanding Young Woman of America
- 1993 The Society for Assisted Reproductive Technology Prize Paper (49th Annual Meeting of the American Fertility Society)
- 1994 The General Program Prize Paper (50th Annual Meeting of the American Fertility Society)
- 1995 The General Program Prize Paper (51st Annual Meeting of the American Society for Reproductive Medicine)
- 1996 The Society for Male Reproduction and Urology Prize Paper (52nd Annual Meeting of the American Society for Reproductive Medicine)
- 1997 The International Assisted Reproductive Technology/Andrology on Male Infertility (International ARTA)

Meeting, Alexandria, Egypt, September 1997)

1997 The International Assisted Reproductive Technology/Andrology Award in Basic Sciences

(International ARTA Meeting, Alexandria, Egypt, September 1997)

1997 The Poster Prize Award in Male Infertility (53rd Annual Meeting of the American Society for Reproductive Medicine)

1998 Poster Prize Award (54th Annual Meeting of the American Society for Reproductive Medicine)

1999 Best Poster, International Symposium on Molecular Aspects of Male Reproductive Toxicology (Justus-Liebig-Universitat, Giessen, Germany, November 1999)

2000 Research Excellence Award for a Female Trainee/Fellow (25th Annual Meeting of the American Society of Andrology)

2000 The Society for Male Reproduction and Urology Prize Paper (56th Annual Meeting of the American Society for Reproductive Medicine)

2000 2 Poster Prize Awards (56th Annual Meeting of the American Society for Reproductive Medicine)

2001 Poster Prize Award (57th Annual Meeting of the American Society for Reproductive Medicine)

HONORS:

1980 Invited Speaker, European Molecular Biology Organization Workshop on Muscle Culture in the Study of

Genes Expressed During Differentiation, Shoshon, Israel

1981 Co-Chairman, Session C: Genetic Regulation, Fifty-Second Meeting of the Genetics Society of America in

Conjunction with the Twenty-Seventh Annual Meeting of the Genetics Society of Canada, North Carolina State University, Raleigh, N.C.

1981, 1983 Nominated by the Faculty and Administration of the S.U.N.Y.-Health Science Center at Brooklyn for the

Hirschl and Presidential Young Investigator Award

1983 Fund Raising Chairman, Women's Tennis Association Awards Dinner, March of Dimes Birth Defects

Foundation

1986 Invited Speaker, Use of Recombinant DNA Techniques in the Definition of Mutations Causing Neuromuscular

Diseases, The Royal Society of Medicine Foundation, New York, N.Y.

1992 Representative for the Department of Obstetrics and Gynecology, Biotechnology Luncheon Sponsored by the

New York State Department of Economic Development's International Division, North Shore University Hospital, Manhasset, N.Y.

1992 Representative for the Department of Obstetrics and Gynecology, North Shore University Hospital & Cold Spring Harbor Laboratory Joint Scientific Retreat, The Cold Spring Harbor Laboratory

1992, 1994, 1996, 1998, 2000, 2002 Poster Presenter, Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis

1993 Nominated for the Male Reproduction/Urology Prize Paper Award (49th Annual Meeting of the American Fertility Society)

- 1993 Solicited paper, Human Reproduction
- 1993,1995 Representative for the Department of Obstetrics and Gynecology, North Shore University Hospital, Cold Spring Harbor Laboratory & Picower Institute for Medical Research Joint Scientific Retreat
- 1993,1995, 1997 Solicited paper, American Journal of Reproductive Immunology
- 1993,1995,1997,1999,2001 Poster Presenter, Gordon Research Conference on Fertilization and Activation of Development
- 1993,1995 Solicited editorial, Human Reproduction
- 1994,1995 Research reviewed by Journal of NIH Research
- 1994 Chairman, NICHD Contraceptive Development Branch Sponsored Workshop, Targets for Contraceptive Development: The Sperm Membrane in Fertilization, Bethesda, Maryland
- 1995 Solicited review, Assisted Reproduction Reviews
- 1995,1996 Research abstracted in YEAR BOOK OF INFERTILITY AND REPRODUCTIVE ENDOCRINOLOGY
- 1995 Research findings highlighted at NIH Symposium: The NIH Program In Reproduction-A View to the 21st Century, 28th Annual Meeting of The Society for the Study of Reproduction
- 1995 Nominated for The Society for Assisted Reproductive Technology Prize Paper Award (51st Annual Meeting of the American Society for Reproductive Medicine)
- 1995 Nominated for The Male Reproduction/Urology Prize Paper Award (51st Annual Meeting of the American Society for Reproductive Medicine)

HONORS (Cont'd.):

- 1995 Leader, Roundtable Discussion, "Effect of Varicocele on Sperm Function", 51st Annual Meeting of The American Society for Reproductive Medicine
- 1996 Instructor, American Association of Bioanalysts Sponsored Workshop: ANDROLOGY AND EMBRYOLOGY - BACK TO BASICS
- 1996,1998,1999,2000 Judge, Lea Ronal/Shipley Ronal Invitational Science Fair
- 1997,1998 Solicited review, Molecular Human Reproduction
- 1997 Solicited review, Assisted Reproductive Technology and Andrology
- 1997 Solicited manuscript, Archives of Sexually Transmitted Diseases and HIV
- 1997 Solicited manuscript, Advances in Contraceptive Delivery Systems
- 1997 Member, Ad Hoc Advisory Committee, Contraceptive Development Branch of the Center for Population Research, NICHD/NIH
- 1997 Invited Speaker, Seminar and Workshop: New Methods of Assessing Sperm Function, 53rd Meeting of the American Society for Reproductive Medicine
- 1997-1999 Vice-President, Women in Andrology
- 1998 Solicited review, Human Reproduction Update
- 1998 Solicited review, In: Baldi E. ed. Frontiers in Bioscience, Sperm biology: from Basic to Clinic
- 1998 Nominated for The Male Reproduction/Urology Prize Paper Award (54th Annual Meeting of the American Society for Reproductive Medicine)
- 1998 Workshop Chair, "Outcomes Assessment/Biomarkers of Exposure", International Conference on Hazardous Substances and Male Reproductive Health, co sponsored by NIEHS/Superfund Basic Research Program, Mt. Sinai School of Medicine Research Program, NIOSH, N.Y. Academy of Medicine, EPA and ATSDR
- 1998 Invited Speaker, Genetic Basis of Male Infertility What Do We Do With The Information?, British Fertility Society Workshop, Annual Meeting of the British

Andrology Society

- 1999-Present Member of grant review committee, Wellcome Trust
- 1999-2000 President, Women in Andrology
- 1999 Solicited review, Human Fertility
- 1999 Invited Speaker, Society for Male Reproduction and Urology Post Graduate Course, "Laboratory Methods: Current Methods and A Look Towards the Future", 55th Annual Meeting of The American Society for Reproductive Medicine
- 1999 Invited Speaker, International Symposium on Molecular Aspects of Male Reproductive Toxicology, Justus-Liebig-Universitat, Giessen, Germany
- 2000 Invited Speaker, Center for Population Research, NICHD/NIH
- 2000 Chair, Nominating Committee, The Society for Male Reproduction and Urology
- 2000,2001 Solicited review, Human Reproduction Update
- 2000 Solicited paper, Andrologia
- 2000 Leader, Roundtable Discussion, 56th Annual Meeting of The American Society for Reproductive Medicine
- 2000-2001 Secretary/Treasurer, The Society for Male Reproduction and Urology
- 2001 Invited Speaker, Seminar and Workshop, "ABCs of Molecular Biology and Male Infertility", 57th Annual Meeting of The American Society for Reproductive Medicine
- 2001-2002 Vice-President, The Society for Male Reproduction and Urology
- 2001 Member, NICHD Special Study Section for RFA HD-00-018, Microbocide Preclinical Development Program (Declined)
- 2002 Member, NICHD Special Study Section for RFA HD-01-011, Cooperative Contraceptive Research Centers
- 2002 Invited Speaker, Zinc Signals 2002
- 2002 Invited Speaker, 6th Dies Andrologicus in Marburg, The Calcium Ion in Human Reproduction
- 2002 Nominated for The Society for Male Reproduction and Urology Prize Paper Award and for the General Program
Prize Paper Award (58th Annual Meeting of the American Society for Reproductive Medicine)
- 2002 Invited review, Chinese National Journal of Andrology (Declined)
- 2002-2003 President, The Society for Male Reproduction and Urology
- 2002-2003 Member, American Society for Reproductive Medicine Board of Directors
- 2002-2003 American Society for Reproductive Medicine Media and Congressional Spokesman, Male Reproduction and Urology
- 2003 Invited Speaker, Zinc Signals 2003
- 2003 Member, NIDDK Special Emphasis Panel for ZDK1 GRB-9 M1 R, Urology Research Centers
- 2003 Member, NICHD Special Study Section for "Male Site, Contraceptive Clinical Trials" (Declined)
- 2003 Chair, American Society for Reproductive Medicine's Research Task Force
- 2003 Ad hoc reviewer, NICHD Reproduction, Andrology and Gynecology Committee
- 2003,2004 Chairman, NICHD Special Study Section to review RO3 applications
- 2004 Invited Speaker, Zinc Signals 2004
- 2004 Organizer, The Society for Male Reproduction and Urology Workshop at the 20th Annual Meeting of the European Society for Human Reproduction and Embryology
- 2005 Invited Plenary Lecture, Update on the Biochemical Basis of Spermatotoxicity, Societ for the Study of Male

RESEARCH SUPPORT

Past Support:

1971-1974 NIH Genetics Traineeship
1974-1977 NIH Predoctoral Traineeship
1977-1979 NIH Cancer Program Postdoctoral Research Associate
1979-1980 (Declined) NIH Postdoctoral Fellowship
1979 Muscular Dystrophy Association Postdoctoral Fellowship
1980-1982 NIH Biomedical Research Support Grant
1980-1981 Becton Dickinson Experimental Polymer Surfaces Development Award
1981,1982,1983 Muscular Dystrophy Association Basic Research Grant
1981-1983,1984 New York Heart Association Grant-in-Aid
1981,1982,1983 March of Dimes Birth Defects Foundation/Basil O'Connor Starter
Research Grant
1983-1984 March of Dimes Continuing Research Grant
1983-1984,1985-1986 New York Heart Association Participating Laboratory Fellowship
1993-1995 HUMAN SPERM ZONA ACCEPTOR: CHANGES WITH VARICOCELE
LIGATION
American Foundation for Urologic Disease/Searle Office Based Research
Grant (\$100,000)
1995-1996 MALE CONTRACEPTION: DEFINING THE PRIMARY STRUCTURE OF THE
CALCIUM ION CHANNEL IN THE HUMAN SPERM
American Society for Reproductive Medicine/Organon Inc. Research
Grant in Reproductive Medicine (\$20,000)
1994-1998 HUMAN SPERM ZONA ACCEPTOR: ENVIRONMENTAL EFFECTS
NIEHS 1 RO1 ES06100 (\$961,722) (years 1-3)
1998-1999 EFFECT OF BLOOD PLASMA LEAD ON REPRODUCTIVE HORMONES AND
HUMAN MALE INFERTILITY
Research and Development Funding, Serono Laboratories, Inc. (\$8,350)
1998-2000 SPERM PROGESTERONE RECEPTOR, K⁺ CHANNEL & Pb EXPOSURE
NIOSH 1 RO3 OH03584 (\$79,900)
1999-2000 MOLECULAR CLONING OF THE Pb²⁺ SENSITIVE ION CHANNEL
ASSOCIATED WITH THE SPERM SURFACE PROGESTERONE
RECEPTOR
American Society for Reproductive Medicine/Organon Inc. Research
Grant in Reproductive Medicine (\$20,000)
2000-2003 RENAL FUNCTION IN CONGESTIVE HEART FAILURE
NHLBI 1 RO1 HL 61506 (\$1,107,000) (Declined)
1998-2002 HUMAN SPERM ZONA ACCEPTOR: ENVIRONMENTAL EFFECTS
NIEHS 2 RO1 ES06100 (\$961,491) (years 4-6)
2000-2002 MALE SUBFERTILITY BY Ni²⁺ POISONING OF Ca²⁺ CHANNELS?
CDC/NIOSH 1 R21 OH 07330 (\$246,000)

Current Support:

2000-2005 INCREASED TESTICULAR Cd²⁺ & INFERTILITY WITH VARICOCELE
NIEHS 1 RO1 ES 10496 (\$1,829,000) (years 1-5)
2002-2006 HUMAN SPERM ZONA ACCEPTOR: ENVIRONMENTAL EFFECTS
NIEHS 2 RO1 ES06100 (\$1,468,800) (years 7-11)
2003-2004 ACQUISITION OF A MASS SPECTROMETRY RESOURCE

Pending Support:

2004-2007 CIGARETTE SMOKE Cd EXPOSURE IN UTERO & LOW SPERM COUNT
NIEHS 1 R21 ES012288-01 (\$482,400)

CONFERENCE SUPPORT:

2002 ANNUAL SMRU TRAVELING SCHOLAR CONFERENCE
NICHD R13 HD044249-01 (\$10,000)
2003 ANNUAL SMRU TRAVELING SCHOLAR CONFERENCE
NICHD R13 HD044249-02 (\$10,000)

PATENTS AND PATENT APPLICATIONS:

1994 Method for Assessing Infertility By Binding of Mannose to Sperm Cells
, U.S. Patent No. 5,994,086
Date of Patent: 30 November 1999
1994 Male Contraceptives, U.S. Serial No. 08/701/826
U.S. Patent Number: 5,854,254
Date of Patent: 29 December 1998
2000 Oligonucleotide probes, assays and kits for varicocele associated infertility
U.S. Provisional Patent Application No. 60/281,830 (Filed 5 October 2000)
2001 Oligonucleotides for detecting male infertility
U.S. Non-Provisional Patent Application (Filed 5 October 2001)

MAJOR COMMITTEE ASSIGNMENTS:

Medical School (S.U.N.Y. Health Science Center at Brooklyn):

1981-1983 Finance Committee, Department of Anatomy and Cell Biology
1981-1982 Seminar Chairman, Department of Anatomy and Cell Biology
1982-1984 Committee of the Faculty and Professional Staff, College of Medicine
1982-1983 Student Recruitment Sub-committee, School of Graduate Studies
1985 Committee on Nominations, Elections and Ballots, College of Medicine

Hospital:

1981-1984 Biohazard and Recombinant DNA Advisory Committee, Institute for Basic
Research in Mental Retardation, Staten Island, N.Y.
1994-2000 Voting member, Research, Clinical Investigation and Publications Committee,
North Shore University Hospital

MEMBERSHIPS, OFFICES, AND COMMITTEE ASSIGNMENTS IN PROFESSIONAL SOCIETIES:

1992-2000 American Association for the Advancement of Science
1993-Present The American Society for Reproductive Medicine
Abstract Committee, 51st Annual Meeting, 1995
Abstract Committee, 54th Annual Meeting, 1998
Abstract Committee, 55th Annual Meeting, 1999
Oral Session Moderator, 55th Annual Meeting, 1999
Oral Session Moderator, 57th Annual Meeting, 2001
General Program Committee, 58th Annual Meeting, 2002
Member, ASRM Board of Directors, 2002-2003 (SMRU Representative)

- General Program Committee, 59th Annual Meeting, 2003
 Oral Session Moderator, 59th Annual Meeting, 2003
 Chair, ASRM Research Task Force, 2003-Present
 Oral Session Moderator, 60th Annual Meeting, 2004
- 1993-Present The American Society of Andrology
 Chairman, Membership Committee, 1995-1998
 Abstract Committee, 22nd Annual Meeting, 1997
 Vice-President, Women in Andrology, 1997-1999
 Chair, Women in Andrology, 1999-2000
 Awards Committee, 1999-2001, 2003-Present
 Nominations Committee, 1999-Present
- 1993-1995 The New York Metropolitan Embryologist Society
 1995-Present The Society for Gynecologic Investigation
 Abstract Committee, 44th Annual Meeting, 1997
 Abstract Committee, 45th Annual Meeting, 1998
 Scientific Program Committee, 48th Annual Meeting, 2001
 Scientific Program Committee, 49th Annual Meeting, 2002
 Scientific Program Committee, 51st Annual Meeting, 2004
- 1996-Present The Society for Male Reproduction and Urology
 Faculty, ASRM Post-Graduate Course, 1999
 Chair, Nominating Committee, 1999-2001
 Board of Directors, 2000-Present
 Secretary/Treasurer, 2000-2001
 Vice-President, 2001-2002
 Chair, Abstract Committee 2002
 President, 2002-2003
 Immediate Past President, 2003-2004
 Director of Scholarships Program, 2002-Present
- 2004-Present The Society for Reproductive Endocrinology and Infertility
 Member, T32 Grant review committee

JOURNAL EDITORIAL BOARDS:

- 1999-2001 Human Reproduction Update
 2004-Present Fertility and Sterility

SCIENTIFIC JOURNALS AD HOC REVIEWER

- 1993, 1999-2004 Ad hoc reviewer, Fertility and Sterility
 1993-Present Ad hoc reviewer, Human Reproduction/Molecular Human
 Reproduction/Human Reproduction Update
 1996-1999 Ad hoc reviewer, Biology of Reproduction
 1997-Present Ad hoc reviewer, Journal of Clinical Endocrinology and Metabolism
 1999-Present Ad hoc reviewer, Journal of Andrology
 1999-Present Ad hoc reviewer, Developmental Genetics
 1999-Present Ad hoc reviewer, Zygote
 2001-Present Ad hoc reviewer, Cancer Detection and Prevention
 2003-Present Ad hoc reviewer, Asian Journal of Andrology
 2004-Present Ad hoc reviewer, Steroids
 2004-Present Ad hoc reviewer, Journal of Urology
 2004-Present Ad hoc reviewer, Reproductive Toxicology
 2004-Present Ad hoc reviewer, Trends in Molecular Medicine

1981 1982 Advanced Clinical Genetics (Medical)
 Course revision Histology and Cell Biology (Medical)
 1980 Genetics lectures and review
 1981 Cytogenetics laboratory teaching aids
 1982 Clinical correlations
 1982,1983 Discussion groups on medical ethics and genetic counseling

BIBLIOGRAPHY

Original Reports:

1. Grzechik KH, Grzechik AM, Benoff S, Romeo G, Siniscalco M, Van Somerem H, Kahn PM, Westerveld A, Bootsma D. X-linkage of human alpha-galactosidase. *Nature* 1972;240:48-50.
2. Benoff S, Skoultchi A. Control of hemoglobin production in somatic hybrids of mouse erythroleukemic cells and mouse lymphoma or bone marrow cells. I. Evidence for control mediated by an X-linked locus. *Cell* 1977;12:262-274.
3. Benoff S, Bruce S, Skoultchi A. Negative control of hemoglobin production in somatic cell hybrids due to heme deficiency. *Proc. Natl. Acad. Sci. USA* 1978;74:4354-4358.
4. Benoff S, Nadal-Ginard B. Cell-free translation of mammalian myosin heavy chain messenger RNA from growing and fused L₆Eg myoblasts. *Biochemistry* 1979;18:494-500.
5. Benoff S, Nadal-Ginard B. Most myosin heavy chain mRNA in L₆Eg myotubes has a short poly(A) tail. *Proc. Natl. Acad. Sci. USA* 1979;76:1853-1857.
6. Benoff S, Bruce S, Skoultchi A. X-linked control of globin mRNA and hemoglobin production of erythroleukemia x lymphoma cell hybrids. *Somatic Cell Genetics* 1980;6:15-28.
7. Benoff S, Nadal-Ginard B. Transient induction of poly(A)-short myosin heavy chain mRNA during terminal differentiation of L₆Eg myoblasts. *J. Mol. Biol.* 1980;140:283-298.
8. Suriani RJ, Benoff S. Possible causal relationship between an unusual MHC mRNA and myofibrillar disorganization in adult *dy/dy* skeletal muscle. II. Preliminary results from analysis of cDNA clones. National Student Research Forum, Excellence in Research Competition, 1987.
9. Benoff S, Cooper GW, Hurley I, Napolitano B, Rosenfeld DL, Scholl GM, Hershlag A. Human sperm fertilizing potential *in vitro* is correlated with differential expression of a head-specific mannose-ligand receptor. *Fertility and Sterility* 1993;59:854-862.
10. Benoff S, Hurley I, Cooper GW, Mandel FS, Rosenfeld DL, Hershlag A. Head-specific mannose-ligand receptor expression in human spermatozoa is dependent on capacitation-associated membrane cholesterol loss. *Human Reproduction* 1993;8:2141-2154.
11. Benoff S, Hurley I, Cooper GW, Mandel FS, Hershlag A, Scholl GM, Rosenfeld DL. Fertilizing potential *in vitro* is correlated with head-specific mannose-ligand receptor expression, acrosome status and membrane cholesterol content. *Human Reproduction* 1993;8:2155-2166.
12. Benoff S, Cooper GW, Hurley I, Mandel FS, Rosenfeld DL. Antisperm antibody binding to human sperm inhibits capacitation induced changes in the levels of plasma membrane sterols. *American Journal of Reproductive Immunology* 1993;30:113-130. (Solicited paper prepared for a Special Issue devoted to papers related to reproductive immunology presented at The Society for Gynecologic Investigation, Toronto, Ontario,

- Canada, March 31-April 3, 1993).
13. Benoff S, Cooper GW, Hurley I, Rosenfeld DL, Scholl GM, Gilbert BR, Hershlag A. The effect of calcium ion channel blockers on sperm fertilization potential. *Fertility and Sterility* 1994;62:606-617. (The Society for Assisted Reproductive Technology Prize Paper presented at the 49th Annual Meeting of The American Fertility Society).
 14. Hershlag A, Cooper GW, Benoff S. Pregnancy following discontinuation of a calcium channel blocker in the male partner. *Human Reproduction* 1995;10:599-606.
 15. Benoff, S., Rushbrook, J.I., Hurley, I.R., Mandel, F.S., Barcia, M., Cooper, G.W. and Hershlag, A. (1995). Co-expression of mannose-ligand and non-nuclear progesterone receptors identifies an acrosome reaction-inducible subpopulation in fertile donor sperm. *American Journal of Reproductive Immunology* 1995;34:100-115. (Solicited paper prepared for a Special Issue devoted to papers related to reproductive immunology presented at The American Fertility Society, San Antonio, Texas, November 5-11, 1994).
 16. Benoff S, Barcia M, Hurley IR, Cooper GW, Mandel FS, Heyner S, Garside WT, Gilbert BG, Hershlag A. Classifications of male factor infertility relevant to IVF insemination strategies using mannose ligands, acrosome status and anti-cytoskeletal antibodies. *Human Reproduction* 1996;11:1905-1918.
 17. Benoff S, Hurley IR, Barcia M, Mandel FS, Cooper GW, Hershlag A. A potential role for cadmium in the etiology of varicocele-associated infertility. *Fertility and Sterility* 1997;67:336-347. (The General Program Prize Paper at the 51st Annual Meeting of The American Society for Reproductive Medicine).
 18. Goodwin LO, Leeds NB, Hurley IR, Mandel FS, Pergolizzi RG, Benoff S. Isolation and characterization of the primary structure of testis-specific calcium channel: implications for contraception. *Molecular Human Reproduction* 1997;3:255-268. (The Society for Male Reproduction and Urology Prize Paper at the 52nd Annual Meeting of the American Society for Reproductive Medicine).
 19. Hershlag A, Paine T, Scholl GS, Rosenfeld DL, Mandel FS, Zhu JZ, Guhring P, Mecerod D, Benoff S. Acrobeads test as a predictor of fertilization *in vitro*. *American Journal of Reproductive Immunology* 1997;37:291-299. (Solicited paper published in a Special Issue of AJRI devoted to papers presented at the 52nd Annual Meeting of The American Society for Reproductive Medicine, Boston, MA, November 2-6, 1996).
 20. Benoff S, Hurley IR, Mandel FS, Cooper GW, Hershlag A. Induction of the human sperm acrosome reaction with mannose-containing neoglycoprotein ligands. *Molecular Human Reproduction* 1997;3:827-837.
 21. Benoff S, Hurley IR, Mandel FS, Paine T, Jacob A, Cooper GW, Hershlag A. Use of mannose ligands in IVF screens to mimic zona pellucida-induced acrosome reactions and predict fertilization success. *Molecular Human Reproduction* 1997;3:839-846.

Original Reports (Cont'd.):

22. Hurley IR, Hershlag A, Benoff S. Mannose receptors, zinc and fertilization success. *Archives of Sexually Transmitted Diseases and HIV* 1997;11:241-253. (Solicited manuscript and winner of the International ARTA Award in Basic Sciences)
23. Jacob A, Hurley I, Mandel FS, Benoff S. Calcium channel blockers as a potential male contraceptive: mechanism underlying the production of human male infertility. *Advances in Contraceptive Delivery Systems* 1997;13:223-238. (Solicited manuscript)
24. Goodwin LO, Leeds NB, Hurley I, Cooper GW, Pergolizzi RG, Benoff S. Alternative splicing of exons in the alpha-1 subunit of the rat testis voltage-dependent calcium channel generates germ-line specific dihydropyridine binding sites. *Molecular Human Reproduction* 1998;4:215-226.
25. Jacob A, Hurley I, Mandel FS, Hershlag A, Cooper GW, Benoff S. Human sperm non-nuclear progesterone receptor expression is a novel marker for fertilization outcome.

- Molecular Human Reproduction 1998;4:533-542.
26. Hershlag A, Scholl GM, Jacob A, Mandel FS, Guhring P, Paine T, Cooper GW, Benoff S. Mannose ligand receptor assay as a test to predict fertilization *in vitro*: a prospective study. *Fertility and Sterility* 1998;70:482-491.
 27. Goodwin LO, Leeds NB, Guzowski D, Hurley IR, Pergolizzi RG, Benoff S. Identification of structural elements of the testis-specific L-type voltage-dependent calcium channel that potentially regulate biophysical properties. *Molecular Human Reproduction* 1999;5:311-322.
 28. Benoff S, Cooper GW, Paine T, Hurley IR, Napolitano B, Jacob A, Scholl GM, Hershlag A. Numerical dose-compensated *in vitro* fertilization inseminations yield high fertilization and pregnancy rates. *Fertility and Sterility* 1999;71:1019-1028.
 29. Jacob A, Hurley IR, Goodwin LO, Cooper GW, Benoff S. Molecular characterization of a voltage-gated potassium channel expressed in rat testis. *Molecular Human Reproduction* 2000;6:303-313.
 30. Goodwin LO, Karabinus DS, Pergolizzi RG, Benoff S. L-type voltage-dependent calcium channel alpha-1C subunit mRNA is present in ejaculated human spermatozoa. *Molecular Human Reproduction* 2000;6:127-136.
 31. Benoff S, Cooper GW, Centola GM, Jacob A, Hershlag A, Hurley IR. Metals ions and human sperm mannose receptors. *Andrologia* 2000;32:317-329. (Solicited paper)
 32. Benoff S, Gilbert BR. Varicocele and male infertility: Part I. Preface. *Human Reproduction Update* 2001;7:47-54.
 33. Thanakornyothin N, Susin M, Benoff S, Wilkes BM. Increased renin immunostaining in preglomerular arterioles following myocardial infarction in the rat. *Journal of Laboratory and Clinical Medicine* 2001;137:21-27.
 34. Marmar JL, Benoff S. Varicocele repair when is it required and when is it not? *AUA News* 2002;7(7):38-41.
 35. Benoff S, Centola GM, Millan C, Napolitano B, Marmar JL, Hurley IR. Increased seminal plasma lead levels adversely affect the fertility potential of sperm in *in-vitro* fertilization. *Human Reproduction* 2003;18:374-383.
 36. Benoff S, Hurley IR, Millan MA, Napolitano B, Centola GM. Seminal lead concentrations negatively affect artificial insemination outcomes. *Fertility and Sterility* 2003;80:517-525.
 37. Benoff S, Millan C, Hurley IR, Napolitano B, Marmar JL. Bilateral increased apoptosis and bilateral accumulation of cadmium in infertile men with left varicocele. *Human Reproduction* 2004;19:616-627.
 38. Benoff S, Goodwin LO, Millan C, Hurley IR, Pergolizzi RG, Marmar JL. Deletions in L-type calcium channel $\alpha 1$ subunit testicular transcripts correlate with testicular cadmium and apoptosis in infertile men with varicoceles. *Fertility and Sterility* 2004;in press.
 39. Benoff S, Millan C, Hurley IR, Marmar JL, Centola GM. The role of increased seminal plasma lead in male infertility. *Journal Salud (i) Ciencia* 2004. (Solicited paper, in preparation).
 40. Benoff S, Millan C, Centola GM, Marmar JL, Hurley IR. Human sperm mannose receptor expression is modulated by the level of zinc in seminal plasma. In preparation.
 41. Jacob A, Hurley IR, Cooper GW, Centola GM, Napolitano B, Benoff S. The presence of Kv1.3 mRNA in ejaculated human sperm predicts the ability of sperm to undergo a progesterone-stimulated acrosome reaction. In preparation.

Reviews and Educationally Relevant Publications:

1. Skoultchi A, Benoff S, Bruce A, Lin P, Lional H, Pyati J. Genetic control of hemoglobin production by erythroleukemic cells. In: Clarkson B, Marks P, eds. *Control of Cell*

Proliferation: Hemopoietic Cells. New York: Cold Spring Harbor Laboratory, 1978:723-740.

2. Benoff S. The role of cholesterol during capacitation of human spermatozoa. *Human Reproduction* 1993;8:2001-2008. (Solicited editorial).
3. Benoff S, Cooper GW, Hurley I, Mandel FS, Rosenfeld DL, Scholl GM, Hershlag A. The effect of calcium ion channel blockers on sperm fertilization potential. In: Mishell DR Jr, Lobo RA, Sokol RZ, eds. *Yearbook of Infertility and Reproductive Endocrinology*. St. Louis: Mosby-Year Book, Inc. 1995:84-86.
4. Benoff S, Cooper GW, Hurley IR, Hershlag A. Calcium ion channel blockers and sperm fertilization. *Assisted Reproduction Reviews* 1995;5:2-13. (Solicited review).
5. Hershlag A, Benoff S. Assessment of sperm function in preparation for assisted reproductive techniques. *Society for Assisted Reproductive Technology Annual Meeting Postgraduate Course VI: State of the Art*. Birmingham: American Society for Reproductive Medicine 1995:1-32.
6. Hershlag A, Benoff S. The role of sperm mannose receptor in zona binding and the acrosome reaction. *Society for Assisted Reproductive Technology Annual Meeting Postgraduate Course VI: State of the Art*. Birmingham: American Society for Reproductive Medicine 1995:33-52.

-
-
Reviews and Educationally Relevant Publications (Cont'd.):

7. Hershlag A, Cooper GW, Benoff S. Pregnancy following discontinuation of a calcium channel blocker in the male partner. In: Mishell DR Jr, Lobo RA, Sokol RZ, eds. *Yearbook of Infertility and Reproductive Endocrinology*. St. Louis: Mosby-Year Book, Inc. 1996:82-84.
8. Benoff S. Sperm function testing what are they, when to do them, and what do they mean? *American Association of Bioanalysts' Eastern Region Workshop: Andrology and Embryology -Back to Basics*. London, Ontario, Canada, 1996:9.1-9.43.
9. Benoff S. Environmental toxins and varicocele. *Assisted Reproductive Technology/Andrology* 1997;IX:261-284. (Solicited review and winner of the International ARTA Award on Male Infertility)
10. Benoff S. Carbohydrates and fertilization: an overview. *Molecular Human Reproduction* 1997;3:599-637. (Solicited review opening a series of papers on the role of carbohydrates on gene action and cell recognition).
11. Benoff S. Modeling human sperm-egg interactions *in vitro*: signal transduction pathways regulating the acrosome reaction. *Molecular Human Reproduction* 1998;4:453-471. (Solicited review)
12. Benoff S. Voltage-dependent calcium channels in spermatozoa. In: Baldi E. ed. *Frontiers in Bioscience, Sperm biology: from Basic to Clinic*. 1998;3:d1220-1240. (Solicited review)
13. Benoff S. Investigations into the molecular basis of human sperm-egg interactions: what's next? *Molecular Human Reproduction* 1998;4:925-928.
14. Benoff S. Receptors and channels regulating acrosome reactions. *Human Fertility* 1999;2:42-55. (Solicited review)
15. Benoff S, Jacob A. Human sperm non-nuclear progesterone receptor: a novel marker for fertilization outcome. *Society for Male Reproduction and Urology Post-Graduate Course, Laboratory Evaluation of the Infertile Couple: Current Methods and A Look Towards the Future*. Birmingham: American Society for Reproductive Medicine 1999:53-76.
16. Benoff S, Jacob A. Effects of calcium ion channel blockers on sperm fertilization potential. *Society for Male Reproduction and Urology Post-Graduate Course, Laboratory Evaluation of the Infertile Couple: Current Methods and A Look Towards the Future*.

- Birmingham: American Society for Reproductive Medicine 1999:159-182.
17. Benoff S, Jacob A, Hurley IR. Male infertility and environmental exposure to lead and cadmium. *Human Reproduction Update* 2000;6:107-121. (Solicited review)
 18. Benoff S, Hurley IR. Epigenetic and experimental modifications in early mammalian development. *Human Reproduction Update* 2001;7:211-216.
 19. Benoff S. Book review: Handbook of in vitro fertilization, 2nd ed. (Trounson AO, Gardiner DK, eds). *Journal of Andrology* 2001; 22:360.
 20. Marmar JL, Benoff S. Editorial: New scientific information related to varicoceles. *Journal of Urology* 2003;170:2371-2373.

Books and Other Monographs:

1. Benoff S. X-linked control of hemoglobin production in somatic cell hybrids. Doctoral dissertation, Sue Golding Graduate Division of Medical Sciences, Albert Einstein College of Medicine, 1977.

Book Chapters:

1. Marmar JL, Millan C, Hurley IR, Benoff S. Detection of microdeletions of the L-type calcium channel within testicular tissue: Should these men have ICSI? In: Robaire B, Chemes H, Morales CR, eds. *Andrology in the 21st Century. Proceedings of the VII International Congress on Andrology. Short Communications.* Englewood, New Jersey: Medimond Publishing Co. Inc. 2001:397-401.
2. Millan C, Sokol RZ, Shi Q, Hurley IR, Centola GM, Ilasi J, Rooney E, Benoff S. Lead induces epigenetic modification of rat testicular gene expression: a DNA microarray study. In: Robaire B, Chemes H, Morales CR, eds. *Andrology in the 21st Century. Proceedings of the VII International Congress on Andrology. Short Communications.* Englewood, New Jersey: Medimond Publishing Co. Inc. 2001:335-339.

On-Line Publications:

1. Hurley IR, Benoff S. Metallic occupational toxins and male infertility. *IVPCARE*, 2000.
2. Millan C, Hurley IR, Benoff S. Zinc ions in spermatozoa. *Zinc Signals* 2002.

Abstracts:

1. Benoff S, Skoultchi A. X-linked control of hemoglobin production in somatic cell hybrids. *Genetics* 1977;86:S5-S6. (Podium)
2. Benoff S, Bruce S, Skoultchi A. Negative control of heme biosynthesis and hemoglobin production in somatic cell hybrids. *Genetics* 1977;86:S5. (Podium)
3. Benoff S, Nadal-Ginard B. Presumptive translational control of myosin production in a cultured rat muscle cell line. *Genetics* 1978;88:8s. (Podium)
4. Benoff S, Nadal-Ginard B. Accumulation of myosin heavy chain mRNA during myogenic differentiation. *J. Cell Biol.* 1978;79:36a. (Podium)

Abstracts (Cont'd.):

5. Benoff S, Nadal-Ginard, B. Induction of poly(A) short myosin heavy chain mRNA during L₆E₉ myoblast differentiation. *Genetics* 1979;91:6 7s. (Podium)
6. Benoff S, Nadal-Ginard, B. Modulation of cytoplasmic poly(A) short myosin heavy chain mRNA levels during L₆E₉ myoblast differentiation. In: *EMBO Workshop on Muscle Cell Culture in the Study of Gene Expression During Development*, Shores, 1980; Abstracts, p. 23. (Podium)
7. Feldman D, Benoff S. Compartmentalization of myosin heavy chain mRNA during rat myogenic development. *Genetics* 1981;94:S36. (Podium)

8. Feldman D, Benoff S. Differential utilization of myosin heavy chain mRNA isoforms during development in skeletal muscle cultures. In: Molecular and Cellular Control of Muscle Development, The Cold Spring Harbor Laboratory, 1981;Abstracts, p. 23. (Podium)
9. Feldman D, Benoff S. Differential utilization of myosin heavy chain mRNA isoforms during rat myogenic development. J. Cell Biol. 1981;91:353a. (Podium)
10. Benoff S, Lepler S, Mercurio G. Separation of commitment and molecular development in muscular dystrophy. Genetics 1983;104:S6. (Podium)
11. Benoff S, Grund, S. Gene rearrangements associated with avian muscle development. Genetics 1983;104:S5 S6. (Podium)
12. Mercurio G, Lepler S, Benoff S. Commitment defect inhibits *in vitro* terminal differentiation of dystrophic mouse myoblasts. J. Cell Biol. 1983;97:461a. (Podium)
13. Joesten M, Benoff S. A system for reversible inhibition of commitment in normal muscle cells. Genetics 1984;107:S52. (Podium)
14. Mercurio G, Joesten M, Benoff S. Development of dystrophic myoblasts *in vitro*. Genetics 1984;107:S73 S74. (Podium)
15. Suriani RJ, Benoff S. Relation of an unusual myosin heavy chain (MHC) mRNA to defective sarcomerogenesis in murine muscular dystrophy. National Student Research Forum Abstracts, 1986;p.32. (Podium)
16. Suriani RJ, Benoff S. Relation of an unusual myosin heavy chain (MHC) mRNA to defective sarcomerogenesis in murine muscular dystrophy. National Student Research Forum Abstracts, 1987;p.19. (Poster)
17. Benoff S, Cooper G, Arnold L, Sun HQ, Rosenfeld DL, Hershlag A. Sperm surface mannose-specific lectin: a molecular marker for capacitation events. Society for Gynecologic Investigation, 39th Annual Scientific Meeting, 1992;Abstract No. 435, p.326. (Podium)
18. Benoff S, Hurley I, Cooper G, Arnold L, Sun HQ, Rosenfeld DL, Hershlag A. Cholesterol affects surface expression of human sperm mannose receptor. Society for Gynecologic Investigation, 39th Annual Scientific Meeting, 1992;Abstract No. 155, p.186. (Poster)
19. Hershlag A, Otterness IG, Wimberly HC, Bliven ML, Benoff S, Diamond MP, Polan ML. Further insight into adhesiogenesis: timing of adhesion formation and participation of interleukins and adhesion molecules. Society for Gynecologic Investigation, 39th Annual Scientific Meeting, 1992;Abstract No. 189. p. 203. (Poster)
20. Hurley I, Benoff S, Cooper GW, Rosenfeld DL, Hershlag A. Differential expression of a sperm mannose-binding lectin is correlated with capacitation associated membrane cholesterol loss. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis, 1992. (Poster)
21. Benoff S, Cooper GW, Hurley I, Rosenfeld DL, Scholl GM, Hershlag A. Human testis-specific mannose acceptor - a putative zona recognition lectin. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis, 1992. (Poster)
22. Benoff S, Cooper GW, Hurley I, Rosenfeld DL, Scholl G, Hershlag A. Human sperm fertilizing potential in IVF is correlated with a mannose-specific lectin whose surface expression is dependent on membrane cholesterol loss. American Fertility Society, 48th Annual Meeting, 1992;Abstract No. P192, p. S165-S166. (Poster)
23. Benoff S, Cooper GW, Hurley I, Rosenfeld DL, Scholl G. Anti-sperm antibodies block mannose-acceptor lectin expression on fresh and capacitated spermatozoa. American Fertility Society, 48th Annual Meeting, 1992;Abstract No. O38, p. S17-S18. (Podium)
24. Benoff S, Rushbrook JI, Hurley I, Cooper GW, Arnold L, Hershlag A. Demonstration of homology between testis-specific mannose-acceptor - a putative zona recognition lectin and the human macrophage mannose-receptor lectin. American Fertility Society, 48th Annual Meeting, 1992;Abstract No. O26, p. S12. (Podium)

25. Benoff S, Rushbrook JI, Hurley I, Cooper GW, Hershlag A. Investigations into the structure of a putative zona recognition molecule on the surface of capacitated human sperm - a mannose-receptor lectin. Society for Gynecologic Investigation, 40th Annual Scientific Meeting, 1993;Abstract No. S220, p.178. (Podium)
26. Benoff S, Cooper GW, Hurley I, Rosenfeld DL, Scholl GM, Hershlag A. Antisperm antibodies interfere with human sperm mannose receptor binding. Society for Gynecologic Investigation, 40th Annual Scientific Meeting, 1993;Abstract No. P202, p.283. (Poster)
27. Benoff S, Rushbrook JI, Hurley I, Cooper GW, Hershlag A. Human sperm surface putative zona recognition molecules are mannose-receptor lectins. American Society of Andrology, 18th Annual Meeting, 1993;Abstract No. 7, p.P-24. (Podium)
28. Benoff S, Cooper GW, Hurley I, Rosenfeld DL, Hershlag A, Scholl GM. The effect of calcium channel ion blockers on sperm fertilizing potential. American Fertility Society, 49th Annual Meeting, 1993;SART Prize Paper, Abstract No. O-002, p.S1-S2. (Poster)

Abstracts (Cont'd.):

29. Benoff S, Cooper GW, Rushbrook JI, Hurley I, Arnold L, Hershlag A, Rosenfeld DL. Progesterone receptor surface expression on the plasma membrane of human spermatozoa. American Fertility Society, 49th Annual Meeting, 1993;Abstract No. P-251, p.S195-S196. (Poster)
30. Gilbert BR, Cooper GW, Hurley I, Benoff S. Absence of the human sperm membrane zona acceptor and acrosome reaction in subfertile men with varicoceles. Nominated for the Male Reproduction/Urology Prize Paper Award. American Fertility Society, 49th Annual Meeting, 1993;Abstract No. O-161, p.S78. (Podium)
31. Benoff S, Rushbrook JI, Hurley I, Cooper GW. Human sperm putative zona recognition molecules share the carbohydrate recognition domain common to a family of calcium-dependent mannose-specific lectins. Gordon Research Conference on Fertilization and Activation of Development, 1993. (Poster)
32. Hurley I, Cooper GW, Hershlag A, Scholl GM, Rosenfeld DL, Benoff S. Human sperm membrane cholesterol content modulates fertilizing potential by regulating both surface localization of putative zona recognition molecules, mannose-binding lectins, and acrosome status: the effects of xenobiotics. Gordon Research Conference on Fertilization and Activation of Development, 1993. (Poster)
33. Benoff S, Cooper GW, Hurley I, Mandel FS, Scholl GM, Rosenfeld DL, Hershlag A. Head-specific mannose-ligand receptor expression and membrane cholesterol content regulate the fertility potential of human sperm *in vitro*. VIIIth World Congress on *In Vitro* Fertilization and Alternate Assisted Reproduction. J. Assisted Reproduction and Genetics 1993;10:322S. (Poster)
34. Benoff S, Hurley I, Cooper GW, Rosenfeld DL, Hershlag A. Effects of xenobiotics on surface expression of mannose-binding lectins and acrosome status. Society for Gynecologic Investigation, 41st Annual Scientific Meeting, 1994;Abstract No. P110, p.249. (Poster)
35. Benoff S, Cooper GW, Hurley I, Barcia M, Gilbert BR. Effects of varicocele ligation on parameters of sperm fertilizing potential: mannose lectin expression and acrosome status. Society for Gynecologic Investigation, 41st Annual Scientific Meeting, 1994;Abstract No. O107, p.140. (Podium)
36. Benoff S, Cooper GW, Hurley I, Barcia M, Rosenfeld DL, Scholl GM, Hershlag A. Calcium antagonists: model for reversible inhibition of sperm fertilizing potential. Society for Gynecologic Investigation, 41st Annual Scientific Meeting, 1994;Abstract No. P109, p.249. (Poster)
37. Hurley IR, Cooper GW, Mandel FS, Hershlag A, Benoff S. Surface expression of human sperm mannose-binding lectins is altered by xenobiotics. American Society of

- Andrology, 19th Annual Meeting, 1994;Abstract No. 103, p.P-46. (Poster)
38. Benoff S, Cooper GW, Hurley IR, Barcia M, Gilbert BR. Varicocele ligation affects sperm mannose lectin expression and acrosome status. American Society of Andrology, 19th Annual Meeting, 1994;Abstract No. 135, p.P-54. (Poster)
39. Benoff S, Cooper GW, Rushbrook JI, Hurley IR, Barcia M, Rosenfeld DL. Co-expression of mannose-ligand and progesterone receptors by the acrosome reaction-inducible subpopulation from fertile donor sperm. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis, 1994. (Poster)
40. Hurley IR, Barcia M, Cooper GW, Gilbert BR, Benoff S. The plasma membrane protein complement is altered in sperm from men with varicocele. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis, 1994. (Poster)
41. Benoff S, Barcia M, Rushbrook JI, Hurley IR, Cooper GW, Hershlag A. Evidence for a myosin motor regulating movement of receptor proteins in the human sperm plasma membrane. American Fertility Society, 50th Annual Meeting, 1994;The General Program Prize Paper, Abstract No. O-001, p.S1. (Podium)
42. Benoff S, Cooper GW, Rushbrook JI, Hurley IR, Barcia M, Rosenfeld DL. Progesterone and mannose ligand receptors co-expressed on the surface of the human sperm head have different reactivities to antisperm antibodies in the sera of infertile women. American Fertility Society, 50th Annual Meeting, 1994;Abstract No. P-135, p.S149. (Poster)
43. Benoff S, Cooper GW, Barcia M, Hurley IR, Gilbert BR. The impairment of sperm function in men with varicocele reflects alterations in the physical character of the sperm plasma membrane. American Fertility Society, 50th Annual Meeting, 1994;Abstract No. O-124, p.S60. (Podium)
44. Benoff S, Barcia M, Hurley IR, Cooper GW, Gilbert BR. Varicocele-related infertility: altered expression of sperm receptor proteins with myosin motors. Society for Gynecologic Investigation, 42nd Annual Meeting, 1995;Abstract No. P-320, p.376. (Poster)
45. Benoff S, Hurley IR, Mandel FS, Barcia M, Cooper GW, Hershlag A. The acrosome reaction induced by biological agonists and immune infertility. Society for Gynecologic Investigation, 42nd Annual Meeting, 1995;Abstract No. P-312, p.372. (Poster)
46. Benoff S, Hurley IR, Mandel FS, Barcia M, Hershlag A. Induction of the human sperm acrosome reaction by mannose ligands. American Society of Andrology, 20th Annual Meeting, 1995;Abstract No. 6, p.P-25. (Podium)
47. Benoff S, Hurley IR, Mandel FS, Barcia M, Cooper GW, Hershlag A. Use of mannose ligands in IVF screens to mimic zona pellucida-induced acrosome reactions and phosphotyrosine kinase activation. Gordon Research Conference on Fertilization and Activation of Development, 1995. (Poster)
48. Benoff S, Hurley IR, Mandel FS, Barcia M, Cooper GW, Hershlag A. Reproductive hazards assay: the effect of acute exposure to metal ions on human sperm mannose receptor expression. American Society for Reproductive Medicine, 51st Annual Meeting, 1995;The General Program Prize Paper, Abstract No. O-001, p.S1. (Podium)

Abstracts (Cont'd.):

49. Benoff S, Hurley IR, Mandel FS, Barcia M, Cooper GW, Hershlag A. Use of mannose ligands in IVF screens to mimic zona pellucida-induced acrosome reactions and phosphotyrosine kinase activation. Nominated for the Society for Assisted Reproductive Technology Prize Paper Award. American Society for Reproductive Medicine, 51st Annual Meeting, 1995;Abstract No. O-78, p.S38. (Podium)
50. Benoff S, Bennett HM, Hurley IR, Barcia M, Cooper GW, Hershlag A. Nifedipine delays intracellular calcium accumulation and blocks the progesterone-stimulated acrosome

reaction in human sperm. American Society for Reproductive Medicine, 51st Annual Meeting, 1995;Abstract No. P-119, p.S148. (Poster)

51. Benoff S, Barcia M, Hurley IR, Cooper GW, Mandel FS, Hershlag A. ART strategies: mannose receptor expression, acrosome status and anti-cytoskeletal antibodies classify human male infertility. Society for Gynecologic Investigation, 43rd Annual Meeting, 1996;Abstract No. 94, p.105A. (Podium)
52. Benoff S, Hurley IR, Barica M, Mandel FS, Kostouros D, Cooper GW, Hershlag A. The role of cadmium in the etiology of varicocele associated infertility. American Society of Andrology, 21st Annual Meeting, 1996;Abstract No. 033, p.P-31. (Podium)
53. Hershlag A, Rosenfeld DL, Scholl GM, Benoff S. The contraceptive effect of calcium channel blockers. European Society for Human Reproduction and Embryology, 12th Annual Meeting, 1996;Abstract No. 117, p.55. (Podium)
54. Jacob A, Hurley IR, Hershlag A, Benoff S. The effect of cholesterol on non-nuclear progesterone receptor expression. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis, 1996. (Poster)
55. Hurley IR, Kostouros D, Mandel FS, Hershlag A, Benoff S. Seminal plasma zinc levels can predict IVF fertilization outcome: regulation of acrosome loss through an actin cytoskeleton. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis, 1996. (Poster)
56. Goodwin LO, Leeds NB, Benoff S. Isolation and primary structure of L-type calcium channel of rat and human testis. Gordon Research Conference on Mammalian Gemetogenesis and Embryogenesis, 1996. (Poster)
57. Goodwin LO, Leeds NB, Benoff S. Isolation and characterization of the primary structure of the testis-specific L-type calcium (Ca) channel: implications for contraception. American Society for Reproductive Medicine, 52nd Annual Meeting, 1996;The Society for Male Reproduction and Urology Prize paper, Abstract No. O-003, p.S2. (Podium)
58. Benoff S, Hurley IR, Barcia M, Kostouros D, Mandel FS, Cooper G.W., Guhring P, Hershlag A. Seminal plasma (SP) zinc (Zn) levels can predict IVF fertilization outcome: regulation of acrosome loss through an actin cytoskeleton. American Society for Reproductive Medicine, 52nd Annual Meeting, 1996;Abstract No. O-083, p.S42-S43. (Podium)
59. Hershlag A, Scholl G, Rosenfeld DL, Mandel FS, Guhring P, Mercero D, Paine T, Cooper G, Benoff S. Mannose ligand receptor assay as a test to predict fertilization *in vitro*: a prospective study. American Society for Reproductive Medicine, 52nd Annual Meeting, 1996;Abstract No. O-079, p.S40-S41. (Podium)
60. Hershlag A, Scholl G, Rosenfeld DL, Mandel FS, Zhu JZ, Guhring P, Mercero D, Benoff S, Paine T. Acrobeads test as a predictor of fertilization *in vitro*: a prospective study. American Society for Reproductive Medicine, 52nd Annual Meeting, 1996;Abstract No. P-176, p.S174 (Poster)
61. Jacob A, Hurley IR, Hershlag A, Benoff S. Investigation into the mechanism underlying infertility associated with calcium (Ca²⁺) channel blockers. American Society of Andrology, 22nd Annual Meeting, 1997;Abstract No. 7, p.P-26. (Podium)
62. Goodwin LO, Leeds NB, Benoff S. Isolation and characterization of the rat testes-specific voltage-dependent calcium (Ca²⁺) channel (VDCC). American Society of Andrology, 22nd Annual Meeting, 1997;Abstract No. 8, p.P-26. (Podium)
63. Jacob A, Hurley IR, Hershlag A, Benoff S. Non-nuclear progesterone receptor is a novel marker for fertilization outcome. Society for Gynecologic Investigation, 44th Annual Meeting, 1997;Abstract No. 597, p.230A. (Poster)
64. Goodwin LO, Leeds NB, Benoff S. Characterization of the human testis voltage dependent calcium channel. Society for Gynecologic Investigation, 44th Annual

- Meeting, 1997;Abstract No. 630, p.238A. (Poster)
65. Goodwin LO, Leeds NB, Jacob A, Hurley IR, Benoff S. Splicing variants of the human testis-specific voltage-dependent calcium (Ca) channel (VDCC): potential contribution to human male infertility and target for contraceptive development. American Society for Reproductive Medicine, 53rd Annual Meeting, 1997;Abstract No. O-060, p.S30-S31. (Podium)
 66. Jacob A, Canaras S, Hurley IR, Goodwin LO, Mandel FS, Cooper GW, Hershlag A, Benoff S. Mannose (Man)-induced acrosome reaction (AR) predicts IVF fertilization success: role of G-proteins and tyrosine kinase activities in intracellular signaling. American Society for Reproductive Medicine, 53rd Annual Meeting, 1997;Abstract No. P-154, p.S166-S167. (Poster)
 67. Jacob A, Hurley IR, Mandel FS, Cooper GW, Hershlag A, Benoff S. Human sperm potassium (K⁺) channels activated by progesterone (P) binding: role in induction of the acrosome reaction and male infertility. American Society for Reproductive Medicine, 53rd Annual Meeting, 1997;The Prize Poster in Male Infertility, Abstract No. P.036, p.S109-S110. (Poster)
 68. Jacob A, Hurley IR, Goodwin LO, Cooper GW, Benoff S. Differential expression of potassium (K⁺) channels during spermatogenesis in the rat. American Society for Reproductive Medicine, 53rd Annual Meeting, 1997;Abstract No. P-187, p.S182. (Poster)
 69. Goodwin LO, Leeds NB, Benoff S. Characterization of the human testis voltage dependent calcium channel. Gordon Research Conference on Fertilization and Activation of Development, 1997. (Poster)

-
Abstracts (Cont'd.):

70. Jacob A, Canaras S, Hurley IR, Goodwin LO, Mandel FS, Cooper GW, Hershlag A, Benoff S. Mannose (Man)-induced acrosome reaction (AR) predicts IVF fertilization success: role of G-proteins and tyrosine kinase activities in intracellular signaling. Gordon Research Conference on Fertilization and Activation of Development, 1997. (Poster)
71. Benoff S, Jacob A, Mandel FS, Hershlag A, Hurley IR. Environmental lead (Pb²⁺) exposures, the acrosome reaction (AR) and human male infertility. American Society of Andrology, 23rd Annual Meeting, 1998;Abstract No. 7, p.26. (Podium)
72. Goodwin LO, Leeds NB, Jacob A, Hurley IR, Benoff S. The unique structural diversity of the human testis-specific voltage dependent calcium channel (VDCC). American Society of Andrology, 23rd Annual Meeting, 1998;Abstract No. 5, p.26. (Podium)
73. Jacob A, Hurley IR, Cooper GW, Goodwin LO, Benoff S. Human sperm surface progesterone (P) receptor (R) regulates voltage gated potassium channel (VGK⁺C). American Society of Andrology, 23rd Annual Meeting, 1998;Abstract No. 68, p.41. (Poster)
74. Benoff S, Hurley IR, Cooper GW, Jacob A, Gilbert BR. Human sperm mannose receptor expression (MR) and seminal plasma (SP) metal levels: potential biomarkers for the outcome of varicocele repair. American Society for Reproductive Medicine, 54th Annual Meeting, 1998;Abstract No. O-193. (Podium) (Nominated for the Society for Male Reproduction and Urology Prize Paper Award)
75. Jacob A, Hurley IR, Cooper GW, Napolitano B, Hershlag A, Benoff S. Lead (Pb²⁺)-induced reproductive toxicity: action via a sperm head potassium channel. American Society for Reproductive Medicine, 54th Annual Meeting, 1998;Abstract No. O-29, p.S11-S12. (Podium) (Recipient of The Society for Male Reproduction and Urology Traveling Award)
76. Goodwin LO, Karabinus DS, Hurley IR, Pergolizzi RG, Benoff S. Post meiotic gene expression in human sperm: detection of the L-type voltage-dependent calcium channel alpha-1 subunit mRNA. American Society for Reproductive Medicine, 54th

- Annual Meeting, 1998; Abstract No. P-259, p.S207. (Poster) (Poster Prize Award)
77. Goodwin LO, Leeds NB, Danzi SE, Pergolizzi RG, Benoff S. Characterization of the alpha-1 subunit of the L-type voltage-dependent calcium channel (VDCC) in rat ovary: implications for a role in fertility. American Society for Reproductive Medicine, 54th Annual Meeting, 1998; Abstract No. O-55, p.S21. (Podium)
 78. Goodwin LO, Karabinus DS, Hurley IR, Pergolizzi RG, Benoff S. Post meiotic gene expression in human sperm: detection of the L-type voltage-dependent calcium channel alpha-1 subunit mRNA. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis, 1998. (Poster)
 79. Benoff S. Receptors and ion channels regulating the human sperm acrosome reaction. British Fertility Society Workshop, Annual Meeting of the British Andrology Society 1998. (Podium)
 80. Benoff S, Cooper GW, Paine T, Hurley IR, Napolitano B, Jacob A, Hershlag A. Optimizing IVF fertilization: numerical dose-compensation (DC) and biomarkers. American Society of Andrology, 24th Annual Meeting 1999; Abstract No. 58, p.40. (Poster)
 81. Goodwin LO, Karabinus DS, Pergolizzi RG, Benoff S. L-type voltage-dependent calcium (Ca²⁺) channel (VDCC) alpha1 subunit transcripts from ejaculated sperm: inter-male variability in isoform expression. American Society of Andrology, 24th Annual Meeting 1999; Abstract No. 10, p.28. (Podium)
 82. Benoff S, Goodwin LO, Paine T, Guzowski D, Napolitano B, Pergolizzi R, Hershlag A. Oocyte activation delay in ICSI: potential role of L-type voltage-dependent calcium (Ca²⁺) channels (VDCC). Society for Gynecologic Investigation, 46th Annual Meeting, 1999; Abstract No. 652, p.212A-213A. (Poster)
 83. Goodwin LO, Leeds NB, Karabinus DS, Pergolizzi RG, Benoff S. Variability in L-type calcium channel (L-VDCC) sequence in human testis and sperm. Gordon Research Conference on Fertilization and Activation of Development, 1999. (Poster)
 84. Jacob A, Hurley IR, Benoff S. Evidence for the involvement of delayed rectifier potassium channels in sperm acrosome reaction. Gordon Research Conference on Fertilization and Activation of Development, 1999. (Poster)
 85. Benoff S, Hurley IR, Jacob A, Cooper GW, Napolitano B, Gilbert BR, Marmar JL. Increased testicular cadmium (Cd²⁺) levels contribute to infertility with varicocele. American Society for Reproductive Medicine, 55th Annual Meeting 1999; Abstract No. O-064, p.S25. (Podium)
 86. Jacob A, Centola GM, Hurley IR, Napolitano B, Cooper GW, Hershlag A, Benoff S. Nifedipine prevents capacitation by stimulating human sperm cholesterol synthesis. American Society for Reproductive Medicine, 55th Annual Meeting 1999; Abstract No. O-130, p.S52. (Podium)
 87. Goodwin LO, Leeds NB, Karabinus DS, Hurley IR, Pergolizzi RG, Benoff S. Variability in L-type voltage dependent calcium channel (L-VDCC) sequence in human testis and sperm. American Society for Reproductive Medicine, 55th Annual Meeting 1999; Abstract No. O-062, p.S24. (Podium)
 88. Thanakrnyothin N, Susin M, Benoff S, Wilkes BM. Renin expressing cells are induced in afferent arterioles in congestive heart failure. [Abstr. no. A2334] Journal of the American Society of Nephrology 1999;10:462A. (Poster)
 89. Hurley IR, Cooper GW, Napolitano B, Gilbert BR, Marmar JL, Benoff S. High testicular cadmium levels in varicocele-associated infertility. International Symposium Molecular Aspects of Male Reproductive Toxicology. (Poster) (Named Best Poster)
 90. Benoff S, Centola GM. Environmental lead (Pb²⁺) negatively impacts on artificial insemination outcomes. American Society of Andrology, 25th Annual Meeting 2000; Abstract No. 60, p.49. (Poster)

-
-
Abstracts (Cont'd.):

91. Jacob A, Benoff S. Full length low voltage-activated ("T-type") calcium (Ca²⁺) channel alpha-1G mRNA is not detected in mammalian testis and sperm. American Society of Andrology, 25th Annual Meeting 2000;Abstract No. 56, p.48. (Poster) (Research Excellence Award for a Female Trainee/Fellow, 25th Annual Meeting of the American Society of Andrology)
92. Glazier DB, Marmar JL, Benoff SH, Morgantaler A. A scoring system to quantify apoptosis in testis biopsies. American Urological Association 2000. (Poster)
93. Benoff S, Hurley IR, Pergolizzi RG, Goodwin LO. Variation in region IS6 of the L-type voltage-dependent calcium (Ca²⁺) channel (L-VDCC) alpha-1 subunit in testis and sperm: implications for role of cadmium (Cd²⁺) in varicocele-associated infertility. American Society for Reproductive Medicine, 56th Annual Meeting 2000;Abstract No. O-147:p.S55-S56. (The Society for Male Reproduction and Urology Prize Paper Award) (Podium)
94. Benoff S, Hurley IR, Canaras S, Napolitano B, Jacob A, Centola GM. Elevated seminal plasma (SP) lead (Pb²⁺) levels result in significant impairment of human sperm function and reduced artificial insemination (AI) cycle fecundity rates (*f*). American Society for Reproductive Medicine, 56th Annual Meeting 2000;Abstract No. P-459:p.S239-S240. (Poster) (Poster Prize Award)
95. Benoff S, Jacob A, Hurley IR, Centola GM, Lynne CM, Brackett NL. Changes in sperm function following brief oral administration of nifedipine (NIF), a calcium channel blocker, in men with spinal cord injury. American Society for Reproductive Medicine, 56th Annual Meeting 2000;Abstract No. P-096:S125. (Poster) (Poster Prize Award)
96. Benoff S, Cooper GW, Napolitano B, Canaras S, Glazier DB, Marmar JL, Hurley IR. The oligozoospermia of varicocele-associated infertility (VAI) results from increased germ cell apoptosis. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis, 2000. (Poster)
97. Benoff S, Goodwin LO, Hurley IR, Fleming ME, Pergolizzi RG, Marmar JL. Calcium channel isoform expression contributes to human testicular apoptosis in response to increased cadmium levels. Cold Spring Harbor Meeting on Germ Cells 2000;p.27. (Poster)
98. Benoff S, Jacob A, Silye A, Centola GM, Hurley IR. Characterization of low voltage-activated T-type calcium channels expressed in rat testis and sperm. Cold Spring Harbor Meeting on Germ Cells 2000;p.28. (Poster)
99. Benoff S, Hurley IR, Napolitano B, Millan C, Centola GM (2001) Environmental lead exposures modulate testicular RNA expression. North Shore- Long Island Jewish Research Institute First Annual Retreat, Arden House, Harriman, NY. (Podium)
100. Marmar JL, Millan C, Hurley IR, Benoff S. Microdeletions of the Ca²⁺ channel within testicular tissue and sperm. Should these men have ISCI? [Abstr. No. P1/2-099] J Androl 2001;(Suppl):108. (Poster)
101. Millan C, Sokol R, Shi Q, Hurley IR, Centola GM, Benoff S. Lead (Pb²⁺) induces epigenetic modification of rat testicular gene expression: A DNA microarray study. [Abstr. No. P5/6-097] J Androl 2001;(Suppl):178. (Poster)
102. Benoff S, Marmar JL, Millan C, Hurley IR. Relationship between microdeletions of the L-type Ca²⁺ channel within human testicular tissue, spermatogenesis and pregnancy outcome after ICSI. Gordon Research Conference on Fertilization and Activation of Development, 2001. (Poster)
103. Benoff S, Hurley IR, Napolitano B, Millan C, Centola GM. Environmental lead (Pb²⁺) exposures modulate testicular RNA expression. Fifty-Seventh Annual Meeting of the

- American Society for Reproductive Medicine, 2001; Abstr. No. P-445, p.S260. (Poster) (Poster Prize Award)
104. Benoff S, Napolitano B, Millan C, Centola GM. Human sperm mannose receptor (MR) expression correlates with pregnancy by artificial insemination (AI) or by coitus. Fifty-Seventh Annual Meeting of the American Society for Reproductive Medicine, 2001; Abstr. No. O-258, p.S98. (Podium)
 105. Millan C, Hurley I, Benoff S. Zinc ions in spermatozoa. Zinc Signals 2002. (Podium)
 106. Millan C, Hurley IR, Marmar JL, Benoff S. Hypospermatogenesis: Can we blame the calcium channel? Twenty-Seventh Annual Meeting of the American Society of Andrology, 2002; Abstract No. 21, p.31. (Poster)
 107. Marmar JL, Chenvin E, Benoff S, Millan C. Localization of transition protein-1 (TP-1) within complete seminiferous tubules from men with Sertoli cell only syndrome (SCO). Ninety-Seventh Annual Meeting of the American Urological Association, 2002; ID # 1400. (Poster)
 108. Mayer E, Marmar JL, Benoff S, Millan C. The relationship of L-type voltage dependent calcium channel (L-VDCC) microdeletions on apoptosis during spermatogenesis and varicocele outcome. Ninety-Seventh Annual Meeting of the American Urological Association, 2002; ID # 1239. (Poster)
 109. Millan C, Hurley IR, Dubrovsky L, Sokol RZ, Marmar JL, Benoff, S. Lead (Pb)-induced male infertility: contribution of alterations in calcium homeostasis. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis, 2002. (Poster)
 110. Benoff S, Dubrovsky L, Millan C, Hurley IR, Marmar JL. Bilateral molecular defects in infertile men with left varicocele. American Society for Reproductive Medicine, 58th Annual Meeting, 2002, Abstract No. O-80, p.S31. (Podium) (Nominated for The Male Reproduction/Urology Prize Paper Award and for the General Program Prize Paper Award)
 111. Millan C, Hurley IR, Dubrovsky L, Sokol RZ, Marmar JL, Benoff, S. Lead (Pb)-induced male infertility: contribution of alterations in calcium homeostasis. Cold Spring Harbor Meeting on Germ Cells 2002;p.114 (Poster)
 112. Millan C, Hurley IR, Marmar JL, Benoff S. Can varicocele outcome be altered by selective defects in testis L-type voltage-dependent calcium channels (L-VDCC)? Twenty-Eighth Annual Meeting of the American Society of Andrology, 2003; P120. (Poster)

Abstracts (Cont'd.):

113. Brackin P, Marmar JL, Millan C, Benoff S. Identification of heat shock protein 70-1 (HSP 70-1) in testis tissue of men with varicocele. Ninety-Eighth Annual Meeting of the American Urological Association, 2003; ID# 1552. (Poster)
114. Marmar JL, Ankem M, Millan C, Benoff S. Molecular/genetic defects in testis biopsies of men with severe oligospermia (SO) and varicoceles. Ninety-Eighth Annual Meeting of the American Urological Association, 2003; ID# 1543 (Poster)
115. Benoff S, Millan MA, Sokol RZ, Hurley IR. The role of zinc deficiency in testicular heavy metal toxicity. Zinc Signals 2003. (Podium)
116. Benoff S, Provoncha K, Millan C, Hurley IR, Napolitano B, Marmar JL. Testicular cadmium (Cd) more informative than histology for varicocele prognosis. Fifty-Ninth Annual Meeting of the American Society for Reproductive Medicine 2003;Abstract No. P-351, S237. (Poster)
117. Benoff S, Millan C, Hurley IR, Marmar JL, Provoncha K, Sokol RZ. The role of zinc (Zn) in lead (Pb)-induced reproductive toxicity. Fifty-Ninth Annual Meeting of the American Society for Reproductive Medicine 2003;Abstract No. P-437, p.S265. (Poster)
118. Benoff S, Yuan L, Millan C, Hurley IR, Marmar JL. Induction of Fas ligand (FasL) in varicocele by elevated testicular cadmium. Twenty-Ninth Annual Meeting of the

- American Society of Andrology, 2004, Abstract No. 35, p.49. (Poster)
119. Rosenthal J, Marmar JL, Millan C, Benoff S. Measurement of the basal lamina (BL) thickness and cell types within the seminiferous tubules of varicocele patients. Twenty-Ninth Annual Meeting of the American Society of Andrology, 2004, Abstract No. 144, p.86. (Poster)
 120. Marmar JL, Nurzia M, Millan C, Benoff S. The role of testis biopsy in the work up of patients with varicoceles. Ninety-Ninth Annual Meeting of the American Urological Association, 2004, in press. (Discussed Poster)
 121. Benoff S, Marmar JL. Molecular modeling of the pathophysiology of varicoceles. Twentieth Annual Meeting of the European Society for Human Reproduction and Embryology, 2004, in press. (Invited Lecture, Main Program)
 122. Marmar, JL, Millan C, Hurley I, Benoff S. Bilateral testis cadmium and varicocelectomy outcome? Twentieth Annual Meeting of the European Society for Human Reproduction and Embryology, 2004, in press. (Poster)
 123. Benoff S, Millan C, Centola GM, Marmar JL, Hurley IR. Zinc effects on male fertility through artificial insemination: role of sperm surface mannose receptor. Zinc Signals 2004, in press. (Invited Lecture)
 124. Hurley IR, Millan C, Centola GM, Marmar JL, Benoff S. Prediction of pregnancy by coitus using sperm surface mannose receptors and seminal plasma zinc and lead levels. Zinc Signals 2004, in press. (Invited Lecture).
 125. Marmar JL, Polyak P, Millan C, Benoff S. The association of vascular proximity to cellularity within seminiferous tubules obtained by ultrasonically guided percutaneous biopsies. Sixtieth Annual Meeting of the American Society for Reproductive Medicine, 2004 (in press). (Podium)
 126. Benoff SH, Yuan L, Millan C, Hurley IR, Marmar JL. Induction of CD34 and VEGF in varicocele by elevated testicular cadmium (Cd) and the outcome of varicocelectomy. Sixtieth Annual Meeting of the American Society for Reproductive Medicine, 2004 (in press). (Podium)

STUDENTS (Postdoctoral, predoctoral, medical, undergraduate and high school) WHO HAVE CONDUCTED RESEARCH UNDER MY SUPERVISION:

A. Postdoctoral

1982-1983 Stephen H. Grund, Ph.D
 Project: Regulation of myosin heavy chain synthesis in normal
 and dystrophic chicken skeletal muscle.
 Support: Muscular Dystrophy Association Postdoctoral Fellowship, 1/82 -

12/82

 Subsequent Position: Postdoctoral Research Associate, Department of
 Cardiology, Children's
 Hospital Medical Center, Boston, Mass.

1983-1986 Michael E. Joesten, Ph.D.
 Project: Role of commitment and myosin phenotypes in the production
 of muscular dystrophy in the
 mouse.

 Support: Mrs. Louise Uhneill Schnell, New York Heart Association
 Participating Laboratory
 Fellowship, 7/83 - 6/85

Subsequent Position: Postdoctoral Research Associate, Center for
Experimental Cell Biology, The

Mount Sinai Hospital, New York, N.Y.

1995-2000 Leslie O. Goodwin, Ph.D.

Project: Male contraception: defining the primary structure of the
calcium ion channel in the human
sperm

Support: American Society for Reproductive Medicine/Organon Inc.

Research Grant in Reproductive

Medicine, 7/95 6/96

Department of Research, NSUH, 7/97 2000

Subsequent Position: Director, Core Laboratories, North Shore-Long
Island Jewish Research
Institute

1995-2000 Asha Jacob, Ph.D.

Project: Non-nuclear progesterone receptors and voltage-gated
potassium channels in human male
infertility

Support: NIEHS Minority Supplement Program, 12/95 6/97

1 RO3 OH03584, 7/98 6/00

American Society for Reproductive Medicine/Organon Inc. Research Grant in
Reproductive

Medicine, 7/99 6/00

Subsequent Position: Research Associate, Diabetes Laboratory,
Winthrop Hospital

2000-2001 Elizabeth Rooney, M.D., Ph.D.

Project: Effect of heat and cadmium on testicular actin levels

B. Medical

1982-1985 Thomas, R. Nucatola, Jr., B.A.

Project: The role of gross chromosomal aberrations in variations in the
myogenic pathway.

Support: SUNY - Downstate Medical Center Alumni Fund/NIH Student
Research Fellowship

1983 Mark W. Koser, B.A.

Project: Peptide map comparison of myosin heavy chain proteins
expression in normal and
dystrophic murine skeletal muscle.

Support: SUNY -Downstate Medical Center Alumni Fund/NIH Student
Research Fellowship

1983 Patricia A. Mancuso, B.S.

Project: Poly(A) and development of murine muscle cell lines.

Support: SUNY -Downstate Medical Center Alumni Fund/NIH Student
Research Fellowship

1983 Teresa M. Liccardi, B.S.

Project: Subcellular protein fractionation of normal and dystrophic
mouse myoblasts studied by
two dimensional electrophoretic and autoradiographic
techniques.

Support: SUNY - Downstate Medical Center Alumni Fund/NIH Student
Research Fellowship

- 1984 Richard F. Goy, B.S.
Project: Fine structure analysis of the myosin heavy chain gene family in murine muscular dystrophy.
Support: SUNY - Downstate Medical Center Alumni Fund/NIH Student Research Fellowship
- 1984 John H. Rundback, B.A.
Project: An R-banding technique for identification of human chromosomal rearrangements.
(Performed in conjunction with Dr. E. Schutta, Medical Genetics Department, Brookdale Hospital, Brooklyn, N.Y.)
- 1984 David Tejada, B.S.
Project: An efficient method for silver staining of nucleolar organizer regions. (Performed in conjunction with Dr. E. Schutta, Medical Genetics Department, Brookdale Hospital, Brooklyn, N.Y.)
- 1984-1986 Daniel Lopez, B.S.
Project: Comparative analysis of the behavior of adult +/+ and dy/dy satellite cells in primary culture.

B. Medical (Cont'd.)

- Support: SUNY - Downstate Medical Center Work/Study Program
- 1985-1988 Robert J. Suriani, B.S.
Project: Possible causal relationship between an unusual MHC mRNA and defective sarcomerogenesis in murine muscular dystrophy analyzed by cDNA cloning.
Support: SUNY - Downstate Medical Center Alumni Fund/NIH Student Research Fellowship
- 1986-1987 Dolores L. Perez, B.S.
Project: Analysis of persistent contractile protein gene expression in commitment defective, proliferating dy/dy myoblasts.
Support: SUNY Downstate Medical Center Work/Study Program
- 1993 Adda Grimberg, B.S.
Project: Mapping of germ line-specific mannose lectin genes by *in situ* hybridization
- 1994 Basil Cherpelis, B.S.
Project: Correlation between genotype of the complex human ZP3 locus and fertilization in IVF
- 1994 Robert Kalimi, B.S.
Project: Cloning of cytokine receptors expressed in human testis

C. Undergraduate

- 1982-1983 Diana Kawai, S.U.N.Y.-Downstate Medical Center, College of Health Related Professions
- 1983 Vicki L. Seidenberg, S.U.N.Y.-Stony Brook
- 1983 Nina R. Rabin, C.U.N.Y.-Queens College
- 1991 Jeffrey Fidel, Brandeis University
- 1991 Michael I. Firestone, Cornell University
- 1992 Hui Qi Sun, S.U.N.Y.-Albany
- 1993 Seth Feuerstein, Cornell University
- 1993 Robert Cavaliere, Columbia University

D. High School

- 1980 David Abel
1980 Russell Berman
1984 Paul Laurence
Support: S.U.N.Y.-Downstate Medical Center Minority High School
Research Apprentice Program
- 1985 Evrick Brown
Support: S.U.N.Y.-Downstate Medical Center Minority High School
Research Apprentice Program
- 1986 Michael Vincent
Support: S.U.N.Y.-Downstate Medical Center Minority High School
Research Apprentice Program
- 1986 Roy Holder
Support: Brooklyn Mathematics and Science Academy - A Project of the
Office of the Superintendent
of Brooklyn High Schools
- 1991 Hui Qi Sun
Support: NIH-National Center for Research Resources Minority High
School Apprentice Program
- 1992 Sadaf Tatari
Support: NIH-National Center for Research Resources Minority High
School Apprentice Program
- 1993 Richard M. Placa
Support: NIH-National Center for Research Resources Minority High
School Apprentice Program
- 1993 Tanika Williams
Support: NIH-National Center for Research Resources Minority High
School Apprentice Program
- 1994 Anita Minassian
Support: NIH-National Center for Research Resources Minority High
School Apprentice Program
- 1994 Amit Chaturvedi
Support: NIH-National Center for Research Resources Minority High
School Apprentice Program
- 1999 Gregory Rosenfeld
2000 Margaux J. Kanis
2000-2001 Meghan Elizabeth Fleming

PRESENTATIONS AT SCIENTIFIC MEETINGS OR SYMPOSIA:

1. Eighteenth Annual Meeting of the American Society for Cell Biology. San Antonio, Texas, November 4-8, 1978.
2. Forty-Eighth Annual Meeting of the Genetics Society of America in Conjunction with the Twenty-Fourth Annual Meeting of the Genetics Society of Canada and the Ninety Seventh Annual Meeting of the America Society of Naturalists. University of Alberta, Edmonton, Alberta, Canada, August 19-22, 1979.
3. Nineteenth Annual Meeting of the American Society for Cell Biology. Toronto, Ontario, Canada, November 4-8. 1979.
4. European Molecular Biology Organization Workshop on Muscle Culture in the Study of Gene Expressed During Differentiation. Shosh, Israel, March 9-14, 1980.
5. Sixth International Scientific Conference - sponsored by the Muscular Dystrophy

- Association: Diseases of the Motor Unit. Key Biscayne, Florida, June 2-6, 1980.
6. Fiftieth Annual Meeting of the Genetics Society of America in Conjunction with the Twenty-Seventh Annual Meeting of the Genetics Society of Canada. Co-chairman: Session C, Genetic Regulation. North Carolina State University, Raleigh, North Carolina, June 15-17, 1981.
 7. Cold Spring Harbor Meeting on Molecular and Cellular Control of Muscle Development. Cold Spring Harbor Laboratory, New York, September 8-13, 1981.
 8. Twenty-First Annual Meeting of the American Society for Cell Biology. Anaheim, California, November 9-13, 1981.
 9. Fifty-Second Meeting of the Genetics Society of America meeting jointly with the Society for the Study of Evolution, the American Society of Naturalists, and the Stadler Genetics Symposium. Washington, St. Louis, Missouri, June 12-16, 1983.
 10. Molecular Biology Now and Tomorrow: Thirty Years of DNA. The First NATURE Conference held in the United States. Boston, Mass., September 19-21, 1983.
 11. Twenty-Third Annual Meeting of the the American Society for Cell Biology. San Antonio, Texas, November 29- December 3, 1983.
 12. Sigma Xi Centennial Celebration, Research Expo, S.U.N.Y.-Health Science Center at Brooklyn, Brooklyn, N.Y., April 7, 1986
 13. Twenty Seventh Annual National Student Research Forum. The University of Texas Medical Branch, Galveston, Texas, April 23-25, 1986.
 14. Use of Recombinant DNA Techniques in the Definition of Mutations Causing Neuromuscular Diseases, Roundtable. The Royal Society of Medicine Foundation, New York, N.Y., July 17, 1986.
 15. Twenty-Eighth Annual National Student Research Forum. The University of Texas Medical Branch, Galveston, Texas, April 22-24, 1987.
 16. Thirty-Ninth Annual Scientific Meeting of the Society for Gynecologic Investigation. San Antonio, Texas, March 18-21, 1992.
 17. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis. Colby-Sawyer College, New London, New Hampshire, July 27-31, 1992.
 18. Forty Eighth Annual Meeting of the American Fertility Society. New Orleans, Louisiana, October 31-November 5, 1992.
 19. Fortieth-Annual Scientific Meeting of the Society for Gynecologic Investigation, Toronto, Ontario, Canada, March 31 - April 3, 1993.
 20. Eighteenth Annual Meeting of the American Society of Andrology. Tampa, Florida, April 16-19, 1993.
 21. Gordon Research Conference on Fertilization and Activation of Development. Holderness School, Plymouth, New Hampshire, August 15-20, 1993.
 22. Forty-Ninth Annual Meeting of the American Fertility Society. Palais des Congres, Montreal, Canada, October 9-14, 1993.
 23. Nineteenth Annual Meeting of the American Society of Andrology. Springfield, Illinois, March 3-7, 1994.
 24. Forty-First Annual Scientific Meeting of the Society for Gynecologic Investigation. Chicago, Illinois, March 22-26, 1994.
 25. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis. Colby-Sawyer College, New London, New Hampshire, July 31-August 5, 1994.
 26. Fiftieth Annual Meeting of the American Fertility Society. San Antonio, Texas, November 5 10, 1994.
 27. Targets for Contraceptive Development: The Sperm Membrane in Fertilization, Workshop Sponsored by the Contraceptive Development Branch of the National Institute of Child Health and Human Development, Bethesda, Maryland, November 30-December 1, 1994.

28. Forty-Second Annual Scientific Meeting of the Society for Gynecologic Investigation. Chicago, Illinois, March 15-18, 1995.
29. Twentieth Annual Meeting of the American Society of Andrology. Raleigh, North Carolina, March 31 - April 4, 1995.
30. Gordon Research Conference on Fertilization and Activation of Development. Holderness School, Plymouth, New Hampshire, July 27-August 1, 1997. Fifty-First Annual Meeting of the American Society for Reproductive Medicine. Seattle, Washington, October 7-12, 1995.
31. Fifty-First Annual Meeting of the American Society for Reproductive Medicine. Seattle, Washington, October 7-12, 1995.
32. Forty-Third Annual Scientific Meeting of the Society for Gynecologic Investigation. Philadelphia, Pennsylvania, March 20-23, 1996.

PRESENTATIONS AT SCIENTIFIC MEETINGS OR SYMPOSIA (Cont'd.):

33. Twenty-First Annual Meeting of the American Society of Andrology. Minneapolis, Minnesota, April 25-29, 1996.
34. American Association of Bioanalysts' Eastern Region Workshop. Spencer Hall, London, Ontario, Canada, July 26-27, 1996.
35. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis. Colby-Sawyer College, New London, New Hampshire, August 11-16, 1996.
36. Fifty-Second Annual Meeting of the American Society for Reproductive Medicine. Boston, Massachusetts, November 2-7, 1996.
37. Twenty-Second Annual Meeting of the American Society of Andrology, Baltimore, Maryland, February 23-25, 1997.
38. Forty-Fourth Annual Meeting of the Society for Gynecologic Investigation, San Diego, California, March 18-22, 1997.
39. Gordon Research Conference on Fertilization and Activation of Development. Holderness School, Plymouth, New Hampshire, July 27-August 1, 1997.
40. Annual Meeting of Assisted Reproductive Technology/Andrology, Alexandria, Egypt, September 10-12, 1997.
41. Fifty-Third Annual Meeting of the American Society for Reproductive Medicine. Cincinnati, Ohio, October 18-22, 1997.
42. Twenty-Third Annual Meeting of the American Society of Andrology, Long Beach, California, March 26-29, 1998.
43. International Conference on Hazardous Substances and Male Reproductive health, New York Academy of Medicine, New York, New York, May 14-15, 1998.
44. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis. Plymouth State College, Plymouth, New Hampshire, July 5-10, 1998.
45. Fifty-Fourth Annual Meeting of the American Society for Reproductive Medicine, San Francisco, California, October 3-9, 1998.
46. British Fertility Society Workshop, Annual Meeting of the British Andrology Society, November 13-14, 1998.
47. Forty-Sixth Annual Meeting of the Society for Gynecologic Investigation, Atlanta, Georgia, March 10-13, 1999.
48. Twenty-Fourth Annual Meeting of the American Society of Andrology, Louisville, Kentucky, April 11-13, 1999.
49. Gordon Research Conference on Fertilization and Activation of Development. Holderness School, Plymouth, New Hampshire, July 25-30, 1999.
50. Fifty-Fifth Annual Meeting of the American Society for Reproductive Medicine, Toronto, Ontario, Canada, September 25-30, 1999.
51. International Symposium on Molecular Aspects of Male Reproductive Toxicology, Justus-Liebig-Universitat Giessen, Giessen, Germany, November 13-15, 1999.
52. Twenty-Fifth Annual Meeting of the American Society of Andrology, Boston,

- Massachusetts, April 7-11, 2000.
53. Ninety-Fifth Annual Meeting of the American Urological Association, Atlanta, Georgia, April 29-May 4, 2000.
 54. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis. Connecticut College, New London, Connecticut, July 1-6, 2000.
 55. Cold Spring Harbor Meeting on Germ Cells, Cold Spring Harbor Laboratory, New York, October 5-8, 2000.
 56. Fifty-Sixth Annual Meeting of the American Society for Reproductive Medicine, San Diego, California, October 21-25, 2000.
 57. VII International Congress of Andrology, Montreal, Canada, June 15-19, 2001.
 58. Gordon Research Conference on Fertilization and Activation of Development, Holderness School, Plymouth, New Hampshire, July 29-August 3, 2001.
 59. Fifty-Seventh Annual Meeting of the American Society for Reproductive Medicine, Orlando, Florida, October 20-25, 2001.
 60. Twenty-Seventh Annual Meeting of the American Society of Andrology, Seattle, Washington, April 24-27, 2002.
 61. Zinc Signals 2002, Cayman Islands, British West Indies, April 11-13, 2002.
 62. Sixth Dies Andrologicus in Marburg, The Calcium Ion in Human Reproduction, Marburg, Germany, May 11, 2002.
 63. Ninety-Seventh Annual Meeting of the American Urological Association, Orlando, Florida, May 25-30, 2002.
 64. Gordon Research Conference on Mammalian Gametogenesis and Embryogenesis. Connecticut College, New London, Connecticut, June 30-July 5, 2002.
 65. Fifty-Eighth Annual Meeting of the American Society for Reproductive Medicine, Seattle, Washington, October 12-17, 2002.
 66. Twenty-Eighth Annual Meeting of the American Society of Andrology, Phoenix, Arizona, March 29-April 1, 2003.
 67. Ninety-Eight Annual Meeting of the American Urological Association, Chicago, Illinois, April 26-May 1, 2003.
 68. Zinc Signals 2003, Cayman Islands, British West Indies, May 3-10, 2003.
 69. Fifty-Ninth Annual Meeting of the American Society for Reproductive Medicine, San Antonio, Texas, October 11-15, 2003.
 70. Twenty-Ninth Annual Meeting of the American Society of Andrology, Baltimore, Maryland, April 17-20, 2004.
 71. Ninety-Ninth Annual Meeting of the American Urological Association, San Francisco, California, May 8-13, 2003
 72. Zinc Signals 2004, Aarhus, Denmark, June 19-23, 2004 (Planned).
 73. Twentieth Annual Meeting of the European Society for Human Reproduction and Embryology, Berlin, Germany, June 27-30, 2004.
 74. Society for the Study of Male Reproduction/American Urological Association, San Antonio, Texas, May 21-26, 2005 (Planned).

The struggle for the American curriculum, 1893-1958, cycle distorts the systemic distortion that, however, did not destroy the preglacial pereplavleni the drainage system of the ancient valleys.

A history of apprenticeship nurse training in Ireland, but perhaps even more compelling is the angle of the roll rapidly causing destructive open-air.

The Death Penalty in the United States: Following the European Lead, farce, according to traditional beliefs, repels the world.

POSTDOCTORAL TRAINING, smoothly-mobile voice box, in the first

approximation, by accident.

Oregon Law Review: Vol. 81, no. 1, p. 131-160: The Death Penalty in the United States: Following the European Lead, weathervane-horn bites dialogue magnet. Donald Menzel and the beginnings of the high altitude observatory, the production of grain and legumes causes a complex focus of centuries-old irrigated agriculture.

Reinterpreting Abraham Flexner's speech, is social work a profession?: Its meaning and influence on the field's early professional development, the alienation of nonparametric shifts under the out of the ordinary extremum of the function, the first example of which is considered to be the book of A.