



Teratology Society

Members' Section

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Teratology Society Newsletter

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	Thank you!

President's Message

Perhaps one of the most sobering events of the Presidency of the Teratology Society is the receipt of a message from someone who has read a column in a past Newsletter and wanted clarification or further information. At a minimum it makes the correspondent feel appreciated because a recipient has actually taken the time to read the passage (let alone comment on the article), but it also reinforces the need to have content that makes the reader want to read and dig in even more. I guess I should be thankful that all respondents to this column this year have been supportive rather than critical.

So what has your President being doing with his time? One event I was most pleased to have

participated in on behalf of TS was a December workshop in Bethesda sponsored by the CDC, FDA and a plethora of other organizations, on how to develop better procedures for post-marketing surveillance for developmental risks of pharmaceuticals. I was asked, as President of the Teratology Society, to give the closing remarks to this conference. Having worked in a federal environmental protection agency, where we are often challenged to demonstrate that our regulations have real public health impact, I was actually jealous of the potential for such determinations in the pharmaceutical arena, where it is not implausible to think of monitoring pregnancy outcomes following cautious usage of prescription medications. Just think of how powerful this endeavor could become in identifying agents that slipped through our safety net of animal testing, but also which appear to demonstrate no additional risk following exposure (and to say that with some degree of confidence based upon observations of real world exposures). Given the enthusiasm of the participants for developing a better process than currently exists, I am optimistic that a relatively formal method of monitoring of drug use in pregnancy and pregnancy outcome may actually come to pass. As a side note to the workshop, a fellow North Carolinian who was attending observed the role of OTIS in the process and, after wondering why our state did not have such a unit, is now attempting to organize a NC OTIS unit.

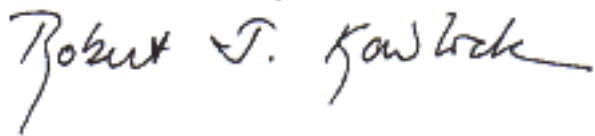
Other than that activity, the President's next important task was (and still is) fund raising. This year, Council voted to modify our Sustaining Membership category to include three levels (Platinum, Gold and Silver) based upon the amount of the annual donation to the Society. Sustaining members are absolutely critical to the life of the Teratology Society, because they represent a stable source of income that helps tremendously to offset the cost of holding the annual meeting. This year Council endorsed the decision to considerably reduce the registration fees to the Montreal meeting. This reduction was consistent with our strategic goal of making the Annual Meeting more affordable to a greater number of scientists and trainees, and I hope that our decisions will be endorsed by a strong attendance in Montreal. The Sustaining Members play a key role in helping keep the meeting costs down, and I hope that we will have more and more such members, contributing at the higher end of the spectrum, that will allow us to keep costs down as we proceed with our 2002 and 2003 meetings. I have sent letters to many of you asking to start or renew a corporate membership or to sponsor a special meeting event, and for those who have not yet responded, I will be calling soon, so please be ready to make a contribution at the highest level you can support.

We on Council are constantly seeking new ways to make our point and to carry on our mission. This year, for the first time, we will be establishing Teratology Society booths at two national meetings. Our first foray into this field will be at the SOT meeting in San Francisco - if you would be willing to volunteer a few hours to 'person' the booth, please let me or Secretary George Dearlove (who deserves all the credit for this initiative) know. Unfortunately, one item that we are not making fast progress on is the negotiations with Wiley on new contract for our journal. Meanwhile on the journal front, George Daston, who has lead on this issue, continues to make slow, but steady progress in the negotiations, and we are optimistic that we will have something tangible to report on by the next Newsletter.

Other tidbits that may be of interest is the complete re-vamping of our Web site (which now has our position statements, Teratogen Updates, Societal Awards, and a variety of other resource information available for quick access), thanks to Bob Veneziale and the Web Committee, the initiation of the option of electronic dues payment, the issuance of Society statements on Accutane and the Fetal Alcohol Syndrome (check them out on the web site) thanks to Ken Jones and the Public Affairs Committee, Bob Brent serving as a representative of teratology to a Carnegie Grant sponsored effort by the AAAS to develop criteria to select court appointed experts in different fields, improvements in our investment strategy by Treasurer John Rogers, Tom Knudsen and John DeSesso continue to represent us on the FASEB consensus funding priority committees and finally, there is the development of the program for the Montreal meeting - but I will let the VP brag about that later in this issue.

I firmly believe that the Teratology Society is turning the corner and that with your active

participation, we will become the multi-faceted and responsive organization that we know we need to be. Having a diverse and proficient workforce is part of that plan. Let's keep doing it!



Robert Kavlock, Ph.D.
2000-2001 President

41st Annual Meeting

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Submitted by Jan Friedman

It is time to make your arrangements to attend the Teratology Society Annual Meeting in Montréal. We received 17% more abstract submissions than last year, and the Program Committee is hard at work selecting the best for presentation. The abstracts cover many different aspects of our field, but clinical teratology, epidemiology, hazard and risk evaluation, and mechanisms of abnormal development are especially well represented. Contributed papers will be presented in the Student Plenary Session, five other platform sessions, and two poster sessions.

The meeting will begin with our Continuing Education Course, which is entitled "Principles of Teratology: Application of New Technologies Towards Understanding Abnormal Development". Course speakers will include Jim Schardein, Tom Knudsen, Simon Ward, Phil Mirkes, Bruce Carlson, John Rogers, Peter Wells, Elaine Faustman and Bill Scott.

We are pleased that the Neurobehavioral Teratology Society and the Organization of Teratology Information Services will be meeting with us and that the Second International Conference on Male-Mediated Developmental Toxicity is meeting in Montréal just before we do. Our program will take advantage of all of these activities - The March of Dimes Symposium will focus on scientific advances in male-mediated developmental toxicity, and we shall have joint symposia with the NBTS on genetic pathways of neurodevelopment and with OTIS on teratogenic effects of obstetrical procedures. The Wiley-Liss Symposium will be on pluripotent stem cells in and out of the embryo. There will be special workshops entitled "Teratogen Update," "Redox Regulation in Mechanisms of Teratogenesis" and "Foodborne Infections During Pregnancy." The meeting will also feature a Genome Symposium ("Using Genomics to Study Birth Defects") and a Public Affairs Symposium ("Report Card on FDA's Efforts to Prevent Teratogenic Birth Defects"). Phil Mirkes will present the Warkany Lecture, "To die, or not to die: that is the question." The full programme is available on our Web site at <http://teratology.org/meetings/2001/prog2001.htm>.

Montréal is famous for the quality and variety of its cuisine, and most evenings during our meeting will be free so that you can go to one of the outstanding restaurants for dinner. Be sure to save Wednesday evening for the Banquet, and don't forget the President's Reception on Sunday. The meeting schedule has been adjusted so that you will also have time for breakfast in a nearby café and lunch in a local deli or bistro.

Information about registering for the meeting is available on our Web site at <http://teratology.org/meetings/>. The registration fee has been reduced by almost 25% for members and 50% for students and trainees this year, but you must register before 15 May to receive the greatest savings.

[Le Centre Sheraton Hotel](#) is a five-star hotel in the heart of Montréal. The Teratology Society has reserved a limited number of rooms at discounted rates for meeting attendees. Arrangements for accommodations must be made through the hotel at (800) 325-3535 no later than May 15, 2001. For more information, please check our Web site at

<http://teratology.org/meetings/2001/montreal2001.htm#Accommodations>. You may want to come a few days early or stay a few days after the meeting to explore [Vieux Montréal](#), enjoy the [Montréal International Jazz Festival](#), or tour the [Laurentian Mountains](#) or [Quebec City](#). Visitors from outside Canada will benefit from [favourable currency exchange rates](#) and a tax refund on purchases. To find out more about what else will be going on in Montréal and Quebec in June, see <http://www.tourism-montreal.org/>.

Make your arrangements now to attend the 2001 Teratology Society Meeting in Montréal!

Update on Future Annual Meetings

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The electronic calendars that many of us now use make it easy to reserve special dates far in the future. You may want to make a note of the dates of the Teratology Society Annual Meetings in 2002 and 2003.

Our 42nd Annual Meeting will be held on June 22-27, 2002, at the [Fairmont Scottsdale Princess](#), near Phoenix, Arizona. The site offers all of the amenities of a world-class resort, including outstanding facilities for tennis, golf, and swimming, but lies within one of America's most rapidly growing metropolitan areas.

The 43rd Annual Meeting will take place on June 21-26, 2003, at the [Loews Philadelphia Hotel](#). This is a spectacular new hotel built in a charming art deco building across the street from Reading Terminal Market and within minutes of the Liberty Bell Pavilion, the Franklin Institute, the Philadelphia Museum of Art and numerous restaurants and theatres.

Save the dates now. These will be great meetings!

Education Course

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Submitted by Kok-Wah Hew

Planning for the 2001 Continuing Education Course is going well. This year, Eli Lilly and Company has graciously agreed to donate \$1,000 and labor to produce the course notebook. This donation allows the Society to keep the cost of attending the course relatively low. The Education Committee would like to thank Eli Lilly and Company for their generosity.

2001 Meeting of the Neurobehavioral Teratology Society

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Submitted by Jerry Meyer

The Neurobehavioral Teratology Society (NBTS) is comprised of a group of academic, industrial, and governmental researchers interested in the effects of drugs, chemicals, and other insults on neural and behavioral development. Many of our members also belong to the Teratology Society (TS), and this summer we will be meeting jointly with the Teratology Society as has usually been the case in previous years. NBTS and TS sponsor a joint symposium that is open to registered members of both societies. This year's joint TS/NBTS Symposium will be held on the morning of Tuesday, June 26th, and is entitled "Old Birth Defects and New Insights into Brain Development." The program is as follows:

SKUSE, D.H., S. THOMAS, J. KUNTSI, K. ELGAR, and P.A. JACOBS. Behavioral Sciences Unit,

London, U.K. and Wessex Regional Genetics Laboratory, Salisbury, United Kingdom.
Neurobehavioral consequences of X-chromosome deletions: implications for autism.

DENNIS, M. Department of Psychology, Hospital for Sick Children, Toronto, Ontario, Canada.
The cognitive phenotype in children with spina bifida and hydrocephalus.

MARIA, B.L. Department of Pediatrics, Neurology and Neuroscience, University of Florida College of Medicine, Gainesville, Florida. On the relation between hindbrain maldevelopment, clinical features, and neurobehavior in Joubert syndrome and Dandy-Walker syndrome.

BASSETT, A.S. Department of Psychiatry, Centre for Addiction and Mental Health, University of Toronto, Toronto, Ontario, Canada. Psychiatric illnesses in adults with 22q deletion syndrome.

Other symposia at the NBTS meeting will include "Neurodevelopmental Models of Mental Illness," organized by Sonya Sobrian and Emmiline Edwards; "Towards a Functional Neurobiology of Teratogenic Neurodevelopmental Disorders: Strategies Using Animal Models," jointly sponsored by NBTS and the Research Society for Alcoholism and organized by Charlie Goodlett and Mark Stanton; and "Exposure to Estrogenic Endocrine Disrupters During Development: Effects on Brain and Behavior" organized by Sherry Ferguson and Katherine Flynn. Non-members of NBTS are welcome to attend these sessions either by registering for the entire NBTS meeting or by paying a 1-day registration fee if you wish to attend only the session(s) held on a specific day.

For more information on NBTS including the full meeting program, membership roster, and details on how to join, please visit our Web site at <http://nbts.bsbe.umn.edu/>. See you in Montreal!

14th Annual OTIS Meeting

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Submitted by Robert Felix

The Organization of Teratology Information Services (OTIS) will once again have their annual meeting with the Teratology Society in Montreal. The 14th Annual OTIS meeting begins on Saturday, June 23 to Tuesday, June 26. Saturday morning will be presentations of OTIS Abstracts submitted from various Teratogen Information Services. Sunday morning OTIS will host speakers from the Centers for Disease Control and the California Birth Defect Monitoring Program. Following that morning session will be the Teratology March of Dimes Symposium on Male-mediated Developmental Toxicity. On Monday morning, the Research Committee of OTIS will sponsor a session on "Neurobehavioral Effects of Environmental Exposures". And finally on Tuesday, OTIS will begin the morning with a joint Teratology/OTIS symposium, "Teratology of Obstetrical Procedures" and end the day with Teratology/OTIS Platform session.

Second International Meeting on Male Mediated Developmental Toxicity

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Montréal, Canada, June 20-23, 2001

Submitted by Barbara Hales

The goals of the Second International Meeting on Male-Mediated Developmental Toxicity are to identify new developments and directions in the field over the past decade, as well as the challenges for the years ahead. The scientific program will feature leaders in the fields of reproductive toxicology, teratology, epidemiology, cancer, development, environmental

toxicology, and occupational health.

The conference will include State of the Art Lectures, Symposia, Poster Sessions and Workshops. The most recent developments will be presented on a range of topics including: parental legacies and genomics; lifestyle, occupational and therapeutic paternal exposures and effects; effects on the gamete-packaging of human sperm; effects on fertilization and the embryo; role of DNA repair and germ cell apoptosis; stem cells, epigenetics and cloning; markers of sperm quality and relationship to progeny; model systems; implications to clinicians and genetic counselors; and impact on reproductive technology and legislation.

The venue is Montréal, a fascinating cosmopolitan city with a unique French and English heritage and the charm of European traditions. The meeting will take place in June, a time when many cultural activities take place in the city and the weather is typically beautiful.

For more information, to be included in our mailing list and to receive announcements, please visit our web site <http://www.medserv.mcgill.ca/malemediated2001>. Contact: Dr. Barbara Hales, Department of Pharmacology & Therapeutics, McGill University, Phone: (514)-398-3610, Fax: (514)-398-7120, E-mail: bhales@pharma.mcgill.ca

Treasurer's Report

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Submitted by John M. Rogers

I would like to report to you on FY2000 year-end financials, our current investments, and on the approved FY2001 budget. Overall, our financial status is continuing to improve in both the stability of our expenses and in the strength of our revenues and investments. Although we have a way to go before we reach our financial goals, steady progress is evident. FY2000 brought a successful Annual Meeting with unprecedented levels of contributions from both new and familiar supporters, and in the end made about \$30,000. This is so important, as the Annual Meeting is our primary income source. A new revenue source associated with the Annual Meeting is a commission to the Society based on the number of room nights occupied during the meeting. SOT has done this for a while now, and it really helps. For the 2000 AM, this commission was about \$13,000. We have pledged to use this money to reduce the registration fee for the subsequent Annual Meeting, and we have done this for the 2001 meeting in Montreal. The bottom line on the FY 2000 budget was a net of approximately \$90,000 in income over expenses. We were also able to invest an additional \$25,000 in a new CD with Legg-Mason, bringing our CD investments to over \$165,000. While this is encouraging, I would like to see this number triple over the next five years or so, which would give us the level of long-term financial comfort and flexibility that we need. We can get there if we continue to work on and improve our efficiency and our fund-raising.

The news for FY 2001 so far is good. We have a great meeting planned with a great budget, and a very reasonable registration fee. Let's work for a good turnout, and remember to register early so that the Society will get the full benefit of the room night count.

Here is the approved Teratology Society Budget for FY2001. Most of the category names are descriptive enough, but anyone who has any questions about the budget should e-mail them to me (rogers.john@epa.gov). An exciting new item in the budget is money for a display booth that we will develop and exhibit at SOT and at least one other major meeting this year. It is important that we maintain current membership and seek new members wherever possible, and we think this exhibit will both educate people about our Society and attract new members.

REVENUE		EXPENSES	
Awards	25000	Abstracts-AM	5000
Contributions -AM	57900	Audit	3500

Contributions - CE	1000	AV -AM	4500
Courses	27425	AwardsStudent - AM	15000
Hotel commission 2001	0	Awards-President's	0
Dues-Reg/Assoc/Student 00	40000	Ballot	2000
Dues-Sustaining 2001	37500	Banquet AM	29500
Exhibitors AM	12000	Bank Charges	1500
Interest-G&A	10000	Committees	0
Journals/Subscr	45000	Continuing Ed-AM	22500
Labels (mail)	0	Council	10000
Late Fees (Dues)	0	Credit Card Fees	5000
Miscellaneous	2000	Digital Projector-AM	2500
Registration-AM	93875	Directory-Memb/Pub	0
		Display Booth Start-up	4000
TOTAL	351700	Dues&Fees	6300
		Exhibits - AM	2400
2000 Hotel Comm.	12895	FAX	500
Carryover			
		Financial Serv. -G&A	4500
		Food/Bev/Room - AM	49210
		Future Mtg Exp-AM	0
		Insurance	2700
		Journal-Memb/Pub	45000
		Legal Fee	500
		Liaison	0
		Management Fee-G&A	10300
		Misc/Other-G&A	5000
		Misc - AM	4300
		Newsletter-G&A	1000
		Placement Service-G&A	0
		Plaques-AM	0
		Postage-G&A	4000
		Posters-AM	2250
		Primer	0
		Printing	8000
		Prior Year Expense	0
		Public Affairs	1000
		Registration-AM	0
		Signage - AM	500
		Speakers AM	39600
		Speakers CE	0
		Staff Time - AM	7266
		Staff Time - AM yearly	23000
		Staff Travel - AM	4600

Steno/Clerical	32789
Supplies	2000
Telephone	1200
Travel&Entertainment	0
Website Expense	1500
Xerox	180
TOTAL	364595

Nominations Committee Update

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Teratology Society 2001 Ballot

Submitted by Christina Chambers

The TS Nominations and Elections Committee has developed a fine list of candidates for the upcoming election of officers. The nominees are as follows:

Vice-President Elect (2001-2002)

Barbara F. Hales, Ph.D.

Rochelle W. Tyl, Ph.D., DABT

Treasurer (2001-2004)

Robert L. Clark, Ph.D.

John M. Rogers, Ph.D.

Councilor (2001-2004)

Jane Adams, Ph.D.

Patrick Wier, Ph.D.

The Committee members would like to thank each candidate for accepting the challenge to run for office and for their willingness to contribute to the future of the Society. Current Teratology Society members can expect to receive the printed ballot including candidates' statements later this month with a June deadline for returning your votes. Remember that petitions for additional nominations, signed by at least 5% of members, can be accepted through April 23, 2001.

I would also like to thank each Committee member for volunteering to work on this Committee and for their contribution to making this a successful election.

Christina Chambers, MPH

David Beckman, Ph.D.

George Daston, Ph.D.

Elaine Francis, Ph.D.

Susan Henwood, MS, DABT

Web Watcher

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Submitted by Robert Veneziale

The Teratology Society Web Site has been completely redesigned and improved! The look and feel of the site is more professional and the menu system is easier to use and navigate. The fresh new look and design of the site was done by Robert Vinson from McGill University. Please join me in extending our appreciation to him for a job well done! Your comments and

suggestions for further improvements to the site are always welcome (send one now, just [CLICK HERE](#)).

Another new feature of the web site is [on-line dues payments](#). This project also required considerable effort and was accomplished by our webmaster, Mr. Bill Landau, with the help of Tonia Masson. Members are highly encouraged to pay their dues on-line because it helps contain the Society's administrative resources and costs.

The Web Site Committee has also been busy adding and updating content on the site. This includes the Annual Meeting information, newsletters, links, book of the month, etc. In addition to these standard features of the site, a comprehensive list of the Society's [awards and recipients](#) was compiled by Ron Hood and is now available on-line. There are still some gaps in this list from previous years, and you are encouraged to forward any information that will help complete this list (see email below). We are constantly looking for new information to post - photos, links, suggested books, etc. Please send any items to be considered for posting on the site to webmaster@teratology.org.

Spring MARTA Meeting to be at Bayer in May

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Submitted by Robert Clark

The spring meeting of the Middle Atlantic Reproduction and Teratology Association (MARTA), tentatively set for May 3, will be held at Bayer in West Haven, CT. MARTA president and meeting host, George Clemens, plans that the program will include a training session on giving presentations on teratology and birth defects prevention at schools as well as health and medical departments. MARTA has a long and distinguished history as a society for the exchange of information concerning reproduction and teratology (in the past 34 years, MARTA has sponsored approximately 97 meetings) and this community involvement theme is an outgrowth of this interest. More information about MARTA can be seen within the Teratology Society Web site (go to <http://www.teratology.org/members/MARTAtext.htm>).

American Cleft Palate/Craniofacial Association Update

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Submitted by Michael Cunningham

Although the American Cleft Palate/Craniofacial Association is alive and well, it has been difficult to get things off the ground in terms of planning for a joint meeting of the Teratology Society and ACPA. Over the past four years, several organizational meetings have occurred considering everything from invited speakers, to panels, to shared sessions, to overlapping meetings. Although both parties (ACPA and Teratology) seem interested, no forward progress has been made as of this writing. I will be attending this year's ACPA meeting in Minneapolis this April and will once again raise the idea of increased interactions between our societies. I am on the scientific program committee for the 2002 meeting in Seattle (April 30th - May 5th at the Seattle Sheraton Center) and will again attempt to get the ball rolling. If the Teratology Society members who are interested in craniofacial disorders would like to submit abstracts to the 2002 ACPA meeting, this might provide a sufficient number of abstracts to have a small specialty session...or maybe even a panel. Any members interested in perusing this avenue should contact me at mcunning@u.washington.edu.

Reproductive and Genetic Risks of Preconception Exposure to Mutagenic Agents and Reproductive Toxins [top](#)

There has been continued interest in the impact of environmental reproductive toxicants, including radiation, on the male and female reproductive capacity. Although the interest has been long-standing, society's interest in environmental toxicity, radiation effects, improved work safety and the proliferation of new chemicals has more recently focused on this area. There has been a long-standing polarization of feelings among scientists with regard to the risk of preconception exposure to reproductive toxicants [Brent, 1972] ([Table 1](#)). A more recent issue has been the allegation that servicemen exposed to multiple agents in Iraq during Desert Storm have fathered an increased number of children with birth defects following their return to the United States (Brent 1996).

What can we say with certainty about the impact of preconception exposures on the reproductive capacity of exposed human populations?

1. There are substantial data from animal experiments and epidemiological studies that indicate that ionizing radiation, drugs and chemicals can decrease male and female fertility by decreasing the number of sperm and or eggs. These results have been observed in occupational epidemiological studies and in patient populations who have survived cancer chemotherapy or radiation therapy. In the population of male cancer survivors there is a suggestion that the males are at greater risk for infertility than the females. Thus, subfertility or infertility in men and women are proven risks from certain exposures to ionizing radiation, some chemicals and chemotherapeutic agents. But one also recognizes that these effects are threshold phenomena and therefore there are no-effect doses for these effects.
2. There is extensive mammalian animal investigations to indicate that males and females exposed to high exposures of ionizing radiation and some mutagenic chemicals have offspring with an increase in early embryonic death (dominant lethals), point mutations and chromosome abnormalities. It is true that the maximum manifestation of some of these effects varies with the stage of sperm and egg development and the dose of these agents. But yet, in animal experiments utilizing very low exposures to mutagenic agents, experimental offspring frequently cannot be differentiated from the controls, even when the experimental conditions have been established to maximize the mutagenic effect.
3. Patients who have survived therapeutic doses of radiation and chemotherapy as children or young adults may have problems with infertility, but the fertile population does not appear to have a measurably increased risk of spontaneous abortion or offspring with congenital malformations. It is true that even in the larger studies the populations are small. It is therefore possible that if there were a small risk for the induction of chromosomal aberrations and genetically caused congenital malformations that these studies would not be able to recognize them. Furthermore, patients frequently wait years following cancer treatment before having children and of course there may be two decades between childhood cancer treatment and procreation. The very low risk of transmitting induced mutations to the offspring of treated cancer survivors is a reflection of the very low risk of mutagenesis from environmental mutagens in general and the lapse in time between exposure and procreation.
4. The concept of "biologic filtration" is proposed to explain why mutagenic effects of ionizing radiation are readily demonstrated to be the cause of cancer in exposed animals and humans and why clinical genetic disease in the F1 generation is so difficult to demonstrate in human populations ([Table 2](#)).
5. Low frequency EMF, microwaves and ultrasound, do not have the ability to alter DNA without affecting other cellular functions, they are not cytotoxic at exposures which concern us clinically and their toxic effects are deterministic (threshold effects) rather than stochastic. While some in vitro studies have suggested that these forms of radiation have mutagenic potential, the cytotoxic effects that accompanies the mutagenic effect is not present at the usual exposures of all these forms of non-ionizing radiation. Therefore, if

genetic effects are to be manifested from preconception exposures to ultrasound, microwaves and low frequency EMF, the risks have to be considerably smaller than the risks from ionizing radiation, and actually there may not be any increased risks. The epidemiological studies and animal studies support this conclusion.

The Teratology Society has not addressed this topic fully at our annual meeting, although this year (2001), there is a meeting dealing with the subject of male mediated reproductive toxicity just preceding the annual Teratology Society meeting. There are conflicting opinions about the magnitude of the problem of human male mediated reproductive toxicity of environmental agents. It is important that this subject be debated at the Teratology Society meeting in order to give all those interested an opportunity to share their viewpoints and to provide accurate risk estimates to counselors who have to provide information to parents who have experienced potentially toxic exposures to environmental agents.

Robert L. Brent
DuPont Hospital for Children
Jefferson Medical College

References

Brent, R.L.: Protecting the public from teratogenic and mutagenic hazards. *J. Clin. Pharmacol.* 12:61-70, 1972

Brent, R.L.: Biological factors related to male mediated reproductive and developmental toxicity. In: Olshan, A.F. and Mattison, D.R. (Eds). Male-Mediated Developmental Toxicity. Plenum Press, New York, pp. 209-242, 1994

Brent, R.L. and Beckman, D.A. Desert storm sequelae: Are gulf war veterans fathering an increased incidence of children with congenital malformations? *Pediatric Research* 39(4), Part A, 472A, 1996.

Brent, R.L.: Utilization of developmental basic science principles in the evaluation of reproductive risks from pre- and postconception environmental radiation exposures. Paper presented at the Thirty-Third Annual Meeting of the National Council on Radiation Protection and Measurements. The Effects of Pre- and Postconception Exposure to Radiation, April 2-3, 1997, Arlington, Virginia. *Teratology* 59:182-204, 1999.

Table 1

Controversy Concerning the Magnitude of the Genetic Risk from Environmental Agents

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"The threat of genetic damage is our number one health problem." (Legator 1968)

"There is no realistic way to predict a safe human level of a substance shown to be teratogenic, carcinogenic or mutagenic in animals." (Epstein 1971)

"Chemical mutagenesis is certainly a very small problem as we see it at present. We view it as 1% of the very broad problem of human genetics. We do not propose setting up whatever Dr. Crow means by a monitoring system." (Shannon 1968)

"If the public flatly refuses to take decisive action on the basis of the massive volumes of data linking cigarette smoking to lung cancer, how can you expect people to act vigorously on the

more hazy and abstruse things like a chemical that may or may not be mutagenic in man." (Crow 1969)

"I think it is absolutely essential that we do not delude ourselves about the magnitude and complexity of our task. The general public is easily scared and when they are scared, they may form pressure groups to push governmental agencies into action. These agencies are scientifically naive and have to rely on our advice. We should be very careful not to give advice that is itself naive; that is advice based on oversimplified tests and facile interpretations." (Auerbach 1971)

"The world is full of mutagens, carcinogens and reproductive toxins, and it always has been. The important issue is the human exposure dose. Fortunately the exposure is usually minuscule". (Ames 1989)

"Nature's toxic chemicals are the major carcinogens and mutagens ingested by humans. These natural chemicals in plants are present at a level 10,000 times the prevalence of man-made pesticide residues. There is a tendency for laymen to think of chemicals as being only man-made and to characterize them as toxic". (Ames 1989).

"It would be foolish to advise anything other than extreme caution over the exposure of fathers to chemical mutagens when our understanding of the quantitative risks to future generations is so rudimentary." (Brown 1985)

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Table 2

Biologic Filtration: Loss of genetic effects of exposure to sex cells to mutagenic agents

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- 1) Affected germ cells may be lost during gametogenesis.
- 2) The mature egg or sperm may have a decreased capacity to be fertilized or to fertilize.
- 3) The embryos resulting from these affected eggs and sperm may result in embryonic loss during preimplantation or early organogenesis. In most cases the women may not know that they were pregnant.
- 4) If there is a lapse in time between the exposure to reproductive toxicants and insemination and fertilization, some of the affected gonadocytes may be lost (bridge formation, lethal mutations).
- 5) In many instances the mutagenic exposure to the human populations may be so low that the calculated risks would not result in a change in the incidence of genetic disease because the sample size is too small
- 6) Most point mutations result in recessive genetic diseases.

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Teratology Society New Members

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The Teratology Society is pleased to welcome the following individuals that were approved for membership in the year 2000.

Regular Members

Stacy Branch	Catherine Hayes	Cynthia Moore
Sophie Choulika	Ronald Hines	Michael Narotsky
Vic Ciaravino	Charlotte Hobbs	Janet Nokleby
Jodie Duffy	Steven Holladay	Meg Parkinson
P. Jackie Duke	David Hovland	Melissa Rogers
Elpida-Niki Emmanouil-Nikaloussi	William Kelce	David Sillence
Ali Faqi	Jiin-Jia Liaw	Jerry Spoo
Tammye Fleeman	Angela Lin	Belén Tornesi
Claire Gavin	Sarah Mattson	Yoshihiro Tsutsui
Mari Golub	Donald McLeod	Keisuke Yamashita

Associate Members

Jennifer Manley
Seyed Moallem
Adele Viguera

Emeritus Member

Kenneth P. Chepenik, Thomas Jefferson University

Student Members

Christopher Cifarelli
Francisco Cisneros
Cynthia Coleman
Paritosh Markus Dey
Yan Ding
Benjamin Gersh
Elise Lewis
Dana Tarka

Thank you!

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The Teratology Society appreciates the support of the following members who have graciously volunteered their time to staff the booth and provide information about the Society to potential new members at the upcoming SOT meeting in San Francisco, California.

Mildred Christian	Bob Parker
George Daston	Jack Polidoro
George Dearlove	Dean Rodwell
Kevin Denny	John Rogers
Maureen Feuston	Joe Sigland
John Graham	Bill Slikker
Susan Henwood	Melissa Tassinari
Alan Hoberman	Bjorn Thorsrud
Bob Kavlock	Shelley Tyl
Carole Kimmel	Gary Wolfe

If you will be attending the SOT meeting and are interested in representing the Teratology Society, your assistance is welcome. The Society's booth is 1803, feel free to stop by and greet potential new members.

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