



Environmental Mutagenesis and Genomics Society

Synergistic Interactions for a Better World

- **Mission:** To understand and mitigate the impacts of environmental exposures on the genome to protect human health through diverse and inclusive leadership in research, professional development, and collaboration.
- **Vision:** A world where science drives sound decisions to protect people's health from environmental hazards.
- EMGS was founded in 1969, incorporated in Washington, DC as a 501(c) (3) We are also classified as a public charity under section 509 (a) (2) with an endowment fund.
- Society Journal: *Environmental and Molecular Mutagenesis* – 2019 impact factor – 3.131
- Membership: ~ 400
- EMGS rejoined FASEB in 2020 after previous membership from 2008-2013.



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2021-2025 Strategic Plan

Goals:

Be recognized as an authoritative and trusted voice in science and research driving decisions impacting people's health

Connect and expand a global and diverse community of scientists to advance the EMGS vision and mission

Strengthen membership benefits and experience to protect people's health from environmental hazards

Core Values:

To protect human and environmental health

To inform on issues related to genome and epigenome science

To strengthen science in public policy

To promote an Inclusive, Diverse, and Equitable membership and leadership demographics



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1. Early 20th Century Identification of Physical (X Rays, UV) and Chemical Mutagens (Mustard Gas)
2. Untested chemicals enter the environment after WW II
3. Concern about the potential effects of the chemical on human health led a group of scientists, Drs. Alexander Hollaender, Joshua Lederberg, James Crow, James Neel, William Russell, Heinrich Malling, Frederick J. de Serres, and Matthew Meselson, among others, to alert NAS, convene an NIH conference on mutagenesis, and develop a proposal for testing pesticides for mutagenicity. The result of their efforts led to the passage of the Toxic Substances Control Act (1976).
4. This group of scientists among others, founded the Environmental Mutagenesis Society (EMS) in 1969. The society was founded to provide a forum for the establishment and support of scientists in the field of environmental mutagenesis



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Accomplishments of EMGS

1. Environmental Mutagen Information Center (1969)
2. Position paper: Environmental Mutagenic Hazards (Science, 1975)
3. Establishment of Gene-Tox program at EPA (1976)
4. Harmonization of Testing Methods Worldwide



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Membership:

Basic science

Applied research

Risk assessment and policy

Areas of Research:

- Germ Cell and Heritable Effects
- Applied Genetic Toxicology
- DNA Repair & Mutagenic Mechanisms
- Epigenomics
- Genomics and Data Sciences
- Genotoxicity Risk Assessment and Public Health
- In Vivo Mutagenesis



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Webinar and Online Workshops

- Genome Instability and Disease (2.16.21)
- Spotlight on Diversity and Inclusion: An EMGS webinar and online workshop (5.24.21)
- Genetic and Epigenetic Clinical testing of Human sperm: today a dream, tomorrow a reality? (6.17.21)
- Germ Cell and Heritable Effects SIG (6.17.21)
- *In Silico* Genetic Toxicology Protocols and Practical Applications (6.21.21)
- Development of an *In Silico* Carcinogenicity Protocol: Status and Future Directions (6.28.21)
- Women in EMGS (WEMGS) Lunch Special (7.14.21)
- Epigenomics SIG Mid-Year Meeting, Webinar and Online Workshop (7.15.21)



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Alexander Hollaender Courses

The Alexander Hollaender Courses are organized each year in countries where environmental mutagenesis and health issues are major concerns. Meetings are designed to give local scientists information in current topical areas. For example, population monitoring for health hazards and mutagenic hazards of environmental toxic substances.

In the past 7 years, courses have been in Mexico City, Mexico; Buenos Aires, Argentina; Cape Town, South Africa; Cairo, Egypt; Curitiba, Brazil; Harare, Zimbabwe; and, this year, in Bogota, Colombia.

Results:

- Large numbers of papers published in the field of genetic toxicology and environmental mutagenesis from scientists in countries in which environmental mutagenesis was a developing science 10 or 20 years ago.
- There are viable research groups in environmental mutagenesis in Latin America, Africa, and Asia whose founding members were trained and first exposed to environmental mutagenesis research through EMGS-sponsored training programs.



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FASEB Benefit/Support

1. Promotion of our Society's mission and vision
2. Increased visibility and opportunities to attract new members
3. Understanding how best to operationalize our new strategic plan (e.g. D&I a new core value)
4. Advocacy for research funding in EMGS areas of interest (protection of the human genome)