

Bella A. Maranion

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**RELEVANT EXPERIENCE: U.S. ENVIRONMENTAL PROTECTION AGENCY**

**Office of Air and Radiation, Office of Atmospheric Programs, 2000 - Present Chief
Stratospheric Protection Division, Alternatives & Emissions
Reduction Branch**

Bella Maranion has over 25 years of experience at the U.S. Environmental Protection Agency (EPA) on global environmental issues of stratospheric ozone layer protection under Title VI of the Clean Air Act and the Montreal Protocol and climate protection. Professional experience relevant to the Montreal Protocol position of TEAP co-chair include the following:

- Since 2012, co-chairing the Montreal Protocol's Technology and Economic Assessment Panel (TEAP); providing relevant technical expertise, guidance, and direction for the Panel's technical and economic analyses and reports to support decisionmaking by the Parties to the Protocol; provided strategic planning and management of the panel's work and that of its Technical Options Committees (TOCs) to implement the panel's Terms of Reference, standard operating procedures, recruitment of needed expertise, and ensure the integrity and objectivity of the panel's work for Parties to meet the goals and challenges under the Protocol; worked collaboratively and effectively with co-chairs of other panels, the Science Assessment Panel and Environmental Effects Assessment Panel, to coordinate on the assessment reports to parties and identify cross-over topics across the Panels; served as either a co-chair or as a member on numerous TEAP task forces and working groups covering important and timely topics for Parties including replenishment of the Multilateral Fund, evaluation of alternatives, destruction, and energy efficiency;
- Over 15 years of experience on EPA's Significant New Alternatives Policy (SNAP) Program working with various stakeholders to manage smooth, safe transition to ozone- and climate-friendly alternatives in the U.S. and globally; this includes extensive knowledge of ozone-depleting substances (ODS) and the various sectors of historical use including refrigeration, air conditioning, foams, fire suppression, and solvents;
- Leading the implementation of the US Halon Management Strategy by serving as key liaison for domestic and global transition in the fire protection industry, military, aviation, marine, and aerospace; includes leading review of alternatives, monitoring continuing use, supporting revisions to national and international standards;
- Supporting other policy, regulatory, and sector initiatives including to phase out ODS and phase down high-GWP chemicals; this includes opportunities through to reduce use and emissions through changes in purchasing practices and procurement regulations as well as through voluntary partnerships such as with the supermarket sector, innovative financing mechanisms for international chiller replacement, and through responsible disposal of appliances and proper destruction;
- Serving as technical expert on disposal and destruction options of ODS and methodologies for credits for destruction;
- Extensive experience with employing successful collaborating practices and techniques in various team and workgroup settings within EPA, with interagency federal agency and the military, with

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outside stakeholders, with national and international standards setting organizations, and with national and international governmental and non-governmental organizations.

Serves as recognized technical and policy expert on numerous domestic and international panels, technical committees, and working groups collaborating on technical reports, revised standards, and other emerging topics addressing challenges to the global transition away from ozone-depleting and global warming chemicals. Provide proven experience and demonstrated organizational skills in successfully managing a national and international portfolio of projects, leading working groups on successful collaborative efforts, and communicating technical and scientific information effectively both orally and in writing.

Office of Air and Radiation, Office of Atmospheric Programs, 1991 -1998 Program Analyst Global Programs Division, Technology Transfer Program

- US Bilateral Assistance Program Team collaborating with World Bank, UNEP, UNDP, UNIDO
- Halon recovery and recycling training projects in China, Malaysia, Philippines, Venezuela
- Project implementation, accounting, monitoring, reporting to Montreal Protocol Multilateral Fund

Office of Chemical Safety and Pollution Prevention, Office of 1989 -1991 Management Pesticides Programs, Registration Division Intern

- 2-year rotational assignments, environmental regulations and policy
- Various media: pesticides, hazardous waste (Superfund), acid rain, stratospheric ozone depletion, climate change

TEAMS AND WORKING GROUPS EXPERIENCE:

AFFILIATIONS

<u>AFFILIATIONS</u>	<u>FROM – TO</u>	<u>POSITION</u>
World Meteorological Organization-United Nations Environment Programme (WMO-UNEP) Working Group on the 2014 Scientific Assessment of Ozone Depletion and Assessment for Decision-Makers	2014	Reviewer
Federal Acquisition Regulations Interagency Working Group on HFCs	2013 - 2016	Member
Federal Aviation Administration Halons Aviation Rulemaking Committee	2013 – 2014	Member
UNEP Technology and Economic Assessment Panel (TEAP):	2012 – 2020	TEAP Co-chair
- Decision XXX/1 Task Force on Replenishment	2010 - 2012	Senior Expert Member
- Decision XXX/3 Task Force on CFC-11 Emissions	2019-2020	Task Force Co-chair
- Decision XXIX/10 Task Force on Energy Efficiency Task	2019-2020	Member
- Decision XXIX/9 Working Group on HFCs	2017-2018	Task Force Co-chair
- Decision XXIX/8 Working Group on Halons	2018	Member
- Decision XXIX/4 Task Force on Destruction.	2018	Member
- Decision XXVIII/5 Task Force on Replenishment	2017-2018	Member
- Decision XXVII/5 Working Group on HCFCs	2017-2018	Member
- Decision XXVII/4 Task Force on Alternatives to ODS	2016	Member
- Decision XXVI/9 Task Force on Alternatives to ODS	2015 – 2016	Task Force Co-chair
- Decision XXV/5 Task Force on Alternatives to ODS	2014 – 2015	Task Force Co-chair
- Decision XXV/6 Task Force on Nominations and Membership Configurations	2013 - 2014	Member
- Decision XXIV/8 Task Force on Operating Procedures, Nominations, and Membership Configurations	2013 – 2014	Task Force Co-chair
- Decision XXIII/10 Task Force on TEAP Terms of Reference, Operating Procedures, and Codes of Conduct	2011 – 2012	Task Force Co-chair
- Decision XXII/22 Task Force on ODS Destruction Technology	2010 – 2011	Task Force Co-chair
- UNEP Halons Technical Options Committee (HTOC)	2010 – 2011	Member
	2006 – 2010	Member
	2020	Peer Reviewer

TEAMS AND WORKING GROUPS EXPERIENCE:

AFFILIATIONS

	<u>FROM – TO</u>	<u>POSITION</u>
American Carbon Registry ODS Destruction Methodology	2009	Member
Climate Action Reserve ODS Destruction Technical Protocol Workgroup		
International Organization for Standardization Gaseous Extinguishing Agents Technical Committee	2006 – Present	Member
U.S. Federal Aviation Administration International Aircraft Systems Fire Protection Working Group – Task Group on Halon Options	2006 – 2010	Member
International Maritime Organization Fire Protection Subcommittee	2006 – 2010	US Delegation Member
International Civil Aviation Organization Air Navigation Bureau – Working Group on Halon Replacement	2006 - Present	Member
National Fire Protection Association (NFPA) Standard 2010 Aerosols Technical Committee	2002 - Present	Member
NFPA Standards 12, 12A, and 2001 on Gaseous Agents Combined Technical Committee	2000 – Present	Member
U.S. Department of Defense ODS Substances Services Steering Comm	2000 – Present	Member

HONORS:

U.S. EPA Silver Medal for Superior Service, 2017
US. EPA Outstanding Team Award, 2016
U.S. EPA Silver Medal for Superior Service, 2016
U.S. EPA Gold Award, 2015
U.S. EPA Public Service Award, 2014
U.S. EPA Office of Air and Radiation Collaborator Awards, 2013
Montreal Protocol Award for Contributions to TEAP, 2013
Climate Action Reserve CARROT Award, 2010
U.S. EPA Stratospheric Ozone Protection Award, 2008
U.S. EPA Bronze Award

EDUCATION:

University of Illinois at Chicago, B.S., Bioengineering, 1989

CONTRIBUTIONS TO SELECTED PUBLICATIONS/MEDIA PRODUCTIONS:

1. UNEP. TEAP Annual Progress Reports (2010-2020).
2. UNEP. TEAP Decision XXXI/1 Replenishment Task Force Report, May 2020.
3. UNEP. TEAP Decision XXX/5 Energy Efficiency Task Force Report, May, and final September 2019.
4. UNEP. TEAP Decision XXX/3 CFC-11 Task Force Report, May 2019.
5. UNEP, TEAP Decision XXIX/10 Energy Efficiency Task Force Report, May, and update September 2018.
6. UNEP, TEAP Decision XXIX/9 Working Group Report on HFCs, March 2018.
7. UNEP, TEAP Decision XXIX/8 on Future Availability of Halons and Their Alternatives, September 2018.
8. UNEP, TEAP Decision XXIX/4 Destruction Task Force Report, April, supplement May, and addendum September 2018.
9. UNEP. TEAP Decision XXVIII/5 Replenishment Task Force Report, May, and supplement October 2017.
10. UNEP. TEAP Decision XXVIII/3 Working Group Report on Energy Efficiency, October 2017.
11. UNEP. TEAP Decision XXVII/5 Working Group Report on Phase-out of HCFCs, June 2016.
12. UNEP. TEAP Decision XXVII/4 Task Force Report on Alternatives to ODS, Part I March, Part II June, and update September 2016.
13. UNEP. TEAP Decision XXVI/9 Task Force Report on Alternatives to ODS, extract April, final June, update September 2015.

14. UNEP, TEAP Decision XXV/6 Working Group Report (TEAP nominations, TOCs configurations, and options to streamline annual technology updates), May 2014.
15. UNEP. TEAP Decision XXV/5 Task Force Report on Alternatives to ODS, October 2014.
16. UNEP. TEAP Decision XXIV/8 Task Force Report on TEAP Terms of Reference, May 2013.
17. UNEP. TEAP Decision XXIII/10 Task Force Report - Updating the Nomination and Operational Processes of the TEAP and its Subsidiary Bodies, May 2012.
18. UNEP. TEAP Decision Ex.III/1 Working Group Report on the Climate Benefits and Costs of Reducing HFCs, September, addendum October 2016.
19. UNEP. TEAP Assessment Reports (2014, 2018)
20. UNEP. TEAP HTOC Assessment Reports (2006, 2010, and 2014).
21. UNEP. SAP, EEAP, and TEAP Synthesis Reports (2015, 2019).
22. WMO-UNEP. Scientific Assessment of Ozone Depletion and Assessment for Decision-Makers, 2014.ICF. Federal HFC Emissions Accounting Tool, October 2014.
23. EPA. ODS Destruction in the United States and Abroad, 2007, revised 2009, 2015, and 2018.
24. ICF. Review of the Transition Away From Halons in U.S. Civil Aviation Applications, September 2004.
25. Climate Action Reserve. U.S. Ozone-Depleting Substances Destruction Protocol, February 2010.
26. Climate Action Reserve. Article 5 Ozone-Depleting Substances Destruction Protocol, February 2010
27. EPA video, produced by ICF/Dorst Mediaworks: "Ozone to Climate: Twenty Years of International Collaboration," 2007.
28. EPA. Achievements in Stratospheric Ozone Protection: Progress Report, April 2007.
29. EPA/UNEP video, produced by ICF/Dorst Mediaworks: "Global Chiller Replacement Initiative," 2006.
30. Catchpole, D., Maranion, B., Verdonik, D. Slow transition to halon alternatives in new aircraft raises concern. ICAO Journal, 60 (6): 6-8, 29-30, 2005.
31. Halon Alternatives Research Corporation. Voluntary Code of Practice for the Reduction of Emissions of HFC and PFC Fire Protection Agents, March 2002.
32. EPA. Carbon Dioxide as a Fire Suppressant: Examining the Risks, February 2000.
33. EPA. U.S. Halon Management Strategy, July 2000.
34. EPA. O₃ Partnerships Progress Report: U.S. Bilateral Activities Under the Multilateral Fund, May 1994.
35. Bowser, R., Conbere, S., Maranion, B., Miller, A. Southern exposure: global climate change and developing countries, 1992.