Update on PROSWIFT Act
Space Weather Advisory Group

NASA Space Weather Council
August 24, 2022

Dr. Tamara Dickinson
President, Science Matters Consulting, LLC
Chair, Space Weather Advisory Group*
www.weather.gov/swag

*All opinions are my own and not those of the SWAG
ESTABLISHED – In 2021 by NOAA Administrator ... informs the interests and work of SWORM

COMPOSITION - appointed by SWORM, 5 representatives of academic, commercial space weather, end user communities

TERM LIMITS - 3 years terms, no more than 2 consecutive terms

CHAIR – chosen by NOAA Administrator, no more than 2 terms, regardless of whether the terms are consecutive
## Committee Members

<table>
<thead>
<tr>
<th>SWAG Nongovernmental End-User Representatives</th>
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<tr>
<td>Tamara Dickinson, SWAG Chair</td>
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<tr>
<td>Science Matters Consulting</td>
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<tr>
<td>Mark Olson</td>
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<tr>
<td>North American Electric Reliability Corporation</td>
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<tr>
<td>Michael Stills</td>
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<td>United Airlines (retired)</td>
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<tr>
<td>Craig Fugate</td>
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<td>One Concern (former FEMA Adm)</td>
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<td>Rebecca Bishop</td>
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<td>Aerospace Corp.</td>
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<th>SWAG Commercial Sector Representatives</th>
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<tr>
<td>Jennifer Gannon</td>
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<tr>
<td>Computational Physics, Inc.</td>
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<tr>
<td>Conrad Lautenbacher</td>
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<tr>
<td>GeoOptics, Inc. (former NOAA Adm)</td>
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<td>Seth Jonas</td>
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<tr>
<td>Lockheed Martin</td>
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<tr>
<td>Kent Tobiska</td>
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<td>Space Environment Technologies</td>
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<td>Nicole Duncan</td>
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<td>Ball Aerospace</td>
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<th>SWAG Academic Community Representatives</th>
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<tr>
<td>Tomas Gombosi</td>
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<tr>
<td>University of Michigan, Ann Arbor</td>
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<tr>
<td>Delores Knipp</td>
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<tr>
<td>University of Colorado, Boulder</td>
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<tr>
<td>Scott McIntosh</td>
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<tr>
<td>National Centers for Atmospheric Research</td>
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<td>Heather Elliott</td>
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<tr>
<td>Southwest Research Institute</td>
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<tr>
<td>George Ho</td>
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<td>Johns Hopkins University Applied Physics Laboratory</td>
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Advise White House SWORM Subcommittee on:

- Facilitating *advances in the space weather enterprise* of the US
- Improving the ability of the US to *prepare for, mitigate, respond to, and recover from* space weather phenomena
- Enabling the coordination and facilitation of *R2O2R*
- Developing and implementing the *integrated strategy for coordinated observation*

Conduct a comprehensive *user needs survey of space weather products*
SWAG Meetings

December 1, 2021 (virtual)

- Briefings by SWORM Co-Chairs (OSTP, NWS, DHS)
- PROSWIFT Act overview of SWAG duties
- Kicked off discussion of the user needs survey

March 17-18, 2022 (virtual)

- Briefing by SWORM
- Defined user needs survey process and sectors
- Related activities - SW Roundtable and NASA SWC

For meeting information please visit: www.weather.gov/swag
June 13-14, 2022 (virtual)

- Briefing by SWORM
- Briefing by user needs survey sector leads on process and survey questions
- Concurrence on user needs survey sectors survey process and questions
- Discussion on how to gather input to SWORM to update Space Weather Strategy

For meeting information please visit: www.weather.gov/swag
The comprehensive **user needs survey** of space weather products will identify:

- space weather research
- observations
- forecasting
- prediction
- modeling advances required to improve space weather products.
User Survey Requirements:

1. Assess the **adequacy of Federal Government goals** for lead time, accuracy, coverage, timeliness, data rate, and data quality for space weather observations and forecasting;

2. Identify options and methods to **advance the above goals**;

3. Identify **opportunities for collection of data** to address the needs of space weather users;

4. Identify methods to **increase coordination of space weather R2O2R**;

5. Identify opportunities for **new technologies, research, and instrumentation** to aid in understanding, monitoring, modeling, prediction, and warning of space weather; and

6. Identify methods and technologies to **improve preparedness** for space weather.
1. Use one or more **space weather scenarios** to illustrate possible impacts

2. Use a set of **common questions** developed by SWAG in collaboration with NWS Social, Behavioral, and Economic Program
   a. May have additional **sector specific questions**
   b. Have questions reviewed by SWORM

3. **Space weather sectors to survey**
   a. Divide SWAG into sector specific subgroups
   b. Possibly do pilot on one or two sectors

4. **Develop sector specific plans to conduct user survey**

5. Assimilate results into **one or more products**
User Survey Sectors and Leads

- Electric Power Grid – Olson, Gannon, Jonas, Fugate
- Satellite – Duncan, Knipp, Lautenbacher, Ho
- Global Navigation Satellite System – Bishop, Gombosi, Stills, Jonas
- Aviation – Stills, Tobiska, Ho
- Emergency Management – Fugate, Jonas, Ho
- STM/SSA - Knipp, Bishop, Duncan, Tobiska, McIntosh
- Radio Frequency Application (comms and Radar) - Bishop, Fugate, Stills, Jonas
- Human space flight – Tobiska, Ho, Gannon
- National Security – Jonas, Ho, Gannon, Elliott
- Research – McIntosh, Knipp, Gombosi, Elliott, Jonas, Duncan
Baseline Topics

1. Current space weather observations, information, and forecasts utilized
2. Current technological systems or components affected by space weather
3. Current risk reduction and resilience activities
4. Future space weather information required (communication methods, observations, and forecast products (format, etc))
5. Future risk reduction and resilience activities
6. New or non-traditional sources of space weather data
7. Next generation technologies, research, instrument, and models to address space weather
User Needs Survey Open for Public Comment

- Paperwork Reduction Act Notice
- General public and other Federal agencies to comment on proposed, and continuing information collections, which helps us assess the impact of our information collection requirements and minimize the public’s reporting burden.
- 60 day public committee prior to submission to OMB. Closes Oct 17, 2022.
- There will be a second public comment period
- [Federal Register :: Agency Information Collection Activities; Submission to the Office of Management and Budget (OMB) for Review and Approval; Comment Request; User Needs Survey by the Space Weather Advisory Group](https://www.gpo.gov/fdsys/detail/PUBLS/HCD023-2022-00518.pdf)
Respondents will be asked questions about:

- their current use of space weather observations, information, and forecasts, technological systems, components or elements affected by space weather,
- current and future risk and resilience activities,
- future space weather requirements, and unused or new types of measurements or observations that would enhance space weather risk mitigation.
Tasked by the SWORM, SWAG members are currently compiling input

Tentatively planning a Fall meeting to gather input more broadly
  ○ Speakers from the community
  ○ Public comment

Also looking at other ways to get input more broadly
  ○ Annual conferences, workshops (AGU, AMS..)

Decadal survey white papers
Collaboration and Coordination

- Space Weather Advisory Group
- NASEM Space Weather Roundtable
- NASEM Heliophysics Decadal Survey
- NASA Space Weather Council
**SWAG**

Members: academic, commercial, nongovernment end users

Advise SWORM on:
- Facilitating advances in the space weather enterprise of the US
- Enabling the coordination and facilitation of R2O2R
- Improving the ability of the US to prepare for, mitigate, respond to, and recover from space weather phenomena
- Developing and implementing integrated strategy

Conduct user needs survey
Provide input National Space Weather Strategy

**Roundtable**

Members: academic, commercial, government (SWORM NSF, NOAA, and NASA ex-officio members - sponsors)

Two SWAG members
One Council member

Facilitate communication and knowledge transfer among government (SWORM), academic and commercial space weather communities to:
- Facilitate advances in space weather prediction and forecasting;
- Increase coordination of space weather R2O2R;
- Improve preparedness for potential space weather phenomena
SWAG

Members: academic, commercial, nongovernment end users

Advise SWORM on:
- Facilitating advances in the space weather enterprise of the US
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Conduct user needs survey
Provide input National Space Weather Strategy

NASA Space Weather Council

Members: academic, commercial, government

No overlap in membership with SWAG
One Roundtable member

Advise NASA via HPAC
- Interdisciplinary forum for soliciting and coordinating community analysis and input and providing advice

Conduct user needs survey
Provide input National Space Weather Strategy
Collaboration and coordination will be key

- Spoke at CSSP, NASEM space weather workshop, speaking here today, and will be speaking at AGU and AMS
- Creating invite list for SWAG meetings to include Roundtable and SWC chair/members
- Administrative meetings between SWAG, Roundtable, and SWC chairs and staff

We are all working towards one common goal: to prepare and protect against the social and economic impacts of space weather phenomena.
THANKS!
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www.weather.gov/SWAG
BACKUP SLIDES
§ 60606. Space weather knowledge transfer and information exchange

NOAA, NASA, and NSF, shall enter into an arrangement with the NAESM to establish a Space Weather **Government-Academic-Commercial** Roundtable to facilitate communication and knowledge transfer among Government participants in the SWORM, the academic community, and the commercial space weather sector to:

- facilitate **advances** in space weather prediction and forecasting
- increase **coordination** of space weather R2O2R
- improve **preparedness** for potential space weather phenomena
Space Weather Roundtable meetings will engage experts and stakeholders across disciplines and sectors, with a focus initially on those issues identified in the National Space Weather Strategy and Action Plan and the PROSWIFT Act that would benefit from greater engagement.

Examples include space weather benchmarks and scales, communication of risk, steps to improve R2O2R pathways, commercial space weather data buys, and resilience to severe space weather events.
Committee Composition

- About 15 members drawn from the government, public, and private sectors
- Membership may include subject matter experts; representatives from industries affected by space weather; government and other entities charged with forecasting space weather; representatives from the emergency response community; and experts on the social and economic impacts of space weather.
- NOAA, NASA, and NSF ex-officio members
NASA Space Weather Council

Established as a means to secure the counsel of community experts across diverse areas on matters relevant to space weather in support of the HPD.

- The SWC serves as a community-based, interdisciplinary forum for soliciting and coordinating community analysis and input and providing advice.
- It provides advice to the Heliophysics Advisory Committee (HPAC).

The SWC is a standing subcommittee of the HPAC. As such, the SWC reports to and is responsive to actions levied by the HPAC.

- SWC may seek scientific and programmatic input from the heliophysics and space weather communities at large on matters relevant to their actions.