National AI Research Resource Task Force
National Institute of Standards and Technology
U.S. Department of Commerce
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Comments on
Draft NIST Special Publication 1270:
A proposal for Identifying and Managing Bias in Artificial Intelligence

To the members of the National AI Research Resource Task Force:

STM, the International Association of Scientific, Technical and Medical Publishers, welcomes NIST's efforts to support the development of trustworthy and responsible AI, and in particular the draft *A Proposal for Identifying and Managing Bias in Artificial Intelligence* (NIST Special Publication 1270). As STM and its members are highly engaged as both users, creators, and enablers of AI, we appreciate the opportunity to provide comments on the draft and would welcome any additional opportunities to engage with NIST on the important questions raised by AI and machine learning.

AI is highly relevant for academic publishers, with publishers engaged with AI in many ways, including: as key providers of high-quality content, context and data; as users of AI in internal workflows and services for authors, editors, and reviewers; and as users of AI in external tools and services. Being fully aware of the need to consider issues related to trustworthy and responsible AI, with respect to its potential but also its risks, STM published a White Paper in May 2021 outlining best practice principles for an ethical, trustworthy and human-centric AI. We feel that this White Paper overlaps significantly with the content and recommendations of the NIST draft proposal and may be helpful to inform NIST's broader efforts on AI.

The points below provide comments on specific elements of the draft proposal for your consideration.

1. One goal of NIST's work on trustworthy AI is the 'development of a risk management framework and accompanying standards' (line 167). STM agrees that the further development of AI should be guided by and grounded in clear legal standards and sound ethical principles. At the same time, the development of an AI-enabling policy framework that fosters the development of community-based standards should, where possible, build on existing initiatives. Due to the fast-changing nature of the AI landscape, legislators are urged to avoid inflexible legislative tools. We recommend a policy framework that respects intellectual property and continues to incentivize investment in high-quality content, datasets, and curated databases that can be used in AI applications, which are crucial elements for a trustworthy AI. The involvement of external experts with a broad range of expertise and experience in AI to review policy, and potentially, individual AI processes is essential. STM is committed to work with all stakeholders on next steps and would welcome the opportunity to support NIST's efforts.
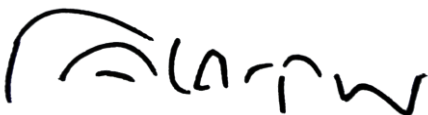
2. We fully agree that bias is an inherent risk of AI (206). Paragraph 3.4 of the STM White Paper is devoted to this risk, with a specific focus on its potential harm on science. We support the recommendation made in the report that a variety of stakeholders should be engaged as AI systems and processes evolve, ensuring diversity in all areas (e.g., race, gender, age, physical ability, etc)

3. In section 2 (The Challenge Posed by Bias in AI System, 233-356) various factors are mentioned that are also listed in STM's White Paper as essential elements to achieve trust in AI: reliable, unbiased and high-quality data, transparency on the level of algorithms and the application of AI technologies and systems; and the need to properly test AI. In the STM White Paper, a variety of suggestions are made to realize this:

    a. data transparency by providing metadata on the origin, provenance, and validation process of data

    b. an appropriate intellectual property framework to help incentivize the creation of high-quality IP that can be used as input data, as well as to protect pre-existing IP that might be used to create, train, calibrate, repair, or improve AI systems;

    c. Rigorous testing and evaluation, as well as the creation of feedback options for users, offered when they are made aware of the use of AI in tools, processes and services.

    We recommend the addition of such suggestions to the NIST Proposal or reference to other sources, such as the STM White Paper. We kindly refer to the White Paper for more information.

4. We strongly support the three-stage approach described in section 4 to enable AI designers and deployers to better relate specific lifecycle processes with types of AI bias and facilitate its effective management. This resonates with our recommendation that a trustworthy, ethical, and human-centric AI depends on the careful selection of data, design and testing of algorithms and their deployment, its monitoring and auditing, as well as the provision of feedback mechanisms involving a wide variety of stakeholders. Although it may be beyond the scope of the Proposal, we believe that designers and deployers may need additional detailed suggestions for practical implementation, and recommend that NIST convene involve individual publishers, STM, and other AI experts to support the development of such implementation guidance.

We look forward to working with NIST as well as other stakeholders on identifying and managing bias in AI, as well as further develop principles and standards that address the other potential risks of AI. We would welcome any additional opportunities to support your efforts and share our views.

Very truly yours,

Philip Carpenter
CEO

STM (The International Association of Scientific, Technical and Medical Publishers)
www.stm-assoc.org

About STM

At STM we support our members in their mission to advance trusted research worldwide. Our more than 140 members collectively publish 66% of all journal articles and tens of thousands of monographs and reference works. As academic and professional publishers, learned societies, and university presses, start-ups and established players, we work together to serve society by developing standards and technology to ensure research is of high quality, trustworthy and easy to access. We promote the contribution that publishers make to innovation, openness and the sharing of knowledge and embrace change to support the growth and sustainability of the research ecosystem. As a common good, we provide data and analysis for all involved in the global activity of research.

The majority of our members are small businesses and not-for-profit organizations, who represent tens of thousands of publishing employees, editors, reviewers, researchers, authors, readers, and other professionals across the United States and world who regularly contribute to the advancement of science, learning, culture and innovation throughout the nation. They comprise the bulk of a $25 billion publishing industry that contributes significantly to the U.S. economy and enhances the U.S. balance of trade.