

commonalities as scientists," the magazine's 75th anniversary presents an opportunity to reflect on the contributions that women have made during the lifetime of the publication and in the discipline it covers.

Perhaps a starting point could be to observe that the only mentions of "women" or "girls" in the article are literally in small print in two of the figures: the 1992 ad for Hubble Postdoctoral Fellowships and the word clouds.

Andrew G. White
(andrew.white@uq.edu.au)
University of Queensland
Brisbane, Australia

Expand STEM education for older adults

The US would greatly benefit from expanding educational opportunities in STEM (science, technology,

engineering, and mathematics) for people of age 60 and up. By 2060 about 30% of the US population will be above the age of 60—and the percentage of adults between 18 and 64 will have declined.¹ That raises questions about how society can sustain the workforce and current retirement systems. People of age 60 and up could be a resource, on either a paid or volunteer basis, that counterbalances the increasing shortage of younger people in the labor force. But to do that, we will need to place more emphasis on teaching and training for older adults.²

Older adults in the US who participate in formal educational offerings can choose from formats and programs at various types of places, including higher-education institutions, religious institutions, community organizations, nonprofit groups, and self-organized initiatives.

Studies have shown that learning at older ages has a positive impact on physical health, self-confidence, social inclusion, independence, and cognitive ability.³ In addition, STEM education could help older adults keep up to date with technological and scientific advancements. That is important not only because society needs older adults to continue participating in the workforce after retirement, but also because studies have shown that older adults score lower on science knowledge tests than younger generations. Meanwhile, science misinformation—and its potential to mislead voters—has only continued to spread. Given that older generations are more likely to vote, society would benefit from older generations having more STEM education.⁴

Policymakers and researchers need to pay more attention to the topic of participation, educational behaviors, and interests of older adults in education. The little existing research indicates that multiple factors, such as social class and gender, affect the likelihood of whether adults take part in lifelong learning in older age. Initial studies suggest that older adults participating in education tend to be white people with financial security.⁵ It is important to expand opportunities for population groups that are underrepresented for reasons beyond the individuals' control.

Recently we conducted a dedicated interdisciplinary workshop on STEM education for ages 60 and up. The event

brought together experts and decision-makers from different disciplines (<https://indico.phys.hawaii.edu/e/stem60plus>). Based on the discussions, we suggest the following action items:

- Increase research efforts focused on implementing lifelong STEM education effectively and develop tailored programs for different population groups.
- Expand STEM education programs for older generations.
- Make lifelong-learning opportunities widely accessible, especially to groups with low prior educational attainment.

The member societies of the American Institute of Physics can play a crucial role in facilitating discussion with politicians and the other STEM disciplines about investing resources into educating older adults.

References

1. J. Vespa, L. Medina, D. M. Armstrong, *Demographic Turning Points for the United States: Population Projections for 2020 to 2060*, US Census Bureau (March 2018, rev. February 2020).
2. A. Withnall, *Improving Learning in Later Life*, Routledge (2009); S. N. von Doetinchem, "Education in older and oldest-old age: A comparison between the United States and Germany," PhD thesis, U. Tübingen (2020).
3. W. D. Oswald et al., *Behav. Brain Res.* **78**, 67 (1996); K. Ball et al., *JAMA* **288**, 2271 (2002).
4. S. Padgaonkar, E. A. Schafer, *J. High. Educ. Outreach Engagem.* **25**, 111 (2021).
5. A. Kim, S. B. Merriam, *Educ. Gerontol.* **30**, 441 (2004); B. Findsen, M. Formosa, *Lifelong Learning in Later Life: A Handbook on Older Adult Learning*, Sense (2011); R. J. Hansen, E. M. Brady, S. P. Thaxton, *J. Contin. High. Educ.* **64**, 42 (2016).

Sandra von Doetinchem
(sandra.vd@eduworks.com)

Eduworks Corporation
Corvallis, Oregon

Philip von Doetinchem
(philipvd@hawaii.edu)

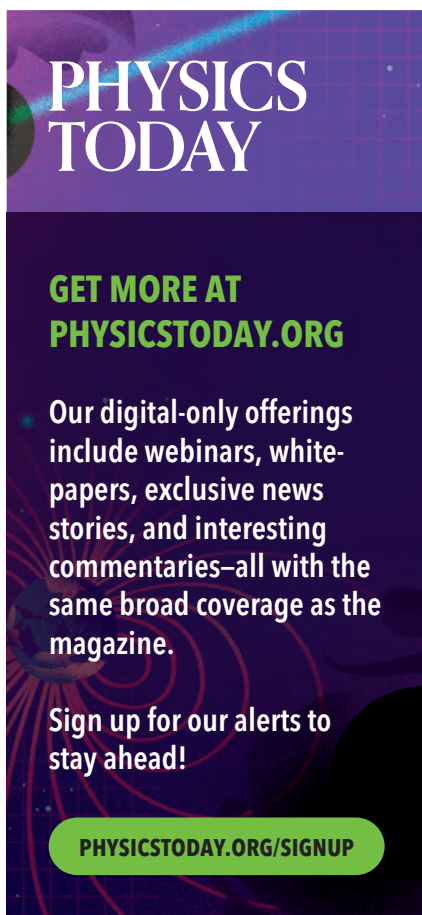
University of Hawaii at Manoa
Honolulu

Paul Mantsch
(mantsch@fnal.gov)

Fermi National Accelerator Laboratory
Batavia, IL

Correction

September 2023, page 20—The original story misstated the name of cryogen-free instrument manufacturer Bluefors. **PT**



PHYSICS TODAY

**GET MORE AT
PHYSICSTODAY.ORG**

Our digital-only offerings include webinars, whitepapers, exclusive news stories, and interesting commentaries—all with the same broad coverage as the magazine.

Sign up for our alerts to stay ahead!

PHYSICSTODAY.ORG/SIGNUP