

domestic and agricultural work, according to a 2004 *American Educator* article by Peter Irons. But Black children nevertheless understood the power of education and how it could be used for the betterment of one's physical, mental, social, intellectual, and spiritual livelihoods and experiences. Not only was education valued, but educated Black individuals were considered to be of great importance to the community. From the Reconstruction era to the late 1950s, they talked to the "white power structure," helped secure jobs for other Black people, wrote obituaries and letters of recommendation, initiated voter registration drives, and generally acted as protectors of the Black community's interests.

Thus it is not surprising that Adkins wanted to be a physicist. As a child, he had taken apart radios and clocks, exploded ants with lenses using the light of the Sun, set his house ablaze in exploration of the properties of fire, and read and reread the articles on relativity in his ragged copy of the *Encyclopædia Britannica*.

After his graduation from high school, Adkins's physics education journey spanned nearly a decade and a half, culminating in his receiving a doctorate in physics in 1955 from the Catholic University of America in Washington, DC. That journey was initiated by two major factors: Adkins's desire to comprehend the physical world and his need to give back to and uplift the community from which he came. All of that was accomplished within the restrictions imposed by being Black in the US.

Ronald E. Mickens
(rmickens@cau.edu)

Clark Atlanta University
Atlanta, Georgia

Knowledge transmission in medieval Spain

I enjoyed reading the article "Medieval weather prediction" by Anne Lawrence-Mathers in the April 2021 issue of PHYSICS TODAY (page 38). But one aspect of the author's description of the trans-

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mission of knowledge from the Islamic world to Latin Europe caught my attention. She states, "Territorial conquests by northern European forces in the Iberian peninsula of al-Andalus made librarians, scholars, and translators available to the new Christian rulers."

It is not easy to summarize in one sentence a complex historical process like the Iberian Reconquest, which lasted almost eight centuries. But during that Christian reconquest, periods of peace and tolerance between Christians, Muslims, and Jews were more common than periods of war and confrontation. In fact, some Leonese and Castilian kings' tolerance of Muslims and Jews facilitated a cultural exchange that allowed the philosophical¹ and scientific² renaissance of the Iberian kingdoms and the entire Christian West.

References

1. J. Vernet, *Lo que Europa debe al Islam de España* (What Europe Owes to the Islam of Spain), Editorial Acanalado (1999).
2. J. Samsó, *Astronomy and Astrology in al-Andalus and the Maghrib*, Ashgate (2007).

José M. Vaquero
(jvaquero@unex.es)
University of Extremadura
Mérida, Spain

► **Lawrence-Mathers replies:** José Vaquero is correct that the processes by which scientific knowledge was transferred in Christian kingdoms like those of León and Castile were unusually open and positive. The contrast with, for instance, the attitudes of the Norman conquerors toward Anglo-Saxon culture in England is striking. My sentence was

simply intended to recognize that those kingdoms would not have existed and lasted without the military side of what has been termed the Reconquest.

Anne Lawrence-Mathers
(a.e.mathers-lawrence@reading.ac.uk)
University of Reading
Reading, UK

Hackathon culture's maker potential

Toni Feder's item "Hackathons catch on for creativity, education, and networking" (PHYSICS TODAY, May 2021, page 23) captures the lively ambience of hackathons and sprints, which is familiar to those of us who have worked in engineering. It is provocative to see examples of that culture adopted by communities across the physical sciences, including quantum computing and astrophysics.

Hackathons signal a community's growing openness to rapid prototyping and iterative design as productive modes of inquiry. And when it comes to adopting that atmosphere in fundamental physics, I believe we're only seeing the tip of the iceberg.

First, while hackathons and sprints are bounded in time, their underpinning fast-paced and highly interdisciplinary culture—a staple of the maker movement—can be incorporated into an unbounded research agenda or even an entire institute. While each very distinctive, Arizona State University's Beyond Center, the Simons Foundation's Flatiron Institute (mentioned in Feder's article),

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