

do such basic things as operate a microwave, remote control, or graphic interface. On the other end of the spectrum is specialist expertise, which requires a decade or more of training, often as an apprentice gaining tacit knowledge through interactions with accomplished practitioners.

One of Collins's biggest contributions to science studies is the concept of interactional expertise. It can be attributed to a person who has obtained a certain level of fluency in a field even if he or she does not directly participate in experiments, theory building, or data analysis. His book *Gravity's Shadow: The Search for Gravitational Waves* (University of Chicago Press, 2004) is proof that Collins himself has gained interactional expertise by engaging with scientists for more than three decades.

Collins uses Joseph Weber as an example in *Are We All Scientific Experts Now?* to demonstrate the roles that tacit knowledge, community, and time play when judging mavericks in science. Weber claimed to have seen the first experimental evidence of a gravitational wave, but the community subsequently dismissed his claims, and he became a



tragic figure after about 1975. Collins points out that in the current internet age, Weber's papers would be accessible to anyone, not just scientists. However, he adds, being part of a specific scientific culture and community of specialists is the only way to truly contextualize such work—and then have a basis to ignore it. Collins missed an opportunity to contrast the Weber affair with the rather different case of Raymond Davis Jr, whose claim of detecting a solar neutrino flux much lower than that predicted by the standard solar model was challenged for decades even as Davis maintained his credibility in the community. He ultimately received the 2002 Nobel Prize in Physics “for the detection of cosmic neutrinos.”

Are We All Scientific Experts Now? makes the important point that when people demand that scientists in such contentious fields as climatology “show their work,” it is an act of subterfuge. When scientists do release their data, few elected officials or members of the general public have enough interactional expertise to make a sound judgment. More's the pity: Interactional expertise could be a powerful tool for

those in the political arena confronted with bogus scientific claims backed by the testimony of some maverick. Time and the messy scientific process may tell if the maverick scientist is a Weber or a Davis.

We can only hope—as Collins advocates for at the end—that more social scientists will take concrete steps to once again “elevate science to a special position in our society.”

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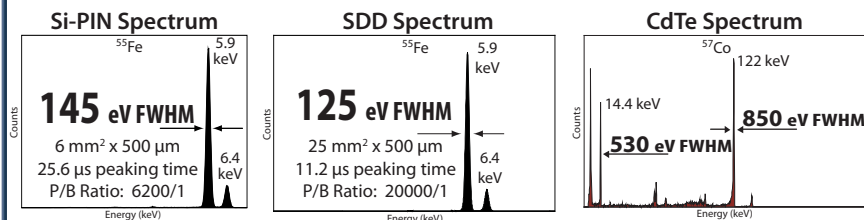
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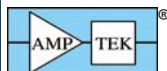
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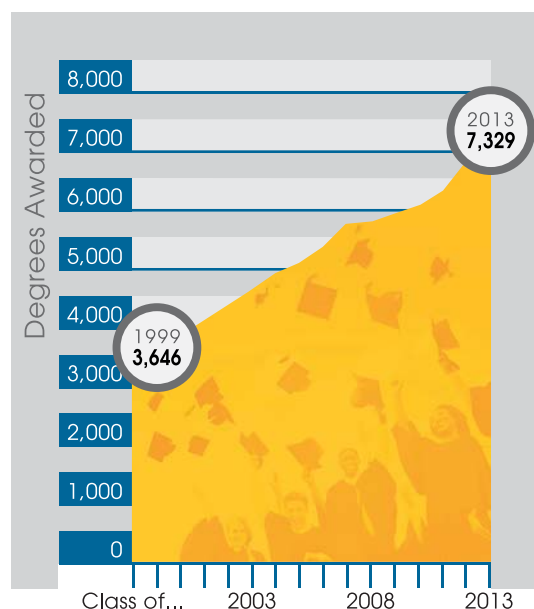
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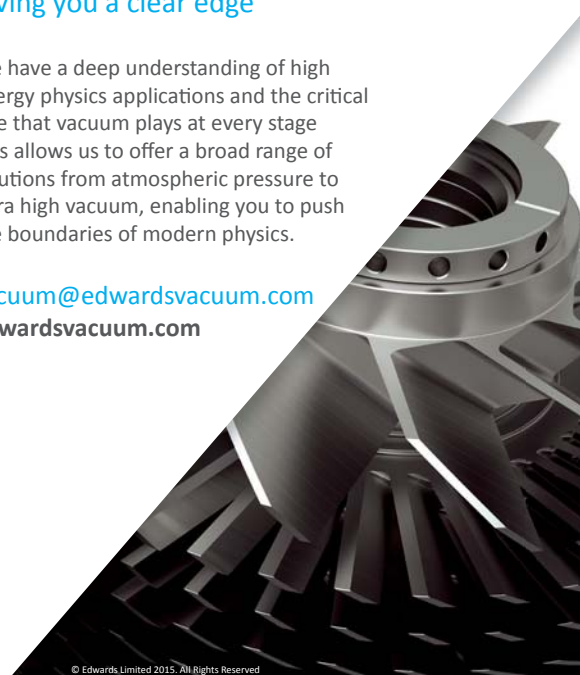


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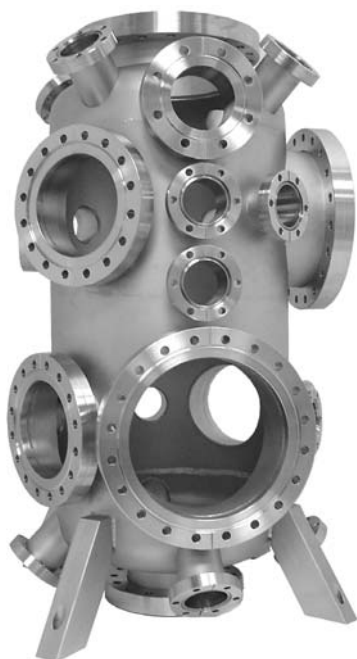
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Ultrafast @ TOPTICA

- ▶ FemtoFiber pro (488-2200 nm)
- ▶ FemtoFiber smart (780/1030/1064/1560 nm)
- ▶ FemtoFiber dichro (dual-color 780 + 1030 nm) **NEW**

