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(I) Quo vadis PhD? The future(?) of graduate studies

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Graduate studies in physics (and other fields) is going through an existential crisis. The belief that the PhD was a solid pathway to an academic career was never grounded in reality (e.g., in the US in 18-19, 1903 PhD PhDs were conferred while only 369 new tenure-track positions advertised[1]). In recent times, the sharp increase in the cost of living without corresponding funding improvements forces us to question the value of the MSc and PhD, especially if it now requires students to take on outside part-time employment or pile on tuition debt. The traditional graduate degree is based on the student-supervisor relationship with the potential of a wonderful mentorship experience but with considerable risk of disfunction exacerbated by the intrinsic power imbalance. With no meaningful feedback channels, graduate training practices and student deliverables have tended to remain static, with little thought to what a student needs now in 2023 (or in the future). The NSERC Collaborative Research and Training Experience program provides a sandbox to experiment with graduate training, with its focus on student mobilization (national and international), professional skill development, interdisciplinary research, and collaboration between academia and industry. Results from our CREATE-Materials for Advanced Photonics and Sensing will be discussed, included interventions that proved transformative for some students and other efforts that fell flat.
[1] AIP reports "Faculty Job Market in Physics and Astronomy Departments""Trends in Physics PhDs"

Keyword-1

graduate studies

Keyword-2

program design

Keyword-3

professional skills

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