

Undergraduate Research: The Initiative, Trend and Reform

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The research isn't finished until published while the students must actively engage in all facets of scientific and professional culture.¹This implies they must comprehend the profession's ideals while the students are taught the value of study, many fail to realize that study is not finished until it is printed.² Releasing, peer review, and prioritization are all values of researchers that are not taught in textbooks, typical laboratories, or mass lectures.³ Students are sometimes included as co-authors in professional publications, although they are usually acknowledged. Rarely do students actively participate in both writing and peer review while the peer review and publishing will not be typical expectations of these essential encounters until then⁴.

As science education includes more inquiry-based activities across the curriculum, students receive vital opportunity to take active roles in scientific research through academic research courses and summer projects, as well as within regular lab courses.⁵ While some hardworking student researchers may experience the procedure of publishing their study in a research journal, the nature of most student research projects provides results that are of inadequate depth and/or scope to hold alone as journal articles.⁶ Consequently, students may lose chances to learn the reviewing, rewriting, or editing abilities that are critical for success in research and publishing⁷.

Many student research projects explore innovative problems using cognitively and empirically sound methodologies. Furthermore, undergraduate research requires substantial time, effort, and money from students, advisers, and institutions, and deserves attention.⁸It ends with an advisor or department receiving a thesis or paper. Teachers may help students contribute to the scientific literature by include peer-review in the writing process⁹. It also does not completely represent the scientific publication process, where articles must be peer-reviewed and updated to answer peer-reviewed critiques before being published into the research literature¹⁰.

Numerous academic institutions have launched undergrad journals to inspire their students to write, evaluate, and edit while the others provide comparable publications for student writers from any college who want to reach a larger readership¹¹. Despite this, majority undergraduates remain excluded from three critical aspects of research: publishing, peer review, and funding. Members and leaders of medicine and science professional groups must aggressively address this gap. Supporting peer-reviewed publications serving the student community is a natural extension of our commitment to improve undergraduate education and recognizing the real accomplishment of those undergraduates who actively engaged in the research activities we sponsored¹².

In the internet era, many of the publications that specialize in research work were first published in electronic form¹³. While the internet has made publishing more efficient, less costly, and more accessible to a larger number of people, it has also enabled students from a variety of schools and institutions to join editorial boards and participate actively in all parts of publication.¹⁴ Consequently, students now have a greater variety of options to engage in all areas of the publishing process - whether as writers, reviewers, or editors¹⁵. Undergraduate journals, as a result, enable young researchers develop critical writing, rewriting, and reviewing abilities that will help them become more successful writers,

reviewer, publishers, and researchers as they go through their careers^{16,17}.

Multi-system knowledge will assist faculty focus on overall involvement, inclusiveness, and effectiveness as they plan and execute new student research initiatives.¹⁸Considering that only a tiny percentage of student research results in publications, it is critical to guarantee that no groups are left out of the research process and that all students have equal access to publishing opportunities. Planning process that accounts for inclusivity and connected to multiple dynamics will promote long-term student achievement as the college-aged population changes demographically in the next decade. Those of us who support undergraduate research publishing confront two challenges. First, many undergraduate research supervisors may be scared or ashamed by their own small publication histories. Second many scientific students struggle with writing. We must incorporate students in all aspects of scientific knowledge generation, including publishing. To promote undergraduate student research publishing, we encourage professional organizations in the medical sciences to adopt this as a standard expectation.

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