The integrity of authorship of articles and educational programs in the academic media is increasingly undergoing scrutiny. Initially, this scrutiny comes from within, whereby editors as well as reviewers of submissions ask questions regarding authorships, potential conflicts of interest of the listed authors, and support of either the research standing behind the submission or the actual creation of the final product. Subsequently, scrutiny comes from the outside, whereby the lay press also has weighed in on the issue of potential lack of integrity or possible conflicts of interest with regard to academic publications; The New York Times has offered examples of potential concern, extensively using the term ghostwriting.1

It has been suggested, at least in some instances, that the leadership of highly respected journals is not always aware of potential external influences that may contribute to the stream of events ultimately leading to the acceptance and publication of an article in a peer-reviewed journal. The fact that our journals have a major impact on the practice of medicine makes such outside influence especially troubling, even more so if these outside influences are not fully and clearly acknowledged. We have a serious responsibility, both to our readers and to our patients, to provide information that is forthright and not adulterated or potentially tainted through a perception of outside interests. Although journals have disclosure forms and ask a variety of questions regarding sponsorship, conflicts of interest, and verification of authorship, unacknowledged industry sponsorship remains a concern for this and other journals. Even in the presence of such disclosure forms, how are editors and readers to be sure outside interests are properly identified? Journals are not investigative bodies, but they must be proactive in encouraging authors to be forthright on the one hand, and ensure adequate disclosure on the other. Without integrity of authorship, avoidance of conflicts of interests, and complete transparency with regard to the entire process of publication, the high esteem vested in journals such as Cancer, and nurtured over decades, could be placed in jeopardy.

Notwithstanding these considerations, as those directly or indirectly entrusted with the integrity of dissemination of new scientific knowledge, we must remain sensitive to the fact that the creation and evolution of a scientific contribution to a medical journal is complex. Many authors must seek help from various sources in the preparation of their manuscripts; this help may take many forms, and much is acknowledged through joint authorship and credits for collaboration with regard to statistical analysis or comparison of complex clinical trials. In the current era, it is unusual to find major articles with single authorship. Most medical journals, Cancer included, use the authorship criteria provided by the International Committee of Medical Journal Editors. These guidelines state that, to qualify as an author, the following 3
criteria must be met: the individual 1) made a substantial contribution to the conception and design, acquisition of data, or analysis and interpretation of data; 2) drafted the article or revised it critically for important intellectual content; and 3) approved of the version to be published. Many who assist do not qualify as authors but should be acknowledged; these mostly include contributions in the form of manuscript preparation and editing, and the creation of illustrations and tables.

Exactly where are we to draw the line between the professional writer employed in a department of scientific publications at a university center who helps an author with syntax and supportive material, versus a writer hired by industry, who may have a vested interest or who may impact on content, thereby altering the focus of an article to serve the sponsor? When contributors to an article are properly acknowledged and their roles identified, the line is sufficiently clear; after a submission has been carefully scrutinized (first by the author, then by the editor, later by those selected to peer-review the contribution, and finally by the reader), no doubt should linger with regard to relationships, conflicts of interest, and loyalties. However, when an industrial entity expends resources to help drive an article to publication without appropriate disclosure of interests, readers (and publishers) may fall into a trap created by the disconnect between their perceptions of objectivity and the reality of possible ulterior motivations that may favor those who have financially supported the submission.

A large part of the dilemma regarding assistance in the creation of scientific articles is one of intent; the chain of integrity must be transparently maintained and assured at every step in the process. The intention must be to disseminate information that is objective, unbiased, and untainted by actual or perceived conflicts of interest. Ghostwriting (ie, writing by an unacknowledged author), occurring at the instigation of an entity that may benefit from a shift away from total objectivity, creates a perception of possible tainting. Professional journals cannot allow such perceptions to compromise their reputation and integrity; we owe it to our readers and our patients that such practices not be allowed to occur.

Of course, it must also be recognized that industrial entities often make genuinely important contributions to the scientific literature based on access to large data sets not available otherwise or provide the only source of information regarding adverse events. How these data are used, when it is appropriate to contribute, and how such contributions are to be promulgated, must be fully transparent. Contributors must completely acknowledge authorship, sponsorship, and editorial input. Standards for the future must be explicit and unambiguous.

Criteria should now include the following guidelines:

- For articles contemplated by a business entity that potentially stands to benefit from such a contribution, both the sponsoring organization and the agency involved in the drafting should be identified and the extent of their various involvements must be fully acknowledged.
- If the project is supervised or overseen by a physician who takes responsibility for the content, the role of that individual as well as his or her conflicts of interest must be disclosed; this disclosure must also note if the responsible physician was directly or indirectly compensated for his or her work on the manuscript.
- Any arrangement whereby a sponsoring entity has the prerogative to review or alter a manuscript and the extent that a manuscript was changed by the sponsor should be made known to both the reviewers and to the readers in the form of a notice to that effect that accompanies the print and electronic publication.

Contributors should anticipate that specific questions aimed to secure the above tenets will now be asked of them. Cancer places paramount importance on preserving the integrity of our publication. Manuscript submissions containing vague or overly simplified disclosures will be returned to authors for additional clarification. It is not the policy of this journal to discourage articles with industry support; research contributions funded by the private sector are critical to advancing science. The key is to ensure that editors, reviewers, and the readers are unequivocally aware of the entities responsible for the science. Readers need assurances that the highest level of integrity underlies the interactions between manuscript authors and those holding contributory relationships. This will be done not merely to assure our readers that the contents of Cancer are not tainted by contributions that are de facto marketing activities in disguise. The real reason goes far beyond this; Cancer and other journals are raising the standards of disclosure simply because it is the right thing to do.

**REFERENCE**