Providing Appropriate Credit to Authors in Publication

Case No. 09-5

Facts:

Engineer A, a professional engineer with expertise in biomedical engineering and a member of a research and development team composed of engineers from several fields of engineering, including materials engineering, chemical engineering, and biomedical engineering, as well as molecular biologists and physicians, is to develop a new implantable drug. Engineer B is also a biomedical engineer and a member of the team. The team members have agreed on the "default expectation" (i.e., the expectation to be fulfilled unless there are strong reasons for different expectations) that the order of the names on the author list of coauthored papers will reflect the discipline of the publication for which the paper is written. For example, normally any paper for a chemical engineering journal would have the chemical engineer as the first author and the chemical engineer would initiate the writing of that paper with whichever collaborators possessed the relevant knowledge. Any prestigious publication that crosses disciplines (e.g., *Science* or *Nature*), would be expected to list the authors in alphabetical order. In all publications, the work of any team members who are not coauthors will be cited or acknowledged wherever relevant.

Engineer A is requested by a prestigious biomedical publication to author a paper on the work of the team, focusing on the biomedical aspects of the team's efforts. Engineer A drafts the article and lists himself as the sole author, then acknowledges Engineer B's work and the other team members' work but not as authors, and only after submitting the article notifies the members of the team.

Question:

Was it ethical for Engineer A to draft the article and list himself as the sole author and then acknowledges Engineer B's work and the work of others involved in the team effort?

References:

Section I.5.	-	*NSPE Code of Ethics:*	*Engineers, in the fulfillment of their professional duties, shall avoid deceptive acts.*
Section III.3.c.	-	*NSPE Code of Ethics:*	*Consistent with the foregoing, engineers may prepare articles for the lay or technical press, but such articles shall not imply credit to the author for work performed by others.*
Section III.9.	-	*NSPE Code of Ethics:*	*Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.*
Section III.9.a.	-	*NSPE Code of Ethics:*	*Engineers shall, whenever possible, name the person or persons who may be individually responsible for designs, inventions, writings, or other accomplishments.*

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Discussion:

The question of providing appropriate credit for scientific and engineering research and related work performed as part of a team is a critical ethical issue. As earlier Boards of Ethical Review have noted, the importance of this issue is more than merely crediting contributions of individuals who have performed work in an area of engineering and scientific research. In actual fact, funding decisions for research and development of various technologies are vitally affected by the credit and acknowledgments.

Earlier Boards of Ethical Review have explored these issues in considerable depth, For example, in BER Case 75-11, an engineer performed certain research and then prepared a paper on an engineering subject based on that research, which was duly published in an engineering magazine under his byline. Subsequently, an article on the same subject under the name of a second engineer appeared in another engineering magazine. A substantial portion of the text of the new article was identified word-for-word from the article authored by the original engineer, who contacted the second engineer and requested an explanation. The second engineer replied that he had submitted with his article a list of six references, one of which identified the original article, but the list of references had been inadvertently omitted by the editor. He offered his apology for the mishap because his reference credit was not published as intended. In ruling that the second engineer did not act ethically by his actions, we distinguished research from plagiarism. We offered that a "quotation from many sources is research" and a "quotation from a single or limited number of sources" is plagiarism. However, in either event, it is contemplated that the author will identify and give credit to his sources—single or many. In addition, we noted the important belief of the second engineer that he would have been without fault if the list of references had been published at the end of the article. This belief represented a lack of understanding of the requirements of the NSPE Code. Merely listing the original work A in the references to various articles only tells the reader that the author had consulted and read those cited articles. It does not tell the reader that a large portion of the text is copied from the work of another.

Later, in BER Case 83-3, an engineer submitted a proposal to a county council following an interview concerning a project. The proposal included technical information and data that the council requested as a basis for the selection. Smith, a staff member of the council, made the proposal available to another engineer. This engineer used the proposal without the author's consent in developing another proposal, which was subsequently submitted to the council. The extent to which the second engineer used the original information and data is in dispute between the parties. In finding that it was unethical to use the first engineer's proposal without consent, we indicated that the second engineer had an obligation to refuse to accept the proposal from Smith and also noted that his actions constituted unfair competition by improper and questionable methods, in violation of NSPE Code Section III.7.

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More recently, in BER Case 92-7, the XYZ Company, headed by Lead Engineer, offered to provide funding to professors in the chemistry department of a major university for research on removing poisonous heavy metals (e.g., copper, lead, nickel, zinc, chromium) from waste streams. The university then agreed to contract with XYZ Company to give exclusive use of the technology developed in the field of water treatment and wastewater stream treatment. Under the agreement, XYZ Company would provide a royalty to the university from profits derived from the use of the technology. Also, a group of the university professors organized QRS, a separate company, to exploit applications of the technology other than the treatment of water and wastewater.

At the same time that the university research was being conducted, XYZ Company continued to conduct research in the same area. Performance figures and conclusions were developed. XYZ Company freely shared the figures and conclusions with QRS. At the university, a professor of civil engineering wanted to conduct research and develop a paper relating to the use of the technology to treat sewage. He contacted the professors in the university's chemistry department. The chemistry professors provided XYZ Company's data for use in the research and paper. The professors did not reveal that the data was generated by Lead Engineer and XYZ Company. The Professor's paper was published in a major journal. Lead Engineer's data was displayed prominently in the paper and the work of XYZ Company constituted a major portion of the journal. The paper credited two of the chemistry professors as major authors along with the Professor. No credit was given to Lead Engineer or XYZ Company as the source of the data and the funds that supported the research. After publication, the Professor learns about the actual source of the data and its funding.

In concluding that the Professor had an obligation to request that the journal publish a clarification of the matter, explaining how the situation occurred along with an apology for any misunderstanding which may have arisen as a result, the Board noted that while the Professor did not knowingly fail to credit Lead Engineer or XYZ Company for their contributions to the research which formed the basis of his paper, had he made more of an effort to substantiate the sources contained in his paper, he may have been able to identify those sources.

Turning to the facts in the present case, it is this Board's view that, much like the circumstances in BER Case 92-7, while Engineer A may have intended to comply with the terms of the "default expectations" agreement among the team members, he did not meet the spirit or the intent of the agreement. As one of several members of the team, Engineer A had an obligation to fully disclose and openly discuss the prestigious biomedical invitation to author a paper on the work of the team. Even though the paper was to focus on the biomedical aspects of the teams efforts, Engineer B was also a biomedical engineering member of the team who presumably contributed significantly to

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the work of the team, and depending upon all of the facts and circumstance, may have elected to coauthor the paper with Engineer A and be listed as a coauthor.

Moreover, since the prestigious biomedical journal requested that the article focus on the work of the team, it may have been appropriate to list for the authors in alphabetical order as stated in the "default expectations" agreement. Engineer A's decision to independently assume responsibility for the article without first conferring with the other team members was inconsistent with Engineer A's obligations under the NSPE Code of Ethics.

Conclusion:
Engineer A had an obligation to fully disclose and openly communicate the prestigious biomedical publication's invitation to author a paper on the work of the team with all of the team members and to not list himself as the sole author of the article without first conferring with the other team members.

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