

Teaching Time Savers: Student-Written Executive Summaries

Susan Martonosi

At the end of advising an undergraduate research experience, be it a summer REU or an independent study during the school year, I generally have the students write a technical report describing in detail the work they have done. That is, I think, fairly standard. In addition to this technical report, however, I have them write a one or two page *executive summary*.

Written for a non-technical audience, the executive summary provides a brief description of the problem and summarizes the methodology and results, much like an engineer might brief a client on the outcome of a project. As an operations researcher, my research is application-driven, and the final consumer of the research is generally not another mathematician. Thus, my initial goal in assigning the executive summary was to teach the students how to explain (and sell) their findings to a non-technical audience.

In addition to this educational goal for having students write executive summaries, I have come to discover that it has some time-saving benefits for myself.

Writing grant reports: Many undergraduate research experiences are supported by internal grants that require a short report be submitted at the end of the granting period describing the results of the research. The executive summary, written by the student recipients of the grant, is a great way to demonstrate the students' involvement in the research. For some grants, it is sufficient for me to submit the summary directly with only a cover letter.

Preparing for conferences: Re-reading the executive summary before writing conference abstracts and preparing talks is a quick way to jog my memory of a project. Because I guide the students on the writing of the summary, I can reuse that structure when outlining a presentation.

Advertising research positions: I give the executive summaries to students interested in doing research with me so that they can get a feel for the type of work they would be doing. These summaries can also be posted on a research web site to advertise my research group and attract additional students.

Preparing promotion and tenure materials: Including the executive summaries in promotion and tenure portfolios can demonstrate, in a way that a list of student names on a CV cannot, that the undergraduates came away from their experience understanding deeply the topic of their research and able to write clearly and eloquently about their accomplishments.

It takes approximately one hour to read, suggest revisions, and discuss a draft executive summary with the students. I have found that the time saved is a few hours per summary because it streamlines report-writing and helps me get new student researchers up to speed on the project. Writing executive summaries teaches students a useful communication skill and helps me out as well.

Time spent: one hour per summary.

Time saved: Three + hours per summary. 🍷

Susan Martonosi is Assistant Professor of Mathematics at Harvey Mudd College and a Project NExT Fellow. She applies operations research methods to solve problems in homeland security, such as resource allocation and social network disruption.

Teaching Time Savers are articles designed to share easy-to-implement activities for streamlining the day-to-day tasks of faculty members everywhere. If you would like to share your favorite time savers with the readers of MAA FOCUS, then send a separate email description of each activity to Michael Orrison at orrison@hmc.edu. Make sure to include a comment on "time spent" and "time saved" for each activity, and to include pictures and/or figures if at all possible.