



# General Education Earth, Astronomy and Space Science College Courses Serve as a Vehicle for Improving Science Literacy in the United States.

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## Abstract

Every year approximately 500,000 undergraduate college students take a general education Earth, Astronomy and Space Science (EASS) course in the United States. For the majority of these students this will be their last physical science course in life. This population of students is incredibly important to the science literacy of the United States citizenry and to the success of the STEM career pipeline. These students represent future scientists, technologists, business leaders, politicians, journalists, historians, artists, and most importantly, policy makers, parents, voters, and teachers. A significant portion of these students are taught at minority serving institutions and community colleges and often are from underserved and underrepresented groups, such as women and minorities.

students can benefit from the effective implementation of interactive learning strategies.

Members of the Center for Astronomy Education (CAE) at the University of Arizona have been developing and conducting research on the effectiveness of instructional strategies and materials that are explicitly designed to challenge students' naïve ideas and intellectually engage their thinking at a deep level in the traditional lecture classroom. The results of this work show that dramatic improvement in student understanding can be made from increased use of interactive learning strategies. These improvements are shown to be independent of institution type or class size, but appear to be strongly influenced by the quality of the instructor's implementation. In addition, we find that the positive effects of interactive learning strategies apply equally to men and women, across ethnicities, for students with all levels of prior mathematical preparation and physical science course experience, independent of GPA, and regardless of primary language. These results powerfully illustrate that all

## 5. Equations

Below, you will find examples of two equations. You should use an equation editor of your word-processing program in order to include your equation(s). The equation number should be placed at the right side of the column and all equations should be consecutively numbered.

$$a^2 + b^2 = c^2 \quad (1)$$

$$E = m \cdot c^2 \quad (2)$$

## 6. Summary and Conclusions

After having finished your paper in your word-processing program, please create a respective pdf file out of the document. The correct page settings of 237 (height) x 180 (width) mm are included in the template document. **Please make sure that the generated pdf file actually has a page size of 237 x 180 mm.** This is the only way to guarantee the proper inclusion of your paper in the Copernicus Office database. Please note that you are asked to upload a pdf file during the abstract submission in Copernicus Office. No other file type than .pdf is accepted for the file upload. The actual citation header will be added automatically!

## Acknowledgements

The Acknowledgements section should not be numbered. Here, you may include all persons or institutions which you would like to thank. We recommend that the abstract is carefully compiled and thoroughly checked, in particular with regard to the list of authors, **before** submission.

## References

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