



## Proposal Status | MAIN ▶

**Organization:** University of Texas at El Paso

### Review #2

**Proposal Number:** 0953339  
**NSF Program:** Numeric, Symbolic, and Algebraic Computation  
**Principal Investigator:** Ceberio, Martine C  
**Proposal Title:** CAREER: Symbolic-Numeric Constraint-Based Solutions for Real-World Scientific Problems  
**Rating:** Very Good

### REVIEW:

What is the intellectual merit of the proposed activity?

The suggested research and educational work will contribute to the advance of constraint based solution techniques and to their education. The applicant promises to devote extra efforts to help minorities (Hispanics and women) in computer science related education on several levels (high school, UGrad, PhD).

The research part of the project seems to be realistic, and well fitting to the PIs experience. She is definitely well prepared for the aimed research. Still, her publication record lacks high impact scientific journal papers.

NCS and the aimed research subfields are definitely (as described by the applicant) in need of further research work, and they are more and more important in the solution of real life problems. The aim of having a Matlab package for this purpose is also welcome. The grant support would certainly contribute to realize most of the listed tasks. The planned research structure, and also the mobilizing of the students and schools is realistic and would have a positive effect.

Based on the publications of the applicant, it is to be expected that the aimed amount of papers can be achieved within the project.

What are the broader impacts of the proposed activity?

The anticipated impact of the project is substantial, thanks too the wide dissemination plans involved. The educational activities on many levels of El Paso schools and UTEP provide a guarantee for that.

It is unclear for the reviewer however, whether the strengthening of the participation of women in CS studies is to be forced as suggested. The well documented proposal gives evidence on the low level participation of females in CS, still it is not supported by data or sociological literature whether a larger ratio of women in CS would add to the quality of life, or to any other reasonable aim. Still, I assume it is a well based aim.

### Summary Statement

The proposal of Martine Ceberio for research on the Symbolic-numeric constraint-based solutions for real-world scientific problems is well written, realistic, and it deserves the support of NSF. I am confident that the grant will be utilized in an efficient and effective way, and the results will contribute to substantial development of computer science knowledge and problem solving capabilities of the involved students (and especially to the aimed minorities of women and Hispanics).

I classify the application as a high quality proposal in nearly all respects; it should be supported if at all

possible.

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