

Call for Proposals: Molecular Simulation Modules

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We are soliciting proposals for molecular simulation modules to be developed with support from a CCLI grant from the National Science Foundation.

The aim of a molecular-simulation module is to provide a microscopic perspective on macroscopic phenomena with the purpose of improving the instruction of topics often encountered in engineering and science curricula. The teaching of thermodynamics, transport, materials and other courses often requires students to develop familiarity and understanding of macroscale phenomena that might be more intuitively understood by considering their origins in molecular-scale behaviors. This connection is difficult to make formally, but with judicious use of molecular simulation such intuition might be gained. With simulation the students may interact with and observe molecular phenomena and conduct “measurements” that can then be interpreted with the macroscopic tools taught in their classes.

We think that the best source of ideas for such modules would come from the community of engineers and scientists who are engaged in research and education. The problem is that this group often lacks the skills or interest needed to develop a robust, user-friendly, and pedagogically sound molecular simulation module. Our solution to this problem is to team with these parties to do the development needed to design, produce, and assess the module in the classroom. You provide the idea and background information and with your guidance we develop the module.

Thus we are requesting proposals from the engineering and science community for ideas and assistance in developing new molecular simulation modules. Our NSF CCLI grant is structured to permit us to award up to \$5000 for the support of the efforts of such “module consultants” whose proposals are selected for development. These funds are paid directly to the consultant, as a fee, and are not awarded the consultant's institution (unless so requested).

For additional details and information about the application procedure, go to <http://www.etomica.org/app/modules/solicitation.html>