Mercoledì 31 ottobre 2018 alle ore 15:00
nell’aula F del Centro Interchimico

la Dr.ssa Nicole Graulich
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terrà il seminario dal titolo:

Analyzing student mechanistic reasoning through the lens of a mechanistic framework

Abstract: Research in organic chemistry education has documented that students in organic chemistry often rely on rote memorization and are missing a conceptual understanding when learning and dealing with mechanisms. Not much is known about student productive resources that correspond to the nature of mechanistic reasoning in the discipline. Given that every type of reasoning is shaped by the subject under consideration, we developed a framework, based on accounts from the philosophy of science. This discipline-oriented perspective on mechanistic reasoning informed the qualitative analysis of existing data and the design and analysis of a larger interview study to capture student causal complexity. We found that students often used static instead of dynamic approaches without knowing why this can be permitted in some scenarios. In unfamiliar contexts, more complex modes of reasoning correlated with higher success. When students were explicitly asked for an energetic answer, they connected their structural and energetic accounts, however, connections were relatively weak. We also wanted to know how student mechanistic reasoning changes with use of a scaffold constructed based on our theoretical framework. With help from the scaffold, students considered additional, useful information in their reasoning. Thus, our findings support the necessity for teaching students a general structure of mechanistic reasoning.

La presenza della S. V. sarà molto gradita

Il Direttore del Dipartimento
Prof.ssa Marina Gobbo
Michele Maggini