

UNIVERSITÀ DEGLI STUDI DI TORINO

I@UNITO – Visiting Scientists

Scientific area	Scientific responsible	Host Department	Type of activity	Start of mobility	<i>Language</i>
Chemistry	Elena Ghibaudi	Chemistry	Research and scientific exchange	June-July 2017 (provisional)	English
Type of fellowship	Senior (equal or more than 40 years old) 1 month				
Title of the research project	The problem of the reduction of chemistry to physics as a paradigm of a complex vs. reductionist views of chemistry				
Description of the research project	<p>The research project pertains to the epistemology of chemistry and focuses on issues related with the key-question of the reducibility of chemistry to physics. This unresolved problem has been tackled by several philosophers of science and it is strictly related with the issue of the mutual epistemic and cognitive independence of distinct scientific disciplines. The problem is crucial as distinct epistemic positions towards this issue imply deeply different views on the cognitive content of scientific disciplines, on their mutual relationships and, in the end, on their interpretation of the material world. More specifically, the question of the reducibility of one discipline to another entails taking a stance between a complex vs. a reductionist view of reality.</p> <p>Within the frame of chemical knowledge, the problem of reduction has implications for both research and teaching. In fact, it is related with the debate over several issues relevant to chemical science; namely: i) the relationships between classical thermodynamics and statistical mechanics, taken as distinct formal systems; ii) the relationship between experimental and computational practices and the knowledge generated by them; iii) the conception of the fundamental chemical unit, the molecule, as a complex system and the relative implications for both research and teaching; iv) the evolutive character of chemical knowledge as a sign of the unity of sciences; v) the truthful vs. plausible character of scientific knowledge.</p> <p>Distinct epistemological positions over these issues entail radically distinct approaches to chemistry teaching and chemical research.</p> <p>This research exchange with a scientist exhibiting a very high scientific profile in the field of the philosophy of chemistry is expected to promote the awareness of the chemical community about the cultural value of the scientific knowledge generated by chemical research as well as the nature of the cognitive practices applied in lab research.</p>				
Profile Description	The visiting researcher is expected to be a recognized expert in both philosophy and history of chemistry. It is required to have a specific expertise (witnessed by an adequate publication record) on the problem of reductionism in chemistry.				
Research objectives	The main objective of this scientific exchange is to compare the positions of the Turin group and of the visiting scientist as regards the problem of the reducibility of chemistry to physics, based on specific study-cases drawn from the history and the epistemology of chemistry. This is expected to lead to a common publication to be sent to a journal specialised in the philosophy of chemistry.				

	<p>During the stage, the visiting researcher is expected to give seminars on issues related with the epistemology of chemistry, especially addressed to PhD students of the Science and Innovative Technology PhD School as well as to researchers and students of the Chemistry Department of the University of Torino. In addition, in order to foster fruitful exchange of ideas within the chemical community, we plan to organize a Colloquia on the Philosophy of chemistry that will gather in Turin several Italian and French experts in field.</p>
Website and Contact	<p>http://www.chimica.unito.it/do/docenti.pl/Show?_id=eghibaud;sort=U2;search=;hits=247 E-mail: elena.ghibaudi@unito.it</p>