

*Post Doc position on*

**Logistics of home health cares**

- Host lab: LIMOS CNRS UMR 6158, ROGI-CIS team, <http://www.emse.fr/spip/-Departement-genie-industriel-.html>
- Location: Ecole des Mines de Saint-Etienne, France
- Supervisor: Professor Xiaolan Xie
- Funds: Grant from the Labex IMobS3 project on intelligent mobility solutions
- Duration: 12 month, starting ASAP
- Candidate profile: PhD. degree obtained in Operations Research, Industrial Engineering or Computer Science, expertise in Transportation, Logistics, Combinatorial Optimization, Optimization under uncertainty.
- How to apply: Send an email to [xie@emse.fr](mailto:xie@emse.fr) and attach to: a resume, a cover letter, 5 publications (published or submitted), the electronic version of your PhD. thesis (if possible), recommendation letters or contact information of three referees.

Description of the research activities:

This project addresses the logistics of medicines, equipments and bio samples in home health care structures (HHHC). It addresses (i) the delivery of medicines and equipments to patients' homes from pharmacies of HHHC and/or hospitals; (ii) the pickup of bio samples from patients' homes to medical laboratories; (iii) the collect of unused medicines, equipments and medical wastes.

Logistic issues addressed by this project include: (i) weekly schedule of visits to patients; (ii) vehicle routing plan; (iii) real-time control to face unexpected events. This research aims at taking into account treatment plans of patients, home care planning, availability and preferences of patients, and drug collection and packaging at HHHC's pharmacy. Special attention will be paid to take into account random events such as emergent requirements of medicines and bio tests.

This work extends existing ones, including our current work, which deal mostly with deterministic vehicle routing problems. We plan to combine vehicle routing approaches with stochastic optimization methods like Monte Carlo optimization, optimization via simulation, robust optimization.

This research will be conducted in close collaboration with HHHCs of the Auvergne and Rhone-Alps regions.