



Marc Garbey, expatriate researcher, is a link between France and Texas

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In 2002, while working as a professor of applied mathematics at the Université de Lyon, Marc Garbey accepted a position as a professor of computer science at the [University of Houston](#). He went on to serve as Chairman of the Computer Science Department for five years, starting in 2004.

In 2008, Garbey began working with Barbara Bass, chair of the surgery department at Methodist Hospital. They started trying to promote a domain called [computational surgery](#). This specialty concerns the use of mathematics in imagery, robots, and medical computing in order to improve surgical practices. Garbey works most notably on modeling blood flow to help predict the obstruction of vessels and modeling the consequences of removing a breast tumor.



Around this theme, they are planning to work with Garbey's old French collaborators at the Universités de Strasbourg, Bordeaux, and La Rochelle and at INRIA. This scientific exchange is being financed by the [Partner University Fund \(PUF\)](#) of the Embassy of France for 2009-2011. During this time, Garbey has welcomed at least a dozen French students. Many continue on to receive a double doctoral diploma from the University of Houston and their French university.

Following the exchanges begun thanks to PUF, a transatlantic diploma program has been approved by the American-European cooperation organization Atlantis. This project, which adds the Université Politechnico di Milano and the University of Florida to the PUF partnership, will receive \$458,000 and €428,000 for 2010-2015.



Encouraged by their success, Garbey is pursuing work in ecology, in partnership with the Université de Rennes. The algorithms developed by his team are useful in modeling the dynamics of clonal plant populations, which play an important role for biodiversity and the regulation of carbon emissions. His team in Houston is in charge of modeling, and the team in Rennes takes care of operations on the ground.

Far from demonstrating "brain drain," Marc Garbey's trajectory demonstrates that expatriated researchers can be true ambassadors of French research. While living in the United States, they are efficient and important intermediary's for improving the reciprocal understanding between the two research and higher education systems and developing collaborations.

Author: Vincent Reillon, Deputy Attaché for Science and Technology at the [Consulate General in Houston](#).