

---

## BIOGRAPHICAL SKETCH

---

NAME GARDEUX, Vincent R. J.		POSITION TITLE Research Assistant Professor, Dept. of Medicine, The University of Arizona	
eRA COMMONS USER NAME (credential, e.g., agency login) Gardeux			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
EISTI Engineering School ("Grande Ecole"), Cergy, France	M. Sc.	10/06	Computer Science
The University of Paris 12, Creteil, France	Ph. D.	11/11	Computer Science
The University of Illinois at Chicago, Department of Medicine, Chicago, IL, USA	Post Doc.	2012-2014	Bioinformatics

### A. Personal Statement

My expertise and trainings are in bioinformatics, computational biology, and optimization. As a member of Dr. Lussier group, I conduct hypothesis-driven translational research in biomedical informatics that focuses on the use of knowledge technologies and ontologies to accurately individualize the understanding, prediction and treatments of several diseases. It involves 'omics signature development, 'omics data quality and a large panel of bioinformatics analyses (from classic panel-wise analyses to more specific patient-oriented analyses). Last works involved individual prediction of lung adenocarcinoma cancer survival, pulmonary hypertension in the context of sickle-cell disease, and severity of exacerbation in the context of asthma.

During the last year and half, I dedicated my work on precision medicine, and more particularly the prediction of deregulated pathways within a single patient, in the context of a particular disease. I developed a new technique using paired samples from a single patient as leverage for unveiling personal transcriptome deregulation.

### B. Positions and Honors

#### Positions and Employment

2006-2008 Research Fellow, University of Paris 5, Paris, France  
2008-2012 Assistant Professor, Dept. of Computer Science, EISTI engineering school, Cergy, France  
2012-2014 Postdoc. Research Associate, Dept. of Medicine, University of Illinois at Chicago, Chicago, IL  
2014-present Research Assistant Professor, Dept. of Medicine, University of Arizona, Tucson, AZ

#### Other Experience and Professional Memberships

2010-2011 Member, CAPES-COFECUB Brazilian/French Collaboration Program  
2011 Co-Organizer, International Conference on Swarm Intelligence (ICSI'11), Cergy, France  
2012 Session Chair, Conference on Operational Research and Decision Support, Angers, France  
2012-present Review Board, Information Sciences Journal, Elsevier  
2013-present Review Board, BMC Bioinformatics Journal

#### Honors

2013 Best Paper Award, Translational Bioinformatics Conference, 2013, Korea

### C. Selected Peer-reviewed Publications

1. **V. Gardeux**, I. Achour, M. Maienschein-Cline, G. Parinandi, J. Li, N. Bahroos, H. Li, J.G.N. Garcia, Y.A. Lussier, "N-of-1-pathways" unveils personal deregulated mechanisms from a single pair of RNA-seq samples: towards precision medicine, under review for *Journal of the American Medical Informatics (JAMIA)*  
**Best Paper Award**, Translational Bioinformatics Conference, 2013, Korea
2. **V. Gardeux**, A.D. Arslan, I. Achour, T-T. Ho, W.T. Beck, Y.A. Lussier, Concordance of deregulated mechanisms unveiled in underpowered experiments: PTBP1 knockdown case study, under review for *BMC Bioinformatics*
3. X. Yang, Y. Huang, Y. Lee, **V. Gardeux**, I. Achour, K. Regan, E. Rebman, H. Li, Y.A. Lussier, In Silico Cancer Cell versus Stroma cellularity index computed from species-specific human and mouse transcriptome of xenograft models: towards accurate stroma targeting therapy assessment, under review for *BMC Bioinformatics*
4. M. Maienschein-Cline, Z. Lei, **V. Gardeux**, T. Abbasi, R.F. Machado, V. Gordeuk, A.A. Desai, S. Saraf, N. Bahroos, Y. Lussier, ARTS: Automated Randomization of Multiple Traits for Study Design, *Bioinformatics*, 2014
5. A.D. Boyd, J. Li, M.D. Burton, M. Jonen, **V. Gardeux**, I. Achour, R.Q. Luo, I. Zenku, N. Bahroos, S.B. Brown, T. Vanden Hoek, Y.A. Lussier, The discriminatory cost of ICD-10-CM transition between clinical specialties: metrics, case study, and mitigating tools, *Journal of the American Medical Informatics Association*, 2013
6. M.F. Wanderley, **V. Gardeux**, R. Natowicz, A.P. Braga, GA-KDE-Bayes: an evolutionary wrapper method based on non-parametric density estimation applied to bioinformatics problems, *Proceedings of the European Symposium on Artificial Neural Networks (ESANN), Computational Intelligence and Machine Learning*, 2013
7. **V. Gardeux**, R. Natowicz, M.F.B. Wanderley, R. Chelouah, Optimization for feature selection in DNA microarrays, in *Heuristics: Theory and Applications*, Nova Science Publishers, chap. 13, pp. 287-310, 2012
8. **V. Gardeux**, R. Natowicz, R. Chelouah, R. Rouzier, A. Padua Braga and P. Siarry, An high-dimensional optimization algorithm for feature selection: method and application to onco-pharmacogenomics, *Proceedings of the conference on Operational Research and Decision Support*, 2011
9. **V. Gardeux**, M.G.H. Omran, R. Chelouah, P. Siarry, F. Glover, A Simple Tuning-free Method for High-dimensional Continuous Optimization, under review for *Soft Computing*
10. S. Bornhofen, **V. Gardeux**, A. Machizaud, From Swarm Art toward Ecosystem Art, *International Journal of Swarm Intelligence Research (IJSIR)*, vol. 3, issue 3, pp. 1-18, 2012
11. **V. Gardeux**, R. Chelouah, P. Siarry and F. Glover, EM323: a line search based algorithm for solving high-dimensional continuous non-linear optimization problems, *Soft Computing – A Fusion of Foundations, Methodologies and Applications*, vol. 15, issue 11, pp. 2275-2285, 2011
12. **V. Gardeux**, R. Natowicz, R. Chelouah and P. Siarry, ABEUS : a discrete optimization algorithm applied to feature selection on transcriptomics data sets, *Proceedings of the conference on Operational Research and Decision Support*, 2012
13. S. Bornhofen, A. Machizaud and **V. Gardeux**, Ecosystem Dynamics for Creative Image Generation, *Proceedings of the International Conference on Swarm Intelligence*, 2011
14. **V. Gardeux**, R. Chelouah and P. Siarry, La recherche unidimensionnelle pour la résolution de problèmes d'optimisation à grande dimensionnalité, *Proceedings of the conference on Operational Research and Decision Support*, 2010
15. **V. Gardeux**, R. Chelouah, P. Siarry and F. Glover, Unidimensional Search for Solving Continuous High-Dimensional Optimization Problems, *Proceedings of the international conference on intelligent system design and applications*, pp.1096-1101, 2009