C.V.

Fathallah Alouani-Bibi

Case Western Reserve University, School of Medicine,
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Citizenship: US citizen

Education:

Institution	Degree / Date	Field
Case Western Reserve University , Center for Proteomics and Bioinformatics, OH, USA	M.S. / (Exp. grad. SP 2015)	Systems Biology & Bioinformatics Track: Computational Molecular Biology
University of Quebec, National Institute of Scientific Research, Canada	Ph.D. / 2005	Energy and Material Sciences Track: Computational Plasma Physics

Professional experience:

From-To	Institution	Position Title / Field of Research
2011-2013	Center for Space Plasma and Aeronomic Research, University of Alabama in Huntsville, AL, USA.	Research Associate / Computational Physics
2008-2010	George Mason University, VA, USA	Research Associate / Computational Physics
2006-2008	University of Oxford, St John's College, UK	Fellowship / Computational Physics.
2004-2006	University of California Irvine, CA, USA	Postdoc / Neuro-Cognitive science - Computational Non-Linear Dynamics

Awards: 2014 - The Ray A. & Robert L. Kroc Summer Research Fellowship in Diabetes and Endocrine-Related Diseases.

Internship: 01/2014-04/2014 - NeoProtoemics Inc., Cleveland, OH, USA

Computational/Numerical Research Experience:
- *Bioinformatics***:** Network/Graph analysis, Sequencing, High throughput data and Multivariate statistical analysis
- *Medical Physics:* EEG/MEG data collection and analysis/ Monte-Carlo simulations of radiation transport.
- *Implementation of Numerical Algorithms and Methods:* Finite difference / Finite Volume / Finite element / Eulerian – Lagrangian methods / Riemann solver / CFD. Particle based methods: Monte-Carlo / Particle-in-Cell / Test-particle; Density function methods: Boltzmann
- *Solvers:* Initial & Boundary value problem / ODE-PDE in presence of steep slope or singularity / Eigenvalue problem.
- *Computational Physics***:** Turbulence / Magnetic reconnection / Thermal conduction / Instabilities / Wave-particles interaction / Atomic physics / laser-plasma interaction.

Programming/Computer Skills: HPC & Parallel programming (MPI), Linux/Windows, C/C++, R/Rstudio, Fortran, Java, Perl, SQL, Matlab, Maple, PyMol.

Software and Simulation Codes Developer/User Experience:
- **User of:** Molecular Dynamics code **SCHRODINGER**
- **Developer of:** Monte-Carlo code **RTPCRT**
- **User of:** AMR-MHD codes: **BATS-R-US/SWMF**; **FLASH**; **ENZO**.
- **Developer of:** Kinetic code **FPTRANS** (1Dx-2Dv); (x, v, μ) grid.
- **Contributed to:** Kinetic code **FPI** (1Dx-2Dv); (x, v) grid & Legendre expansion in μ.
- **Developer of:** Hydrodynamics code **Hydro+**.
- **Developer of:** Monte-Carlo code **FASTER**.

Technical Publications: 18 articles in refereed journals, including: *Nature, Phys. Rev E, ApJ., Comp. Phys. Comm.* (Full list of publications available upon request).