Elisabetta Mereu

Contact Information
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Work Experiences

Istituto di Ricerca Genetica e Biomedica (IRGB), CNR Monserrato, Italy

PhD internship student - Supervisor: Serena Sanna *Jan 2013 – Present*

- Principal Projects: Statistical analysis of genetic data from whole exome sequencing in trios and multigenerational families segregating Type 1 Diabetes and Multiple Sclerosis.
- *Arrays and sequencing-based GWAS for Multiple Sclerosis.* The project involve about 10000 MS or T1D cases and controls from Sardinian population, characterized with commercial whole-genome genotyping arrays.

Department of Mathematics and Informatics, University of Cagliari, Italy.

Academic Tutor of Numerical Analysis *Oct 2011 – Feb 2012*

- Students support and organisation of MatLab workshops.

Istituto di Genetica delle Popolazioni (IGP) , CNR , Li Punti - Sassari, Italy

Statistical Analyst *Apr 2011 – Sept 2011*

- Linkage Analysis of spirometric measurements, with microsatellites (STRs) and SNPs, in a pedigree from Sardinia population.

Centro di Ricerche Superiori (CRS4) , Pula (Cagliari), Italy

Professional Training in Solar Energy Engineering *Jun 2010- Mar 2011*

- Principal Activity: Applied Thermodynamics and Fluid Dynamics, Hybrid System Design, Measurement Technique and data processing, Solar Thermal, Fundamental principles of eletrical engineering.

Department of Pharmacy, University of Cagliari, Italy

Academic Tutor of Mathematics, Statistics and Computer Science *Oct 2009 – Feb 2010*

- Students support and organisation of math analysis workshops.

Education

Ospedale Pediatrico Microcitemico, Department of Public Health and Molecular Medicine, University of Cagliari, Italy

PhD Student in Statistical Genetics *Mar 2012 - Present*

- Research interests: Bioinformatics, Statistics, Genetics and Genetic Diseases.
- Principal Projects: Genome-wide Association Studies of cardiac T2* in patients with beta-Thalassemia Major.
  Statistical Analysis for the assessment iron levels in patients with non transfusion-dependent Thalassemia and Hemoglobin H disease.
- Supervisor until may 2013: Prof. Galanello Renzo (Full Professor, Department of Public Health and Molecular Medicine, University of Cagliari)

- Current Supervisor: Serena Sanna (Researcher, Istituto di Ricerca Genetica e Biomedica (IRGB), CNR, Monserrato, Italy), Paolo Moi (Associate Professor, Department of Public Health and Molecular Medicine, University of Cagliari, Italy)

Department of Mathematics and Computer Science, University of Cagliari, Italy

Master's Degree (2-year degree) in Mathematics, (Cum Laude) *Sep 2009*

- Thesis: A Parallel Algorithm for Global Optimization Problems in a Distribuited Computing Environment
- Supervisors: Gaviano Marco (Full Professor, Department of Mathematics and Computer Science, University of Cagliari, Italy)

Department of Mathematics and Computer Science, University of Cagliari, Italy

Bachelor's Degree (3-year degree) in Mathematics *Apr 2007*

- Thesis: Fundamental group of the Circle S1
- Supervisors: Gianluca Bande (Researcher, Department of Mathematics and Computer Science University of Cagliari, Italy)

Skills and Competencies

Management and analysis of large-scale genomics datasets, in particular GWAS and NGS data. Scripting skills in Python and good working knowledge of the statistical methods required to accurately interpret data with R. Experience working in a Unix/Linux environment on the development of analysis pipelines. Experience and knowledge in human genetics, data Quality Control, Genetic Study Design and analysis of large pedigrees with Pedstats, Merlin and Plink tools. Familiarity and working knowledge of BWA, GATK, Samtools, vcfCooker, Annovar, IGV and other bioinformatics tools for the genetic analysis of DNA sequences.

Interest Research and Personal Skills

My research interests mainly focus on analysis of NGS data aimed at discovering new genetic variants that confer susceptibility to genetic diseases or traits. I'm a self-motivated student with ability to learn quickly and to work independently, but also with strong interpersonal skills.

Summer Schools and Whorkshops

- *Sep 2013*
  3rd Sardinian Summer school in Genomic Analysis of Complex and Monogenic Disorder.
- *Jun 2013*
  Hand-on Workshop on NGS Data Analysis titled nalisi dati NGS in Galaxy: exome, RNA-seq, metagenomica
- *Sep 2012*
  2nd Sardinian Summer school in Genomic Analysis of Complex and Monogenic Disorder. Sep 2012
- *Sep 2011*
  1st Sardinian Summer school in Genomic Analysis of Complex and Monogenic Disorder.

Organisation and Location: Crs4 and Istituto di Ricerca Genetica e Biomedica (IRGB-CNR), Polaris Technology Park ula (Cagliari), Italy.

Articles and Abstracts

E. Mereu, M. Pitzalis, M. Oppo, C. Sidore , M. Zoledwieska, F. Deidda, A. Mulas, P. Moi, P. Pusceddu, M. P. Frongia, A. Angius, S. Sanna, F. Cucca. Integrated inkage and exome sequencing analysis in a multigenerational Sardinian family with type 1 Diabetes. ESHG 2014, Milan. Abstract selected for poster.

E. Mereu, M. Pitzalis, R. Berutti , M. Oppo, C. Sidore , M. Zoledwieska, M. Valentini, A. Puddu, F. Deidda, R. Galanello, P. Pusceddu, M. P. Frongia, C. Jones, A. Angius, S. Sanna, F. Cucca. Whole-exome sequencing in pedigrees segregating Type 1 Diabetes. ESHG 2013, Paris. Abstract selected for poster.

M. Gaviano, D. Lera, E. Mereu. A Parallel Algorithm for Global Optimization Problems in a Distribuited Computing Environment. Applied Mathematics 2012,3, 1380-1387, Epub October 2012 .

Languages

Italian	Native speaker
English	Intermediate level
French	Intermediate level