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Work status: Permanent Resident (Green card)

RESEARCH INTERESTS

RNA-binding proteins and non-coding RNA regulatory networks in neurological disorders; establishment and maintenance of RNA homeostasis in the brain; developing RNA therapeutic approaches to neurological diseases.

EDUCATION

- 2009 Ph.D. in Medical Genetics
Telethon Institute of Genetics and Medicine (TIGEM), Second University of Naples, Italy.
Thesis title: “HOCTAR: a new approach for miRNA target prediction.”
- 2005 Master’s degree in Biological Science, *summa cum laude*
A. Monroy University of Palermo, Italy
Thesis title: “DNA analysis of *Actinomyces* strains producing molecules with antibiotic activity against *Mycobacterium* MDR.”

PROFESSIONAL EXPERIENCE

- 2010– *Postdoctoral Associate*, lab of Huda Zoghbi, MD, Department of Molecular and Human Genetics at Baylor College of Medicine and the Jan and Dan Duncan Neurological Research Institute at Texas Children’s Hospital, Houston, Texas.
- 2006-2009 *Doctoral student*, lab of Sandro Banfi, MD at the Telethon Institute of Genetics and Medicine (TIGEM) and School of Medicine of Second University of Naples (SUN), Italy.
- 2005-2006 *Bioinformatics Research Fellow*, lab of Elia Stupka, PhD at TIGEM, Naples, in collaboration with Graziano Pesole, University of Milan.
- 2005 *Molecular Biology Fellow*, lab of Fabrizio Vitale, D.V.M., at the Istituto Zooprofilattico Sperimentale della Sicilia (IZSS) of Palermo, Italy.

- 2003-2005 *Undergraduate student researcher* in the laboratories of Fara Misuraca, PhD (Department of Biology and Development University of Palermo) and Fabrizio Vitale, D.V.M. (IZSS).
- 2003-2004 *Manager*, Chemical Analysis Laboratory at Calatrasi Domaine Neferis S.A. (summers) Winery, Tunis, Tunisia; won Premiere Cru for the “Selian Carignan” in 2004.

HONORS AND AWARDS

- 2016 Best Speaker Prize, 6th Ataxia Investigators Meeting (AIM) at Caribe Royale, April 1, Orlando, Florida.
- Travel grant “Hot Chair” award as invited speaker to attend the 6th Ataxia Investigators Meeting (AIM) at Caribe Royale, March 29-April 1, Orlando, Florida.
- First prize, “Best Paper” in the Department of Molecular and Human Genetics, Baylor College of Medicine Retreat, January 14-15, Galveston, TX.
- 2015 Winner, “Scientific Storytelling,” Pediatric Research & Fellows’ Symposium, March 26, Department of Pediatrics, Texas Children’s Hospital, Houston, TX.
- 2012 Received National Scientific Qualification as Associate Professor in Experimental Biology, Ministry of Education, Universities and Research (MIUR).
- 2009 Young speaker special selection invitation to Keystone Symposia on Molecular and Cellular Biology – The Biology of RNA Silencing Meeting, April 25-30, Victoria British Columbia, Canada.
- 2007 One of 150 applicants selected to attend “Advanced Topics in Molecular Medicine,” July 15-18, at AREA Science Park (CBM-CEI) in Trieste, Italy.
- 2007 One of 100 applicants selected to attend the Accademia Nazionale dei Lincei Meeting, “The world of small non-coding RNAs,” June 11-12, Rome, Italy.
- 2006, 2007 Early Researcher Career Development Award provided by the Italian Ministry of Education, Universities and Research (MIUR) at the University of Milan; I am the only student (so far) to have won twice.

PROFESSIONAL SERVICE

- 2016– Invited reviewer for *Italian Scientists and Scholar of North America Award*
- 2016– Invited reviewer for *Human Mutation*
- 2016– Invited reviewer for *Bioinformatics*

- 2015– Invited reviewer for *Human Molecular Genetics*
- 2013– Invited reviewer for *Gene*
- 2012– Invited reviewer for *Journal of Plant Physiology*, *iConceptPress Human*
- 2011– Invited reviewer for *Genome Research*, *Journal of Theoretical Biology*
- 2011–2015 Grant Reviewer, *Italian Ministry of Education Universities and Research*
- 2010– Invited reviewer for *BMC Genomics*, *Evolution & Development*
- 2009– Invited reviewer for *BMC Developmental Biology*, *PLoS One*

PUBLICATIONS

Peer-Reviewed Manuscripts

- 2015 **Gennarino VA***, Alcott CA*, Chen CA, Chaudhury A, Rosenfeld JA, Parikh S, Wheless JW, Roeder ER, Horovitz DDG, Roney EK, Smith JL, Cheung SW, Li W, Nailson JR, Schaaf CP, Zoghbi HY. “NUDT21-spanning CNVs lead to neuropsychiatric disease and altered MeCP2 abundance via alternative polyadenylation.” *eLife* Aug 27;4. doi: 10.7554/eLife.10782. (*Contributed equally)
- Gennarino VA**, Singh RK, White JJ, De Maio A, Han K, Kim JY, Jafar-Nejad P, di Ronza A, Kang H, Sayegh LS, Cooper TA, Orr HT, Sillitoe RV and Zoghbi HY. “Pumilio1 Haploinsufficiency Leads to SCA1-like Neurodegeneration by Increasing Wild-Type Ataxin1 Levels.” *Cell*, Mar 12;160(6):1087-98.
This paper was highlighted in an ALZ forum press release.
- 2014 Han K, Chen H, **Gennarino VA**, Richman R, Lu H, and Zoghbi HY. “Fragile X-like behaviors and abnormal cortical dendritic spines in Cytoplasmic FMR1-interacting protein 2-mutant mice.” *Human Molecular Genetics*, Apr 1;24(7):1813-23.
- 2013 Han K*, **Gennarino VA***, Lee Y, Pang K, Hashimoto-Torii K, Choufani S, Raju CS, Oldham MC, Weksberg R, Rakic P, Liu Z, and Zoghbi HY. (*Contributed equally) “Human-specific regulation of MeCP2 levels in fetal brains by microRNA miR-483-5p.” *Genes & Development*, Mar 1;27(5):485-90.
This paper was selected for the journal cover.
- 2012 **Gennarino VA**, D’angelo G, Dharmalingam G, Fernandez S, Russolillo G, Sanges R, Mutarelli M, Belcastro V, Ballabio A, Verde P, Sardiello M, Banfi S. “Identification of microRNA-regulated gene networks by expression analysis of target genes.” *Genome Research*, Jun;22(6):1163-72. Epub 2012 Feb 24.
- 2011 **Gennarino VA†**, Sardiello M, Mutarelli M, Dharmalingam G, Maselli V, Lago G and Banfi S. “HOCTAR database: a unique resource for microRNA target

prediction.” *Gene*, Jul 1;480(1-2):51-8. Epub 2011 Mar 22. (†Corresponding author).

- 2010 Karali M, Peluso I, **Gennarino VA**, Bilio M, Verde R, Lago G, Dollé P, Banfi S. “miRNeye: a microRNA expression atlas of the mouse eye.” *BMC Genomics*, 2010 Dec 11:715.
- Licastro D*, **Gennarino VA***, Petrerà F, Sanges R, Banfi S[§] and Stupka E[§]. “The majority of ultra conserved elements acting as enhancers is transcribed.” *BMC Genomics*, 2010 Mar 4;11:151. (*Contributed equally)
- 2009 Grillo G, Turi A, Licciulli F, Mignone F, Liuni S, Banfi S, **Gennarino VA**, Horner DS, Pavesi G, Picardi E, Pesole G. “UTRdb and UTRsite (release 2010): a collection of sequences and regulatory motifs of the untranslated regions of eukaryotic mRNAs.” *Nucleic Acids Research*, 2010 Jan;38 (Database issue):D75-80. Epub 2009 Oct 30.
- Sardiello M, Palmieri M, di Ronza A, Medina DL, Valenza M, **Gennarino VA**, Di Malta C, Donaudy F, Embrione V, Polishchuk RS, Banfi S, Parenti G, Cattaneo E, Ballabio A. “A gene network regulating lysosomal biogenesis and function.” *Science*, Jul 24;325(5939):473-7. Epub 2009 Jun 25.
- Gennarino VA**, Sardiello M, Avellino R, Meola N, Maselli V, Anand S, Cutillo L, Ballabio A and Banfi S. “MicroRNA target prediction by expression analysis of host genes.” *Genome Research*, Mar;19(3):481-90. Epub 2008 Dec 16.

Manuscripts in preparation

Gennarino VA, Rousseaux MW, See L, Zoghbi HY. microRNA regulation of α -Synuclein requires the RNA-binding protein Pumilio1.

Gennarino VA, Nitschke L, Adamski CJ, Al-Ramahi I, Orengo J, De Maio A, Jeong HH, Botas J, Liu Z, Orr HT, Zoghbi HY. Brain region specific protein-protein interaction network of spinocerebellar ataxia type 1 (SCA1).

Reviews and Book Chapters

- 2009 Meola N, **Gennarino VA** and Banfi S. “MicroRNAs and genetic diseases.” *Pathogenetics Review*, 2009 Nov 4;2(1):7.
- 2006 Attanzio A. & **Gennarino VA**. “Biomolecular investigations on *Salmonella* strains isolated from food referred to antibiotic resistance.” *Chirone*. Anno XII – n. 1 – March 2006:14-15.
- Gennarino VA**. “Molecular studies of new antibiotic-producing *Actinomyces* strains.” *Chirone*. Anno XII – n. 1 – March 2006: 17-18.

INVITED PRESENTATIONS

- 2016 “Brain region resolved protein-protein interaction network of Spinocerebellar ataxia type 1 (SCA1) disease.” 6th Ataxia Investigators’ Meeting (AIM). (March 29 - April 1, Orlando, Florida, USA).
- 2015 “*NUDT21* is a dosage-sensitive gene encoding an RNA-binding protein that regulates levels of MeCP2.” Cold Spring Harbor Laboratory – Eukaryotic mRNA processing. (August 18 - 22, Cold Spring Harbor, New York, USA.)
- 2014 “Haploinsufficiency of *Pumilio1* leads to SCA1-like neurodegeneration by increasing wild-type Ataxin1 levels in a miRNA-independent manner.” The American Society of Human Genetics annual meeting. (October 18-22, San Diego, California, USA.)
- 2012 “Human-specific regulation of MeCP2 levels in fetal brain by imprinted microRNA miR-483-5p.” Cold Spring Harbor Laboratory – Regulatory & Non-Coding RNAs (August 28 – September 1, Cold Spring Harbor, New York, USA).
- 2009 “MicroRNA target prediction by expression analysis of host genes.” Keystone Symposia on Molecular and Cellular Biology – The Biology of RNA Silencing Meeting (April 25-30, Victoria British Columbia, Canada.)
- 2008 “Improved microRNA target prediction by analysis of the expression behaviour of their host genes.” TIGEM Annual Retreat (May 19-21, Città di Castello, Italy.)
- 2003 “Characterization of new *Actinomyces* strains with antibiotic activity against multidrug-resistant tuberculosis (MDR TB) strains of *Mycobacterium bovis* and *Mycobacterium avium*.” Department of Biology and Development - Annual Congress (December 18-19, Palermo, Italy).

Abstracts and Posters

- 2009 Sardiello M, Palmieri M, di Ronza A, Medina DL, Valenza M, **Gennarino VA**, Di Malta C, Donaudy F, Embrione V, Polishchuk RS, Banfi S, Parenti G, Cattaneo E, Ballabio A. “A gene network regulating lysosomal biogenesis and function.” The American Society for Cell Biology – 49th Annual Meeting (December 5-9, San Diego, California).
- Turturo MG, **Gennarino VA**, Augello B, Fusco C, Micale L, D’Addetta E, Banfi S and Merla G. “The role of miRNA-590 in Williams Beuren Syndrome.” XII Congresso SIGU (November 8-11, Torino, Italy).
- Gennarino VA**, Sardiello M, Avellino R, Meola N, Maselli V, Anand S, Cutillo L, Ballabio A, Banfi S. “MicroRNA target prediction by expression analysis of host genes.” Keystone Symposia on Molecular and Cellular Biology - The Biology of RNA Silencing Meeting (April 25-30, Victoria British Columbia, Canada).

- Gennarino VA**, Conte I, Avellino R, Marianthi K, Meola N, Sardiello M, Banfi S. “The role of non-coding RNAs in mammalian eye development and function.” XV Telethon Convention (March 9-11, Riva del Garda, Trento, Italy).
- 2008 **Gennarino VA**, Licastro D, Petrera F, Sanges R, Banfi S and Stupka E. “Analysis of ultra-conserved elements expression during mouse development reveals constitutive, strand-specific expression independent of enhancer activity.” 3rd ESF Functional Genomics Conference (October 1-4, Innsbruck, Austria).
- Gennarino VA, Karali M, Avellino R, Conte I, Carola A, Catuogno S, Carrella S, Maselli V, Banfi S. “MicroRNAs involved in eye development and function.” Stem Cells and Small RNAs as Tools for Basic Science and Regenerative Medicine (February 5-6, 2008, School of Medicine of Second University of Naples, Naples, Italy).
- 2007 **Gennarino VA**, Avellino R, Maselli V, Roma G, Peluso I, Stupka E, Banfi S. “Ultra Conserved Elements: twofold functions?” Italian Bioinformatics Society (BITS) Annual Meeting (April 26-28, Naples, Italy).
- 2006 **Gennarino VA**, Avellino R, Maselli V, Roma G, Peluso I, Stupka E, Banfi S. “Ultra Conserved Elements: overlapping grammars?” TIGEM Annual Retreat (May 16-18, Perugia, Italy).
- Reale S, Cascio A, Stassi G, Oliveri E, **Gennarino VA**, Vitale F. “AFLP as tool to Characterize Isolated Brucella Strains.” 15th Mediterranean Congress of Chemotherapy – International Society of Chemotherapy (ISC) (June 25-27, Catania, Italy)
- Reale S, Cascio A, Stassi G, **Gennarino VA**, Ciaccio A, Leonardi E, Caracappa S. “Molecular characterization of Brucelle strains in Sicily by bioinformatics approach.” VII Congresso Nazionale SIDiLV (October 26-28, Torino, Italy)
- 2005 **Gennarino VA**, Reale S, Caracappa F, Vital F, Misuraca F. “Characterization of *Actinomyces* strains with antibiotic activity against *Mycobacterium* MDR strains by AFLP approach.” 33th Congresso Nazionale Societa Italiana di Microbiologia (SIM) (October 16-19, Naples, Italy)
- 2004 **Gennarino VA**, Reale S, Caracappa F, Vitale F, Misuraca F. “Identification of new repeated DNA elements in *Actinomyces* strains homologous to IS6110 from *Mycobacterium bovis* MDR TB.” 6th Convegno Federazione Italiana Scienze della Vita (FISV) (September 30 – October 3, Riva del Garda, Trento, Italy)

TEACHING

University of Palermo, Italy

2004-2005 Teaching assistant for Microbiology course, taught by Prof. Fara Misuraca in the Department of Biological Science, University of Palermo. I presented ~3 lectures a week (based on materials prepared by Prof. Misuraca) to ~100 students and was responsible for helping students with questions after class.

MENTORING

Graduate students (Baylor College of Medicine)

2015– Larissa Nitschke, PhD student, Integrative Molecular & Biomedical Sciences
James Orengo, Medical student.
Abdul Basit Khan, Medical Student

2014– Callison E. Alcott, MD/PhD student, Program in Developmental Biology

2013– Li Wang, PhD student in Molecular & Human Genetics

Summer students (Baylor College of Medicine)

2011 Jared Lichtarge, Dept. of Molecular & Human Genetics
Matthew Feigin, Dept. of Molecular & Human Genetics
Ben Belfort, Dept. of Molecular & Human Genetics

LANGUAGES

Italian (native speaker)
English (proficient)