VINCENZO ALESSANDRO GENNARINO, Ph.D.

Assistant Professor
Department of Genetics & Development
Columbia University Medical Center
Hammer Health Sciences
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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 M.S. 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

2019– Member, Initiative for Columbia Ataxia and Tremor (ICAT), Columbia University Medical Center, New York, NY.

Member, Columbia Stem Cell Initiative, Columbia University Medical Center, New York, NY.

2018– *Assistant Professor*, Departments of Genetics & Development, with joint appointments in Pediatrics and Neurology, Columbia University Medical Center, New York, NY.

2010-2017 *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 Instituto 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 (summers) *Manager*, Chemical Analysis Laboratory at Calatrasi Domaine Neferis S.A. Winery, Tunis, Tunisia; won Premiere Cru for the "Selian Carignan" in 2004.

HONORS AND AWARDS

2020 The only one nominated by Columbia University Irving Medical Center as candidate for the Young Investigator 2020 Innovators in Science Award in Rare Diseases, Takeda Pharmaceutical Company and New York Academy of Science.

2018 Paul A. Marks Scholar, Columbia University Vagelos College of Physicians and Surgeons, New York, NY

"Hot chair" travel award (invited speaker) to the 7th Ataxia Investigators Meeting (AIM), April 1-5, Philadelphia, PA

Young Investigator Research Grant 2018. "Delineating the PUM1 functional network in mice and humans." The National Ataxia Foundation.

NARSAD Young Investigator Award 2018. "PUMILIO1 mutations cause two new neurological disorders: understanding its role in Mice and Humans." The Brain & Behavior Research Foundation.

2017 Young Investigator Research Grant 2017. "*PUMILIO1* deficiency: understanding a new ataxia gene and its role in cerebellar dysfunction in mice and humans." The National Ataxia Foundation.

2016 Best Speaker Prize, 6th Ataxia Investigators Meeting (AIM) at Caribe Royale, April 1, Orlando, Florida.

"Hot Chair" travel award 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.

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.

PUBLICATIONS

Peer-Reviewed Manuscripts

2020 Matrood S, de Prisco N, Wissniowski TT, Wiese D, Jabari S, Griesmann H, Wanzel M, Stiewe T, Neureiter D, Klieser E, Mintziras I, Bucholz M, Bartsch DK, **Gennarino VA** and Di Fazio P. "Modulation of pancreatic neuroendocrine neoplastic cell fate by autophagy mediated death". Journal of Neuroendocrinology, Oct 2 2020, online ahead of print.

Nitschke L, Tewari A, Coffin SL, Xhako E, Pang K, **Gennarino VA**, Johnson JL, Blanco FA, Liu Z, Zoghbi HY. "MiR760 regulates ATXN1 levels via interaction with its 5' untranslated region". *Genes & Development,* Sep 1 2020;34:1147-1160.

Uyhazi KE, Yang Y, Liu N, Qi H, Huang XA, Mark W, Weatherbee SD, de Prisco N, **Gennarino VA**, Song X, Lin H. "Pumilio proteins utilize distinct regulatory mecchanisms to achieve complementary functions required for pluripotency and embryogenesis". *PNAS*, Apr 7;14:7851-7862.

2019 Suh J, Romano DM, Nitschke L, Herrick SP, DiMarzio BA, Dzhala V, Bae JS, Oram MK, Zheng Y, Hooli B, Mullin K, **Gennarino VA**, Wasco W, Schmahmann JD, Albers MW, Zoghbi HY, Tanzi RE. "Loss of Ataxin-1 Potentiates Alzheimer's Pathogenesis by Elevating Cerebral BACE1 Transcription". *Cell*, Aug 22;178:1159-1175.

2018 De Maio A*, Yalamanchili HK*, Adamski CJ, **Gennarino VA**, Liu Z, Qui J, Jung SY, Richman R, Orr H, Zoghbi HY. "RBM17 interacts with U2SURP and CHERP to regulate expression and splicing of RNA-processing proteins". *Cell Reports*, Oct 16; 25(3):726-736.e7. (*Contributed equally)

Gennarino VA†, Palmer EE, McDonell LM, Wang L, Adamski CJ, Koire A, See L, Chen CA, Schaaf CP, Rosenfeld JA, Panzer JA, Moog U, Hao S, Bye A, Kirk EP, Stankiewicz P, Breman AM, McBride A, Kandula T, Dubbs HA, Macintosh R, Cardamone M, Zhu Y, Ying K, Dias KR, Cho MT, Henderson LB, Baskin B, Morris P, Tao J, Cowley MJ, Dinger ME, Roscioli T, Caluseriu O, Suchowersky O, Sachdev RL, Lichtarge O, Tang J, Boycott KM, Holder JL, and Zoghbi HY†. "A mild *PUM1* mutation is associated with adult-onset ataxia, whereas haploinsufficiency causes developmental delay and seizures." *Cell*, Feb 22; 172:924-936. (†Corresponding authors)

Recommended by T. Hall and A. Durr in F1000Prime. Commented on Epilepsy Curr. 2019 Mar-Apr;19(2):122-123.

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. "Human-specific regulation of MeCP2 levels in fetal brains by microRNA miR-483-5p." *Genes & Development,* Mar 1;27(5):485-90. (*Contributed equally)

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***, Petrera F, Sanges R, Banfi S[§] and Stupka E[§]. "Promiscuity of enhancer, coding and non-coding transcription functions in ultraconserved elements." *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.
Recommended by S. Di Donato in F1000Prime.

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.

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.

PATENTS

"MiR760 regulates ATXN1 levels via interaction with its 5' untranslated region". Huda Y. Zoghbi, Larissa Nitschke, **Vincenzo A. Gennarino**, Ambika Tewari. *Pending.*

MEDIA COVERAGE

2018 "Researching ataxia with passion," profile in *Generations* Summer 2018, National Ataxia Foundation Vol. 46, No. 2, p.21.

"Image of the Month: SCA1-like neurodegeneration," *Baylor College of Medicine*, May 1 2018 (https://blogs.bcm.edu/2018/05/01/from-the-labs-image-of-the-month-sca1-like-neurodegeneration/).

"When protein regulators go awry, neurological disease may follow," *Baylor College of Medicine*, April 19 2018 (https://blogs.bcm.edu/2018/04/19/when-protein-regulators-go-awry-neurological-disease-may-follow/).

"Defects on regulators of disease-causing proteins can cause neurological disease," *Baylor College of Medicine*, February 22, 2018 (https://www.bcm.edu/news/neuroscience/defects-regulators-proteins-neurological).

"Changes in Pumilio1 levels linked to distinct neurological disorders," Jan and Dan Duncan Neurological Research Institute, Texas Children's Hospital, February 22, 2018 (https://nri.texaschildrens.org/synopsis/changes-pumilio1-levels-linked-distinct-neurological-disorders).

2015 "RNA-Binding proteins control ataxin-1 expression," *ALZFORUM*, March 13 2015 (https://www.alzforum.org/news/research-news/rna-binding-protein-controls-ataxin-1-expression).

"Many paths to degeneration for neurons", *Baylor College of Medicine*, March 6 (https://blogs.bcm.edu/2015/03/16/many-paths-to-degeneration-for-neurons/).

2013 "MicroRNA helps unravel mystery of Rett protein (MeCP2)," Texas Children's Hospital (https://www.texaschildrens.org/about-us/news/releases/microrna-helps-unravel-mystery-rett-protein-mecp2).

INVITED PRESENTATIONS

2020 "Neurological disease: it's not just about genes anymore." Invited Speaker at the Seminars cycle for the Functional and Structural Genomics PhD programme of SISSA, Trieste, Italy, July 7.

2019 "Neurological disease: it's not just about genes anymore." Keynote Speaker at the 8th Neapolitan Brain Group Meeting, Naples, Italy, December 12.

"Neurological disease: it's not just about genes anymore." Ophthalmology Grand Rounds, Columbia University Medical Center, New York, May 23.

"Protein Dosage: A New Lens on Neurological Disorders." Neurology Grand Round, Columbia University Medical Center, New York, January 11.

2018 "Protein Dosage: A New Lens on Neurological Disorders." Rutgers Medical School, Neward, NJ, December 3.

"Protein Dosage: A New Lens on Neurological Disorders." Division of Movement Disorders, Columbia University Medical Center, New York, NY, July 19.

"Protein Dosage and Neurological Disorders." Lecture at The Institute of Genetics and Biophysics Adriano Buzzati-Traverso of the National Research Council (CNR) in Naples, Italy, June 25.

"Protein Dosage: A New Lens on Neurological Disorders." Lecture at Masaryk University (MU), Brno, Czech Republic, June 21.

"Pumilio1 insufficiency causes two distinct neurological disorders." 7th Ataxia Investigators' Meeting (AIM), April 1 -5, Philadelphia, Pennsylvania.

"Protein Dosage: A New Lens on Neurological Disorders." Pediatric Research Grand Round, Columbia University Medical Center, New York, March 2, New York, NY.

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.

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, New York.

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.

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.

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

2019 Botta S, Chemiakine A, Boyle L, **Gennarino VA**. "Understading the role of the RNA-binding protein Pumilio1 in two different neurological diseases". 2019 International Ataxia Research Conference (November 14-16, Washington Marriott Wardman Park, Washington).

de Prisco N, Boyle L, Chemiakine A, **Gennarino VA.** "The Pre-Messenger RNA Cleavage Factor I (CFIm) delineate a novel neuropsychiatric disease in humans". Genetics & Development Retreat (September 20 – 21, Florham Park, New Jersey).

Lee W, Lone M, Capolupo L, Zamuner S, Gerkes EH, Guo H, Fagerberg CR, Beier CP, Blythe M, Wilson V, DDD, López-González V, Dulcet LA, Zweier C, van Bon B, Pfundt R, Xiong S, López-Martín E, Jankovic J, Bain J, Gilissen C, Eichler EE, De Los Rios P, Hornemann T, D'Angelo G, **Gennarino VA**. "Homeostatic short-circuiting of sphingolipid synthesis caused by *COL4A3BP/ CERT* mutations leads to intellectual disability and autism spectrum disorder with motor delay and craniofacial anomalies." Genetics & Development Retreat (September 20 – 21, Florham Park, New Jersey).

Botta S, Chemiakine A, Boyle L, **Gennarino VA**. "Understanding the role of the RNA-binding protein Pumilio1 in two different neurological diseases." Genetics & Development Retreat (September 20 – 21, Florham Park, New Jersey).

Boyle L, Fan X, Hamm L, Thornton A, Shen Y, **Gennarino VA**, Chung WK. "Disease severity in KIF1A Associated Neurological Disorders (KAND) is correlated with variant location." Genetics & Development Retreat (September 20 – 21, Florham Park, New Jersey).

Suh J, Romano DM, Nitschke L, Herrick SP, DiMarzio BA, Volodymyr D, Bae JS, Oram MK, Zheng Y, Hooli B, Mullin K, **Gennarino VA**, Wasco W, Schmahmann JD, Albers MW, Zoghbi HY, Tanzi RE. "Loss of Ataxin-1 potentiates Alzheimer's pathogenesis by elevating cerebral BACE1 transcription." The 10th IBRO World Congress of Neuroscience, IBRO 2019 (September 21 – 25, Daegu, Korea).

2018 Botta S, Chemiakine A, Boyle L, **Gennarino VA**. "Understanding why having only one functioning allele of *PUM1* can cause two different diseases." Genetics & Development Retreat (September 21 – 22, Florham Park, New Jersey).

Gennarino VA, Palmer EE, McDonell L, Wang L, Adamski CJ, Loire A, Chen CA, Schaaf CP, Rosenfeld JA, Panzer J, Lichtarge O, Tang J, Boycott KM,

Holder JL, Zoghbi HY. "A mild mutation is associated with adult-onset ataxia, whereas haploinsufficiency causes developmental delay and sizures." 7th Ataxia Investigators' Meeting (AIM) (April 1 - 5, Philadelphia, Pennsylvania).

2016 **Gennarino VA**, Nitschke L, Orengo J, Adamski CJ, Al-Ramahi I, De Maio A, Jeong HH, Botas J, Liu Z, Orr HT, Zoghbi HY. "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).

2014 **Gennarino VA**, Jafar-Nejad P, Orr HT, Zoghbi HY. "Characterize mechanisms underlying differential neuronal vulnerability in spinocerebellar ataxia type 1 (SCA1)." 5th Ataxia Investigators' Meeting (AIM) (March 18 - 21, Las Vegas, Nevada).

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 *Actynomyces* 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).

RESEARCH SUPPORT

2019-2021 "Dietary contribution in cerebellar ataxia" R03 NS114871. Source: NIH-CDIN. Total funding: $162,000 over two years. Role: Co-Investigator.

2019-2024 "Deciphering the role of *Pumilio1* in two new neurological diseases" R01 NS109858-01A1. Source: NIH-NINDS. Total funding: $2,198,845 over five years. Role: Principal Investigator.

2018-2021 Paul A. Marks Scholar Program, Columbia University Vagelos College of Physicians and Surgeons. $300,000 over three years.

Completed

2018-2019 Brain & Behavior Research Foundation, NARSAD Young Investigator Award. "*PUMILIO1* mutations cause two new neurological disorders: understanding PUM1 function in mice and humans." Role: PI. $70,000 over two years.

2018 National Ataxia Foundation Young Investigator Research Award (Jan 1 to Dec 31, 2018). "Delineating the PUM1 functional network in mice and humans." Role: PI. $35,000 for one year.

2017 National Ataxia Foundation Young Investigator Research Award (Jan 1 to Dec 31, 2017). "*PUMILIO1* deficiency: understanding a new ataxia gene and its role in cerebellar dysfunction in mice and humans." Role: PI. $35,000 for one year.

PROFESSIONAL SERVICE

2020– Organizer for the seminar series at the Department of Genetics and Development, Columbia University Irving Medical Center.

Organizer of the Ethics Course for the Genetics PhD Program at the Department of Genetics and Development, Columbia University Irving Medical Center.

Member of the committee to organizer the 2020 Columbia Stem Cells Initiative Retreat, April 27 and 28 at Edith Macy Retreat, Chappaqua, NY.

Member of the selection committee for the Genetics & Development, MD/PhD, Biochemistry and Umbrella and Biomedical sciences PhD programs at Columbia University Irving Medical Center.

Reviewer, Pioneer SCA Translational Research Awards, Young Investigator and Post-doctoral Awards, National Ataxia Foundation.

2019– Member of the selection committee for the Genetics & Development, MD/PhD, Biochemistry, Umbrella and Biomedical sciences PhD programs at Columbia University Irving Medical Center.

Reviewer, Pioneer SCA Translational Research Awards, Young Investigator and Post-doctoral Awards, National Ataxia Foundation.

Reviewer and Scientific Board of the 8th Neapolitan Brain Group Meeting;

Reviewer, *Parkinsonism & Related Disorders*.

Reviewer, Israeli Science Foundation (ISF).

2018– Member of the selection committee for the Genetics & Development, MD/PhD, Biochemistry, Umbrella and Biomedical sciences PhD programs at Columbia University Irving Medical Center.

Reviewer, Pioneer SCA Translational Research Awards, Young Investigator and Post-doctoral Awards, National Ataxia Foundation.

Reviewer, *American Journal of Medical Genetics, Aging, Journal o*f *Pediatric Neurology and Neuroscience*.

Judge, Postdoc Research Symposium, Columbia University Medical Center

Reviewer, AIRETT Onlus Associazione Italiana RETT.

2017– Reviewer, Young Investigator Awards, National Ataxia Foundation.

Reviewer, *Laboratory Investigation* (Nature Publishing Group), *Oncotarget*.

2016– Member, selection committee for the Paola Campese Award, Italian Scientists and Scholars of North America.

Reviewer, *Nucleic Acids Research*, *Human Mutation*, *Bioinformatics*.

Invited reviewer for Italian Scientists and Scholars of North America Award.

2015– Reviewer, *Human Molecular Genetics*.

2013– Reviewer, *Gene*.

2012– Reviewer, *Journal of Plant Physiology, Introduction to Genetics*.

2011– Reviewer, *Genome Research*, *Journal of Theoretical Biology*.
Grant Reviewer, Italian Ministry of Education Universities and Research.

2010– Reviewer, *BMC Genomics, Evolution & Development*.

2009– Reviewer, *BMC Developmental Biology, PLoS One*.

DIDACTIC TEACHING

Columbia University Irving Medical Center

2020– Advanced Eukaryotic Genetics Genetics and Development PhD students (Two lectures per year).

2018– Genetics Approaches II for first year Genetics and Development PhD students, on "Human disease/mouse modelling-neurodegeneration." (Two lectures per year).

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 three lectures a week to ~100 students and was responsible for helping students with questions after class.

MENTORING

2020– Supervisor of Sarallah Rezazadeh, Postdoc fellow (NYSTEM Training Grant) in Genetics and Development, CUIMC.
Mentor of Sandeep Wontakal MD/PhD, Postdoc research fellow, NIH-NINDS/K08 program.
Supervisor of Maximilian Cabaj, student in Genetics and Development PhD program, CUIMC.
Qualifying committee member for Jane Chen, student in Genetics and Development PhD program, CUIMC.

2019– Supervisor of Nicola de Prisco PhD, Postdoc associate in Genetics and Development, CUIMC.
Supervisor of Winston Lee, student in Genetics and Development PhD program, CUIMC.

2018– Supervisor of Lia Boyle, MD/PhD student in Biochemistry and Umbrella and Biomedical sciences PhD programs, CUIMC.

2019– Qualifying committee member for Wanqi Wang, student in Genetics and Development PhD program, CUIMC.

2018– Qualifying committee for Devin Jones, student in Genetics and Development PhD program, CUIMC.
Supervisor of Salvatore Botta, student in Clinical and Experimental Medical Sciences PhD Program, University of Luigi Vanvitelli, Naples, Italy.

Qualifying committee member for Fabiana Longo, student in Translational and Experimental Medicine PhD program, University of Insubria and San Raffaele, Milan, Italy.

Summer students (CUIMC)

2020 Tess Brogard, Dept. of Genetics & Development
Jacob Hess, Dept. of Genetics & Development
2019 Jacob Hess, Dept. of Genetics & Development
Amanda S. Mondschein, Dept. of Genetics & Development

Baylor College of Medicine

2015 Larissa Nitschke, PhD student, Integrative Molecular & Biomedical Sciences
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 (conversational)