



CURRICULUM VITAE

NICOLA LONGO MD PhD

NAME: **Nicola Longo**

Updated 12-Sep-2022

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CITIZENSHIP: USA

II. EDUCATION AND POST-GRADUATE TRAINING

<i>Institution</i>	<i>Date</i>	<i>Degree</i>
Liceo Scientifico Statale <i>Guglielmo Marconi</i> , Parma, Italy	July 1976	Maturita' Scientifica
Univ. Parma Medical School, Italy	November 1982	MD (9/1976-10/Nov/1982)
Univ. Parma, Italy (Chair GG Guidotti MD)	November 1988	PhD Molecular Biology and Pathology
Post-Doctoral Fellow (Louis J Elsas MD)	1985-87	Medical Genetics/Pediatrics
Post-Doctoral Fellow (Gian C Gazzola MD)	1988-1989	Emory Univ., Atlanta, GA Istituto Patologia Generale University of Parma, Italy
Pediatrics Internship	7-9/1993, 1-3/1994 7-9/ 1994, 1-3/1995	Emory University
Residency in Clinical Genetics	7/1/93 – 6/30/96	Emory University
Fellowship in Clinical Biochemical Genetics	6/23/97–11/30/98	Emory University

III. PROFESSIONAL EXPERIENCE

<i>Title</i>	<i>Institution</i>	<i>Date</i>
Assistant Professor	Emory University (Medical Genetics/Pediatrics)	1989-1998
	Emory University (Physiology)	1989-2001
Director of Research	Emory University (Medical Genetics/Pediatrics)	1997-2001
Associate Professor	Emory University (Medical Genetics/Pediatrics)	1998-2001
Associate Professor	University of Utah (Medical Genetics/Pediatrics)	2001-2003
Director, Metabolic Service	University of Utah (Medical Genetics/Pediatrics)	2001-present
Associate Professor	University of Utah (Pathology)	2001-2006
Professor (Tenured)	University of Utah (Medical Genetics/Pediatrics)	2003-present
Professor (Adjunct)	University of Utah (Pathology)	2006-present
Director, Clinical Biochemical Genetics Fellowship Program		
	University of Utah (Medical Genetics/Pediatrics)	2004-2019
Chief, Division of Medical Genetics, University of Utah (Pediatrics)		2007-present
Director, Residency Program Medical Genetics, University of Utah		2014-2015
Associate Director, Residency Program Medical Genetics, University of Utah		2015-Present
Professor (Adjunct) University of Utah (Nutrition and Integrative Physiology)		2019-present
Co-Director, ABMG Clinical Biochemical Genetics Training Program		2019-Present
Director, ABMG Medical Biochemical Genetics Training Program		2020-Present

Attending Physician (Medical Genetics)

Children's Healthcare of Atlanta at Egleston Hospital	3/1997-8/2001
Emory University Hospital	3/1997-8/2001
Crawford Long Hospital	3/1997-8/2001
Grady Memorial Hospital, Atlanta GA	11/1997-8/2001
Primary Children's Medical Center	9/2001-Present
100 Mario Capecchi Dr, Salt Lake City, UT 84113	
University of Utah School of Medicine	9/2001-Present
30 N 1900 E, Salt Lake City, UT, 84132	
Cure 4 the Kids Foundation (Monthly Genetics Clinic)	2011-Present
One Breakthrough Way, Las Vegas, NV 89135	
Alaska Native Medical Center (quarterly genetics clinics)	2020-Present
4315 Diplomacy Drive, Anchorage, AK 99508	

LICENSURES AND BOARDS

<i>State</i>	<i>Number</i>	<i>Year</i>
Italy	1466	1/1983
ECFMG (USA)	04697926	07/15/1992
FLEX (USA)	570427026	12/1993
Georgia, USA	040144 (inactive)	06/08/1995
Utah, USA	4916705-1205	09/12/2001
Nevada, USA	12808	7/11/2008
Wyoming, USA	8948A	09/11/2011
Alaska, USA	150326	01/07/2020
DEA	BL4639413	2001 (UT)
DEA	FL5013747	04-02-2018 (NV)
DEA	FL9102221	03/02/2020 (AK)
American Board of Medical Genetics		
Clinical Genetics	96117	09/27/96 rec. 2005, 12/4/09, MOC
Clinical Biochemical Genetics	99095	09/01/1999 rec. 12/4/2009, MOC

CLINICAL SERVICE CONTRIBUTIONS

Consultant , Emory Genetics DNA Diagnostic Laboratory,	1989-1994
Consultant , Emory Genetics Biochemical Genetics Laboratory	1994-1998
Assistant Director , Biochemical Genetics Laboratory	1998-2001
Emory Genetics Laboratories, Atlanta GA	
Consultant , ARUP Laboratories, Biochemical Genetics Laboratory	2001-2002
Co-Director , ARUP Biochemical Genetics & Newborn Screening Laboratory	2003-2019
Co-Director , ARUP Biochemical Genetics Laboratory	2019-Present
ARUP Laboratories at the University of Utah, Salt Lake City UT 84108	

SCIENTIFIC REVIEW COMMITTEE - STUDY SECTIONS

- Telethon, Italy (1996-2000)
- CDC Nutritional Biochemistry special emphasis panel: Innovative technology development grant for the detection and monitoring of diabetic hypoglycemia (1999), Member
- NIH-NIDDK Special Emphasis Panel - Diabetes Research Centers (2001,2002)-Ad Hoc Member
- NIH-NIDDK General Medicine B Study Section (2002), Ad Hoc Member
- Italian Research Ministry, Reviewer, 2003
- NIH-NIDDK Special Emphasis Panel (ZDK1-GRB8-M1) Small Grants in Digestive Diseases and Nutrition (2004-2006), Member

- AHA Western Regional Study Section, Member, 2004-2008.
- NIH-NICHD SEP Novel Technologies in Newborn Screening, 2006
- Cineca (Consortium of Italian Universities, Research Institutions, and the Italian Ministry of Education) 2004-2008, reviewer
- NIH-NIDDK, Rare Disease Network, Data Safety and Motoring Board, 2006-2009
- NIH-NIDDK SEP ZRG1 MDCN-J (91) S Molecular and Cellular Neuroscience, 2007
- NIH-NICHD SEP ZHD1-DRG-A (01) Newborn Screening: Translational Research Network Coordinating Review, 2007, 2008, 2009
- NIH-NIDDK ZRG1 ETTN-G (02) SEP Molecular Neurogenetics, 2008.
- AHA Western Regional Study Section, Co-Chair, 2009
- ACMG Newborn Screening National Coordinating Center Work Group, 2008-2012
- NIH-NIDDK 2009/05 ZRG1 HOP-Y (50) R Rare Diseases Clinical Research Consortia, 2009
- AHA Western Regional Study Section, Chair, 2010.
- AHA National Study Section, Vice-Chair, 2011-2012
- NIH- Center for Scientific Review: Therapeutic Approaches to Genetic Diseases (TAG), Study Section Member, 07/2011-06/2017
- NIH-NICHD, Rare Disease Network, Data Safety and Motoring Board, 2010-2011
- Poland Science Foundation, 2012, Reviewer
- NIH-NICHD, Chair, Rare Disease Network, Data Safety and Motoring Board, 2011-2014
- NIH-TRND, CincY as a Treatment for Creatine Transporter Deficiency, Advisory Board Member 2012-Present
- Wellcome Trust, UK, Reviewer, 2015
- NIH-NICHD, Chair, Data Safety and Motoring Board, Rare Disease Network, 2014-2019
- Reviewer-Site visitor: NIH/NIHGRI, Bethesda, MD 6-7 June 2016
- ERA-Net for Research Programmes on Rare Diseases (European Union), Reviewer, 2017
- Swiss National Science Foundation, Reviewer, 2017
- Galactosemia Foundation, Reviewer 2017
- NIH-NICHD, Chair, Study Section, Newborn Screening Translational Research Network (NBSTRN) 13 Aug 2018
- Japan Agency for Medical Research and Development (AMED), 2018, reviewer
- The Netherlands Organisation for Health Research and Development, Reviewer, 2018
- King Abdullah International Medical Research Center (KAIMRC), reviewer, 2014, 2018
- NIH BST IRG Small Business: Biomaterials, Delivery, and nanotechnology Study Section, 5 Nov 2018
- Telethon Rare Disorders, Italy, Reviewer 2019
- NIH-NIAID, Chair, Resource Related Research Projects, Study Section 20 Oct 2021
- Swiss National Science Foundation, Reviewer, 2021
- NIH-NIAID, Chair, Resource Related Research Projects, Study Section 20 May 2022

EDITORIAL EXPERIENCE - MANUSCRIPT REVIEWER FOR SCIENTIFIC JOURNALS

-Archives of Biochemistry and Biophysics	-American Journal of Medical Genetics
-American Journal of the Medical Sciences	-American Journal of Human Genetics
-American Journal of Physiology	-Biochemical Pharmacology
-Biochimica et Biophysica Acta	-Brain
-Diabetes	-FASEB Journal
-FEBS Letters	-Genetics in Medicine
-Human Genetics	-Human Mutation
-Journal of Clinical Endocrinology and Metabolism	-Journal of Biological Chemistry
-Journal of Clinical Investigation	-Pediatric Research
-Journal of Inherited Metabolic Disorders	-Pediatrics
-Journal of Pediatric Endocrinology and Metabolism	-Journal of Pediatrics

-Journal of Pharmacology and Experimental Therapeutics -Journal of Neurochemistry
 -Molecular Genetics and Metabolism -Molecular and Cellular Biochemistry
 -New England Journal of Medicine -PloS Genetics
 -Proceedings of the National Academy of Sciences USA

RESEARCH GRANTS, CONTRACTS, AND AWARDS

ACTIVE

U54HD100982-01 Cary Harding project PI, Nicola Longo Local PI 09/16/2019 – 08/31/2024 NIH
Hyperphenylalaninemia Disorders Consortium of the Rare Disease Clinical Research Network
U54HD100982-01 (Nicola Longo) 09/16/2019 – 08/31/2024 NIH
Hyperphenylalaninemia Disorders Consortium of the Rare Disease Clinical Research
NetworkPilot/Feasibility Core

The objective of this project is to define the natural history and devise new therapies for the hyperphenylalaninemias.

As PI of the feasibility core, I need to solicit and select novel project applications in the field of hyperphenylalaninemia.

5R13HD062129-08 (Longo) 7/14/2009-01/31/2023 NIH/NIDDK/NICHD/NINDS
Society for Inherited Metabolic Disorders Annual Meeting

This grant support attendance of young investigators to the SIMD annual meeting

UFDSP00011718 (Stacpoole, Longo site PI) 06/01/2017-05/31/2022 NIH/NICHD
Phase 3 Trial of DCA in PDC Deficiency IND 028,625 The objective of this study is to evaluate the efficacy of dichloroacetate in the treatment of pyruvate dehydrogenase deficiency.

09/01/2008 – 12/31/2023 (Longo N PI) PROJECT : 50300913 - LYSOSOMAL STORAGE
 Genzyme Corp/ Sanofi Aventis
 Registry for patients with lysosomal storage disorders

07/01/2002 – 12/31/2025 (Longo N PI) 50301676 - PKUDOS- PKU DEMOGRAPHICS, OUTCOMES, AND
 SAFETY REGISTRY BioMarin Pharmaceutical Corp
 Registry for patients with phenylketonuria

12/14/18 - 12/31/22 Atb200-03 Pompe disease
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$519,926 Total Costs: \$622,805
 Role: Principal Investigator

09/26/18 - 12/31/22 Pb-102-F51 Fabry Disease
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$200,592 Total Costs: \$245,119
 Role: Principal Investigator

07/01/18 - 06/30/23 Metabolic Program Support
 Principal Investigator(s): Nicola Longo
 Yearly Direct Costs: \$138,075 Total Costs: \$138,075
 Utah Department of Health
 Role: Principal Investigator

06/25/18 - 12/31/23 Mrna-3704-P001 Mma Methylmalonic acidemia
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$31,462 Total Costs: \$42,757
 Moderna Therapeutics
 Role: Principal Investigator

03/26/18 - 12/31/22 Pbd-001 Cnsa-001 PTPS deficiency
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$78,364 Total Costs: \$98,815
 Role: Principal Investigator

03/16/18 - 12/30/22 Poms-003 Amicus Pompe

Principal Investigator(s): Nicola Longo
Direct Costs: \$109,397 Total Costs: \$143,544
Role: Principal Investigator

02/12/18 - 12/31/21 Msc12790/Agluo7710 Pompe Pk
Principal Investigator(s): Nicola Longo
Direct Costs: \$33,331 Total Costs: \$42,867
Role: Principal Investigator

12/01/17 - 12/31/21 Spimm-301 Mitochondrial disorders
Principal Investigator(s): Nicola Longo
Direct Costs: \$257,751 Total Costs: \$321,750
Stealth BioTherapeutics Inc.
Role: Principal Investigator

11/27/17 - 12/31/21 Hpn-100-021 Urea cycle disorders
Principal Investigator(s): Nicola Longo
Direct Costs: \$178,522 Total Costs: \$221,434
Role: Principal Investigator

06/15/17 - 12/31/20 Caeb1102-101^a Arginase deficiency
Principal Investigator(s): Nicola Longo
Direct Costs: \$142,135 Total Costs: \$175,328
Aeglea BioTherapeutics
Role: Principal Investigator

05/24/17 - 12/31/20 Spimm-300 Mitochondrial disorders
Principal Investigator(s): Nicola Longo
Direct Costs: \$23,338 Total Costs: \$31,491
Role: Principal Investigator

05/06/17 - 12/31/20 Pb-102-F50 Brigt Fabry
Principal Investigator(s): Nicola Longo
Direct Costs: \$288,818 Total Costs: \$352,837
Role: Principal Investigator

03/21/17 - 12/31/21 Lum-001-C-01 Creatine transporter deficiency (basic science)
Principal Investigator(s): Nicola Longo
Direct Costs: \$77,591 Total Costs: \$101,402
Role: Principal Investigator

03/13/17 - 12/31/21 Neogaa - Efc14028 Pompe
Principal Investigator(s): Nicola Longo
Direct Costs: \$265,446 Total Costs: \$323,400
Role: Principal Investigator

12/05/16 - 12/31/20 Balance Fabry
Principal Investigator(s): Nicola Longo
Direct Costs: \$452,825 Total Costs: \$599,964
Protalix Biotherapeutics
Role: Principal Investigator

08/15/16 - 12/30/22 B3031002 Tali Registry Gaucher
Principal Investigator(s): Nicola Longo
Direct Costs: \$12,563 Total Costs: \$17,149
Pfizer Inc.
Role: Principal Investigator

02/05/16 - 02/05/21 Pompe Subregistry Lts13930
Principal Investigator(s): Nicola Longo
Direct Costs: \$15,261 Total Costs: \$20,251
Role: Principal Investigator

07/01/14 - 12/31/21 701-301 Pompe Bmrn
Principal Investigator(s): Nicola Longo
Direct Costs: \$267,853 Total Costs: \$303,062
Role: Principal Investigator

03/15/14 - 12/31/24 Thrive Ucd Registry
Principal Investigator(s): Nicola Longo
Direct Costs: \$121,900 Total Costs: \$161,761
Hyperion Therapeutics, Inc.
Role: Principal Investigator

12/01/12 - 12/31/23 Gos Gaucher
Principal Investigator(s): Nicola Longo
Direct Costs: \$36,182 Total Costs: \$48,013
PharmaNet, Inc.
Role: Principal Investigator

Past Grants

02/07/19 - 02/28/20 Synlogic Pku Mutation Consult
Principal Investigator(s): Nicola Longo
Direct Costs: \$18,315 Total Costs: \$25,000
Synlogic
Role: Principal Investigator

02/04/19 - 02/27/19 Horizon Consulting NI
Principal Investigator(s): Nicola Longo
Direct Costs: \$2,954 Total Costs: \$4,032
Role: Principal Investigator

12/03/18 - 12/31/19 Mma Phase1-2 Study
Principal Investigator(s): Nicola Longo
Direct Costs: \$3,909 Total Costs: \$5,336
Moderna Therapeutics
Role: Principal Investigator

11/29/18 - 12/31/19 Biomarin Sow #20
Principal Investigator(s): Nicola Longo
Direct Costs: \$1,505 Total Costs: \$2,054
Role: Principal Investigator

11/01/18 - 08/01/19 Bmrn Japan Ad Board Pegvalias
Principal Investigator(s): Nicola Longo
Direct Costs: \$3,663 Total Costs: \$5,000
Role: Principal Investigator

09/20/18 - 03/19/19 Pb-102-F60
Principal Investigator(s): Nicola Longo
Direct Costs: \$1,055,177 Total Costs: \$1,280,179
Role: Principal Investigator

09/18/18 - 09/30/19 Biomarin Sow #18
Principal Investigator(s): Nicola Longo
Direct Costs: \$5,273 Total Costs: \$7,198
Role: Principal Investigator

08/01/18 - 08/01/19 Biomarin Sow #17
Principal Investigator(s): Nicola Longo
Direct Costs: \$5,614 Total Costs: \$7,663
Role: Principal Investigator

07/25/18 - 07/31/19 Coa NI Scientific Board
Principal Investigator(s): Nicola Longo
Direct Costs: \$1,172 Total Costs: \$1,600
CoA Therapeutics
Role: Principal Investigator

06/27/18 - 11/04/18 Bmrn Sow#16
Principal Investigator(s): Nicola Longo
Direct Costs: \$1,172 Total Costs: \$1,600
Role: Principal Investigator

06/01/18 - 06/30/18 Leadiant Biosciences NI Consu
Principal Investigator(s): Nicola Longo
Direct Costs: \$1,099 Total Costs: \$1,500
Leadiant Biosciences, Inc.
Role: Principal Investigator

04/26/18 - 11/04/18 Bmrn Sow#15
Principal Investigator(s): Nicola Longo
Direct Costs: \$1,465 Total Costs: \$2,000
Role: Principal Investigator

04/26/18 - 11/04/18 Advisor Agreement Brain Pku
Principal Investigator(s): Nicola Longo
Direct Costs: \$3,663 Total Costs: \$5,000
Role: Principal Investigator

03/14/18 - 12/31/18 Evidera Longo Consulting
Principal Investigator(s): Nicola Longo
Direct Costs: \$1,099 Total Costs: \$1,500
Evidera
Role: Principal Investigator

03/08/18 - 03/31/19 NI Reneo Consulting Agreement
Principal Investigator(s): Nicola Longo
Direct Costs: \$1,099 Total Costs: \$1,500
Reneo Pharmaceuticals, Inc.
Role: Principal Investigator

02/27/18 - 12/31/18 Synlogic Advisory Longo Ucd
Principal Investigator(s): Nicola Longo
Direct Costs: \$18,315 Total Costs: \$25,000
Synlogic
Role: Principal Investigator

02/08/18 - 12/31/18 Ovid Ov101-15-001 Stars
Principal Investigator(s): Nicola Longo
Direct Costs: \$2,198 Total Costs: \$3,000
Ovid Therapeutics
Role: Principal Investigator

02/05/18 - 02/04/19 Logicbio Consulting NI
Principal Investigator(s): Nicola Longo
Direct Costs: \$43,956 Total Costs: \$60,000
LogicBio Therapeutics, Inc.
Role: Principal Investigator

12/22/17 - 12/31/18 Bmrn Sow#13 Longo
Principal Investigator(s): Nicola Longo
Direct Costs: \$411 Total Costs: \$561
Role: Principal Investigator

11/01/17 - 05/31/18 Bmrn Sow #12 Texas Mtg
Principal Investigator(s): Nicola Longo
Direct Costs: \$2,198 Total Costs: \$3,000
Role: Principal Investigator

08/21/17 - 12/31/17 Bmrn Sow #11 Pegvaliase Recom
Principal Investigator(s): Nicola Longo
Direct Costs: \$1,924 Total Costs: \$2,626
Role: Principal Investigator

08/10/17 - 08/01/18 Nestec Consultant NI
Principal Investigator(s): Nicola Longo
Direct Costs: \$2,562 Total Costs: \$3,497
Nestec S.A.
Role: Principal Investigator

08/01/17 - 12/31/17 Bmrn Sow #12 Peg Advisory Boar
Principal Investigator(s): Nicola Longo
Direct Costs: \$274 Total Costs: \$374
Role: Principal Investigator

07/19/17 - 07/19/19 Moderna Consulting Agreement
Principal Investigator(s): Nicola Longo
Direct Costs: \$8,789 Total Costs: \$11,997
Moderna Therapeutics
Role: Principal Investigator

07/10/17 - 12/31/18 Sow 11 - Ny Oct 2017
Principal Investigator(s): Nicola Longo
Direct Costs: \$3,121 Total Costs: \$4,260
Role: Principal Investigator

03/31/17 - 03/31/19 Consultingagreement Orphantech

Principal Investigator(s): Nicola Longo
Direct Costs: \$1,829 Total Costs: \$2,497
Orphan Technologies
Role: Principal Investigator

03/31/17 - 06/30/17 Biomarin Sow #9 - Peg Mtg P2
Principal Investigator(s): Nicola Longo
Direct Costs: \$1,099 Total Costs: \$1,500
Role: Principal Investigator

03/14/17 - 03/14/20 Hemoshear Consulting Agreement
Principal Investigator(s): Nicola Longo
Direct Costs: \$47,471 Total Costs: \$64,798
HemoShear Therapeutics, LLC
Role: Principal Investigator

01/13/17 - 01/13/18 La Jolla Pharm Consulting Agre
Principal Investigator(s): Nicola Longo
Direct Costs: \$17,948 Total Costs: \$24,499
La Jolla Pharmaceutical Company
Role: Principal Investigator

11/01/16 - 12/31/17 Pku Burden
Principal Investigator(s): Nicola Longo
Direct Costs: \$16,895 Total Costs: \$23,062
Role: Principal Investigator

10/07/16 - 10/07/18 Pkudos Consulting Sow #8
Principal Investigator(s): Nicola Longo
Direct Costs: \$14,640 Total Costs: \$19,983
Role: Principal Investigator

09/23/16 - 12/22/16 Pegvaliase Treatment Algorithm
Principal Investigator(s): Nicola Longo
Direct Costs: \$1,130 Total Costs: \$1,500
Role: Principal Investigator

08/05/16 - 12/31/19 Rp-103-Mito-002
Principal Investigator(s): Nicola Longo
Direct Costs: \$61,402 Total Costs: \$74,994
Role: Principal Investigator

07/15/16 - 12/31/16 Ravicti Advisory Board
Principal Investigator(s): Nicola Longo
Direct Costs: \$732 Total Costs: \$1,000
Horizon Pharma plc
Role: Principal Investigator

06/01/16 - 05/31/18 Bmrn Sow #10 Jismd
Principal Investigator(s): Nicola Longo
Direct Costs: \$12,800 Total Costs: \$17,472
Role: Principal Investigator

06/01/16 - 05/31/17 Dca In Pdc Deficiency
Principal Investigator(s): Nicola Longo
Direct Costs: \$5,199 Total Costs: \$7,746
Role: Principal Investigator

06/01/16 - 12/30/16 Registry 2016 NI
Principal Investigator(s): Nicola Longo
Direct Costs: \$1,808 Total Costs: \$2,399
Role: Principal Investigator

05/17/16 - 05/17/18 Censa Pharma Consulting
Principal Investigator(s): Nicola Longo
Direct Costs: \$6,795 Total Costs: \$9,275
Censa Pharmaceuticals Inc.
Role: Principal Investigator

04/29/16 - 12/31/16 Mitobridge Consulting Faod
Principal Investigator(s): Nicola Longo
Direct Costs: \$3,765 Total Costs: \$4,996

Mitobridge, Inc.
 Role: Principal Investigator
 04/01/16 - 12/31/19 Ux007-CI202
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$53,809 Total Costs: \$66,658
 Role: Principal Investigator
 03/07/16 - 12/30/17 Vts301 Phase 2b/3 Npc
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$4,943 Total Costs: \$6,747
 Role: Principal Investigator
 03/01/16 - 12/31/19 Retrophin Ctx 018ctxx15001
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$29,204 Total Costs: \$38,190
 Retrophin, Inc.
 Role: Principal Investigator
 11/10/15 - 11/10/18 Biomarin Sow6 Kuvan
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$15,072 Total Costs: \$20,000
 Role: Principal Investigator
 11/03/15 - 12/31/17 Lumos Creatine Lab Support
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$30,143 Total Costs: \$40,000
 Lumos Pharma, Inc.
 Role: Principal Investigator
 10/27/15 - 10/26/17 Peg-Pal P3 Steering Sow#4
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$22,606 Total Costs: \$30,000
 Role: Principal Investigator
 10/27/15 - 01/26/16 Pegvaliase Japan Mtg Nov 15
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$1,846 Total Costs: \$2,450
 Role: Principal Investigator
 06/30/15 - 12/31/18 Hpn-100-009
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$168,924 Total Costs: \$203,916
 Hyperion Therapeutics, Inc.
 Role: Principal Investigator
 06/30/15 - 12/31/17 165-303
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$14,995 Total Costs: \$19,643
 Role: Principal Investigator
 06/30/15 - 12/29/17 Mito-001
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$76,438 Total Costs: \$96,366
 Raptor Pharmaceutical Corp.
 Role: Principal Investigator
 11/18/14 - 11/18/17 Dimension Scientific Advisory
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$22,600 Total Costs: \$29,990
 Dimension Therapeutics
 Role: Principal Investigator
 10/03/14 - 10/02/15 Codexis Pku Consulting Agreeeme
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$2,260 Total Costs: \$3,000
 Codexis, Inc.
 Role: Principal Investigator
 06/01/14 - 12/31/14 Mgm116041 - Gsk Fabry
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$7,784 Total Costs: \$10,329
 GlaxoSmithKline

Role: Principal Investigator
 05/16/14 - 07/06/14 Consulting Agreement Lee Pharm
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$3,605 Total Costs: \$4,784
 Lee's Pharmaceutical Holdings Limited
 Role: Principal Investigator
 04/01/14 - 12/31/18 Msc12711/Agal19110 Fabry Map
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$13,120 Total Costs: \$16,527
 Role: Principal Investigator
 02/20/14 - 12/31/17 Ux007-CI201
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$178,038 Total Costs: \$213,358
 Ultragenyx Pharmaceutical Inc.
 Role: Principal Investigator
 11/18/13 - 12/31/19 165-302
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$1,025,526 Total Costs: \$1,279,032
 Role: Principal Investigator
 04/15/13 - 04/14/14 Pfizer Gaucher Advisory 22apr
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$2,261 Total Costs: \$3,000
 Pfizer Inc.
 Role: Principal Investigator
 03/05/13 - 03/04/16 Pkudos Advisory Board
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$22,607 Total Costs: \$30,000
 Role: Principal Investigator
 11/04/12 - 11/03/14 Peg-Pal Phase 3 Steering Committee
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$15,072 Total Costs: \$20,000
 Role: Principal Investigator
 10/31/12 - 11/01/13 Hyperion Ucd National Advisory
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$1,884 Total Costs: \$2,500
 Hyperion Therapeutics, Inc.
 Role: Principal Investigator
 08/01/12 - 02/28/15 Live Cell Assay
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$248,681 Total Costs: \$330,000
 Marker Gene Technologies, Inc.
 Role: Co-Principal Investigator
 07/14/12 - 02/28/15 Simd Annual Meeting
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$40,000 Total Costs: \$40,000
 Eunice Kennedy Shriver National Institute of Child Health and Human Development
 Role: Principal Investigator
 06/27/12 - 12/31/13 Pact
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$15,000 Total Costs: \$19,905
 Symbiotix, Inc.
 Role: Principal Investigator
 05/04/12 - 12/31/16 Biomarin 165-301
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$301,580 Total Costs: \$374,936
 Role: Principal Investigator
 04/01/12 - 12/31/14 Biomarin 205-165
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$163,306 Total Costs: \$197,237

BioMarin Pharmaceutical, Inc.
 Role: Principal Investigator
 07/19/11 - 07/31/12 Bpms-1001
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$5,014 Total Costs: \$6,654
 Hantel Technologies, Inc.
 Role: Principal Investigator
 07/01/11 - 06/30/12 Biomarin Oard Bh4 Autism
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$1,507 Total Costs: \$2,000
 BioMarin Pharmaceutical, Inc.
 Role: Principal Investigator
 07/01/11 - 06/30/12 Genzyme Fellowship Support
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$60,000 Total Costs: \$60,000
 Genzyme Corporation
 Role: Principal Investigator
 06/01/11 - 12/31/13 Hgt-Rep-084
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$88,022 Total Costs: \$102,152
 Shire Human Genetic Therapies
 Role: Principal Investigator
 03/01/11 - 12/31/12 Pal-004
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$60,796 Total Costs: \$75,503
 BioMarin Pharmaceutical, Inc.
 Role: Principal Investigator
 02/28/11 - 02/27/14 Consulting Agreement Pku-016
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$33,911 Total Costs: \$45,000
 BioMarin Pharmaceutical, Inc.
 Role: Principal Investigator
 02/11/11 - 02/10/12 Hyperion Advisory Mtg
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$1,356 Total Costs: \$1,800
 ScienceVision LLC
 Role: Principal Investigator
 02/01/11 - 06/30/11 Food Frequency Questionnaire
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$35,000 Total Costs: \$35,000
 BioMarin Pharmaceutical, Inc.
 Role: Principal Investigator
 01/01/11 - 12/31/16 Encore (Gzgd02607)
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$55,995 Total Costs: \$64,044
 Genzyme Corporation
 Role: Principal Investigator
 01/01/11 - 12/31/15 Hgt-Hit-046: Hunter It
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$109,320 Total Costs: \$133,296
 Shire Human Genetic Therapies
 Role: Principal Investigator
 12/08/10 - 12/07/11 Nutricia Consulting Agreement
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$1,507 Total Costs: \$2,000
 Nutricia North America, Inc.
 Role: Principal Investigator
 07/01/10 - 05/31/13 Pb-06-004
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$33,741 Total Costs: \$40,621

Target Research Associates, Inc
 Role: Principal Investigator
 05/30/10 - 06/01/13 Consultant Agreement
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$7,084 Total Costs: \$9,400
 Pfizer Inc.
 Role: Principal Investigator
 05/01/10 - 12/31/10 Cz-011-01 - Mri Study
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$200 Total Costs: \$200
 Genzyme Corporation
 Role: Principal Investigator
 04/01/10 - 12/31/14 Gzgd03109-Edge
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$80,291 Total Costs: \$92,217
 Genzyme Corporation
 Role: Principal Investigator
 02/01/10 - 12/23/10 Adapt
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$32,027 Total Costs: \$42,500
 Symbiotix, Inc.
 Role: Principal Investigator
 01/01/10 - 12/31/13 At1001-011
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$43,960 Total Costs: \$52,831
 Amicus Therapeutics, Inc.
 Role: Principal Investigator
 10/15/09 - 12/31/14 Hpn-100-007
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$202,476 Total Costs: \$253,196
 Hyperion Therapeutics, Inc.
 Role: Principal Investigator
 07/14/09 - 02/28/11 Simd Annual Meeting
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$29,000 Total Costs: \$29,000
 National Institutes of Health
 Role: Principal Investigator
 04/13/09 - 12/31/17 Pku-015
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$110,043 Total Costs: \$140,439
 BioMarin Pharmaceutical, Inc.
 Role: Principal Investigator
 01/15/09 - 01/30/19 Mps Vi Csp
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$3,781 Total Costs: \$5,017
 Role: Principal Investigator
 10/01/08 - 05/31/11 Carnitine Transporter
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$86,340 Total Costs: \$129,942
 National Institute of Diabetes and Digestive and Kidney Diseases
 Role: Principal Investigator
 09/01/08 - 12/31/13 Pkudos Registry
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$2,504 Total Costs: \$3,323
 BioMarin Pharmaceutical, Inc.
 Role: Principal Investigator
 09/01/08 - 08/31/11 Shire 044 Ga-Gcb
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$26,421 Total Costs: \$33,138

Quintiles Transnational Corporation
 Role: Principal Investigator
 07/01/08 - 12/31/14 Myozyme Iti
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$134,987 Total Costs: \$159,687
 Genzyme Corporation
 Role: Principal Investigator
 02/28/08 - 12/31/19 Pal-001
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$2,713,500 Total Costs: \$3,506,998
 BioMarin Pharmaceutical, Inc.
 Role: Principal Investigator
 08/15/07 - 06/30/09 Anaplerotic Therapy In Propionic Acidemia
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$272,500 Total Costs: \$408,613
 National Institutes of Health
 Role: Principal Investigator
 07/20/07 - 12/31/11 Mtap
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$9,412 Total Costs: \$12,000
 Genzyme Corporation
 Role: Principal Investigator
 06/01/07 - 05/30/17 Hunter Outcome Survey
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$5,882 Total Costs: \$7,500
 Shire Human Genetic Therapies
 Role: Principal Investigator
 06/01/07 - 12/31/09 Pku-Seap-001
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$7,795 Total Costs: \$9,502
 BioMarin Pharmaceutical, Inc.
 Role: Principal Investigator
 05/01/07 - 12/31/09 Tkt034 (Shire)
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$30,745 Total Costs: \$37,227
 Quintiles Transnational Corporation
 Role: Principal Investigator
 03/01/06 - 05/31/13 NIH R01 DK 53824 Carnitine Transporter in Human Disease
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$919,680 Total Costs: \$1,371,577
 National Institute of Diabetes and Digestive and Kidney Diseases
 Role: Principal Investigator
 01/01/06 - 12/31/06 Newborn Screening Surveillance Program
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$27,273 Total Costs: \$30,000
 Mountain States Genetic Foundation
 Role: Principal Investigator
 05/01/05 - 08/31/06 Non-Invasive Blood Phenylalanine Monitor.
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$17,584 Total Costs: \$22,420
 Aciont Inc.
 Role: Principal Investigator
 09/01/04 - 01/31/07 Expanded Access Use Of Recombinant Human Acid Alpha-Gluc
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$15,150 Total Costs: \$16,550
 Genzyme Corporation
 Role: Principal Investigator
 07/01/04 - 06/30/06 0455086Y Carnitine in Heart Disease.
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$70,000 Total Costs: \$70,000

Role: Principal Investigator
 07/01/04 - 06/30/06 Phase 4...Study...Cerezyme Infusions Every 4 Weeks Vs Ev
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$60,133 Total Costs: \$60,133
 Genzyme Corporation
 Role: Principal Investigator
 01/01/04 - 12/31/06 NIH-NIDDK R43DK HD60308
 Non-invasive phenylalanine monitor
 Direct Costs: \$100,000 Total Costs: \$100,000
 National Institute of Diabetes and Digestive and Kidney Diseases
 Role: Co-Investigator
 09/01/03 - 08/31/05 OPEN-LAPEL...PHARMACOKINETICS...RECOMBINANT HUMAN ACID A
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$84,613 Total Costs: \$84,613
 Genzyme Corporation
 Role: Primary Investigator
 04/01/02 - 03/31/03 The Insulin Receptor in Human Growth. Funding Incentive Seed Grant.
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$31,800 Total Costs: \$31,800
 University of Utah Research Foundation
 Role: Principal Investigator
 09/01/01 - 05/31/05 THE CARNITINE TRANSPORTER IN HUMAN DISEASE.
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$758,950 Total Costs: \$758,950
 National Institute of Diabetes and Digestive and Kidney Diseases
 Role: Primary Investigator
 09/01/00 - 08/31/01 Dean's Clinical Investigator Award
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$50,000 Total Costs: \$50,000
 Emory University School of Medicine
 Role: Principal Investigator
 02/01/00 - 01/31/01 Insulin regulation of Cell Growth. Emory University Research Committee
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$30,000 Total Costs: \$30,000
 Emory University School of Medicine
 Role: Principal Investigator
 06/01/99 - 05/31/00 Inhibition of carnitine transport by novel pharmaceutical compounds
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$1,350 Total Costs: \$1,350
 Merck & Co., Inc.
 Role: Principal Investigator
 04/01/99 - 03/31/00 Carnitine transporters in human disease. Emory Children's Center
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$25,000 Total Costs: \$25,000
 Emory University School of Medicine
 Role: Principal Investigator
 09/01/96 - 08/01/97 Genotype-Phenotype correlation in lysyl hydroxylase deficiency (Ehlers-Danlos
 Syndrome type VI) Research Committee
 Direct Costs: \$15,000 Total Costs: \$15,000
 Emory University
 Role: Co-Investigator
 07/01/96 - 06/30/97 Genes controlling human growth
 Principal Investigator(s): Nicola Longo
 Direct Costs: \$67,000 Total Costs: \$67,000
 Genentech Foundation For Growth and Development
 Role: Principal Investigator
 09/01/95 - 02/28/01 NIH R29 DK 48742
 Regulation of ion fluxes by the human insulin receptor
 Principal Investigator(s): Nicola Longo

Direct Costs: \$348,711 Total Costs: \$348,711
National Institute of Diabetes and Digestive and Kidney Diseases
Role: Principal Investigator
07/01/93 - 06/30/94 IRG 182-A
The insulin receptor in tumor growth
Principal Investigator(s): Nicola Longo
Direct Costs: \$9,000 Total Costs: \$9,000
American Cancer Society
Role: Principal Investigator
07/01/92 - 06/30/93 The insulin receptor in inherited insulin resistance. Emory-Egleston CRC
Principal Investigator(s): Nicola Longo
Direct Costs: \$23,000 Total Costs: \$23,000
Emory University School of Medicine
Role: Principal Investigator
07/01/91 - 06/30/94 Insulin effect on the membrane potential of cells with genetically altered insulin receptors
North Atlantic Treaty Organization
Role: Co-Investigator
07/01/90 - 06/30/91 Insulin and growth factors interactions in the regulation of glucose transporter gene expression. Research Committee
Principal Investigator(s): Nicola Longo
Direct Costs: \$4,000 Total Costs: \$4,000
Emory University School of Medicine
Role: Principal Investigator
07/01/89 - 06/30/91 Molecular basis for hormonal regulation of glucose transport in human fibroblasts. Emory-Egleston CRC
Principal Investigator(s): Nicola Longo
Direct Costs: \$23,000 Total Costs: \$23,000
Emory University School of Medicine
Role: Principal Investigator
07/01/88 - 06/30/92 NIH R01-DK 40362
Insulin receptors in heritable insulin-resistance
National Institute of Diabetes and Digestive and Kidney Diseases
Role: Co-Investigator
07/01/86 - 06/30/87 Emory-Egleston CRC
Molecular biology of the insulin receptor
Principal Investigator(s): Nicola Longo
Direct Costs: \$10,000 Total Costs: \$10,000
Emory University School of Medicine
Role: Principal Investigator

Past Contracts

Contract (Longo) 02/20/14 - 12/31/17 Ultragenyx Pharmaceutical Inc.
OPEN-LABEL PHASE 2 STUDY TO ASSESS SAFETY & CLINICAL EFFECTS OF UX007 ON LONG-CHAIN FATTY ACID OXIDATION DISORDERS (LC-FAOD) Ux007-CI201. The objective of this trial is to determine efficacy of triheptanoin in the treatment of patients with long-chain fatty acid disorders

Contract (Longo) 06/30/2015-12/31/2018 HORIZON THERAPEUTICS INC
HPN-009 OPEN LABEL STUDY OF SAFETY EFFICACY & PK OF GLYCEROL PHENYLBUTYRATE (GPB; RAVICTI) IN SUBJECTS UNDER TWO With UREA CYCLE DISORDERS. The objective of this trial is to establish efficacy and safety of glycerol phenylbutyrate in patients with urea cycle defects younger than 2 years of age.

Contract (Longo) 03-15-2014-12-31-2024 Horizon Pharma/United biosource
THRIVE HPN-100-014 UCD REGISTRY The goal of this research is to study the natural history of patients with urea cycle defects treated with glycerol phenylbutyrate

Contract (Longo) 03/02/2016-12/31/2019 RETROPHIN INC
PREVALENCE OF CEREBROTENDINOUS XANTHOMATOSIS (CTX) IN PT POPULATIONS DIAGNOSED W/EARLY-ONSET IDIOPATHIC BILATERAL CATARACTS. The objective of this trial is to determine the prevalence of cerebrotendinous xanthomatosis in patients with bilateral cataracts.

Contract (Longo) 09/01/2008-12/31/2023 BioMarin Pharmaceutical Inc.
PKUDOS- PKU DEMOGRAPHICS, OUTCOMES, AND SAFETY REGISTRY The goal of this research is to study the natural history of patients with phenylketonuria, receiving or not sapropterin.

Contract (Longo) 04/13/2009-12/31/2017 BioMarin Pharmaceutical Inc.
EFFECT OF KUVAN ON NEUROCOGNITIVE FUNCTION OF BLOOD PHENYLALANINE CONCENTRATIONS, SAFETY & POPULATION PHARMACOKINETICS IN PHENYLKETONURIC PATIENTS The goal of this research is to define neuropsychological outcome in patients with phenylketonuria receiving sapropterin

Contract (Longo) 2/01/2008-8/31/2019 BioMarin Pharmaceutical Inc.
PEG-PAL-003, 165-301, 205-165 PHASE 1-3 CLINICAL TRIAL OF rAvPAL-PEG IN PHENYLKETONURIA. The goal of this research is to define whether patients with phenylketonuria respond to therapy with injectable recombinant phenylalanine ammonia lyase (PEGylated).

Contract (Longo) 01/01/2014-01/30/2019 BioMarin Pharmaceutical Inc **MPS VI CLINICAL SURVEILLANCE PROGRAM** The goal of this research is to study the natural history of patients with mucopolysaccharidosis type VI (Maroteaux-Lamy syndrome)

Contract (Longo) 02/05/2016-02/15/2021 Genzyme Corp
SUB-REGISTRY OF ANAPHYLAXIS/SEVERE ALLERGIC REACTIONS & SEVERE CUTANEOUS/SYSTEMIC IMMUNE-MEDIATED REACTIONS W/GLUCOSIDASE ALFA the objective of this study is to obtain all immune related reactions in patients with Pompe disease while receiving enzyme replacement therapy.

Contract (Longo) 01/01/2002-12/31/2020 Genzyme Therapeutics Corporation
Lysosomal storage disorder registry. The goal of this research is to study the natural history of patients with lysosomal storage disorders (Gaucher, Fabry, MPS-1, and Pompe disease).

Contract (Longo) 12/01/2012-12/01/2018 Shire/Pharmanet
GAUCHER DISEASE OUTCOME SURVEY (GOS) The goal of this research is to study the natural history of patients with Gaucher disease

Contract (Longo) 12/05/2016-12/31/2020 Protalix Ltd
RANDOM D-B ACTIVE CONTROL STUDY OF PRX-102 VS AGALSIDASE BETA ON RENAL FUNCTION IN FABRY DISEASE PREVIOUSLY TREATED W/ AGALSID This study will test a new type of enzyme replacement therapy in patients with Fabry disease.

Contract (Longo) 1/1/06-12/31/18 Utah Department of Health
Metabolic screening. This project involves the organization of the newborn screening program in the state of Utah and nutritional follow-up by patients identified through screening.

Contract (Longo) 10/1/08-6/30/2019 Nevada Department of Health
Metabolic screening. This project involves the organization of the newborn screening program in the state of Nevada and nutritional follow-up by patients identified through screening.

Contract (Longo) 1/1/2012-06/30/2017 Wyoming Department of Health
Genetic Services. This project involves the provision of genetic services in the state of Wyoming.

Contract (Longo) 1/1/2011-12/31/2018 Children's Specialty Center of Nevada
Genetic Services. This project involves the provision of genetic services to patients in Nevada

Grant-in-Aid 0455086Y (Longo) 07/01/2004-06/30/2007 American Heart Association **Carnitine in heart disease** The goal of this project is to determine whether cardiomyopathy is associated with heterozygous mutations in the carnitine transporter gene.

R43DK HD60308 (Ghanem) 09/01/2002-8/31/2006 NIH/NIDDK
Non-Invasive Blood Phenylalanine Monitor. The goal of this project is to develop a non-invasive device to monitor phenylalanine levels in patients with phenylketonuria.

Contract (Longo) 06/01/2005-5/31/2007 Genzyme Corporation
Multicenter study. Comparison of Q2 versus Q4 weeks treatment in Gaucher disease
In this study, two treatment modalities (every 2 or 4 weeks) for Gaucher disease are compared.

Grant (Longo) 1/1/06-6/30/07
Newborn screening surveillance program HRSA/Mountain States Genetics Network
The goal of this project is to develop a comprehensive plan for population-based outcome surveillance and longitudinally tracking of people identified through genetic screening programs.

Contract (Longo) 11/01/2004-12/31/2009 BioMarin Pharmaceutical Inc.
BMRN-PKU-001 to PKU-008. Multicenter Study to Evaluate the Response to and Safety of Phenoptin™ Treatment in Subjects with Phenylketonuria. The goal of this research is to define whether patients with phenylketonuria respond to tetrahydrobiopterin (BH4).

Contract (Longo) 07/01/2007-12/31/2010 Genzyme Therapeutics Corporation
MYOZYME TEMPORARY ACCESS PROGRAM. The goal of this research is to study the effect of anew form of enzyme replacement therapy for Pompe disease.

Contract (Longo) 01/01/2007-12/31/2010 Shire Therapeutics
A MULTICENTER OPEN LABEL STUDY OF GENE-ACTIVATED HUMAN GLUCOCEREBROSIDASE (GA-GCB) ENZYME REPLACEMENT THERAPY IN PATIENTS WITH GAUCHER DISEASE
The goal of this research is to study the effect of anew form of enzyme replacement therapy for Gaucher disease.

R21 DK 077415-A1 (Longo) 9/01/2007-8/31/2010 NIH/NIDDK/NICHD
Anaplerotic therapy in propionic acidemia
The goal of this grant is to determine whether supplementation with glutamine and ornithine alpha ketoglutarate improves the clinical outcome of patients with propionic acidemia.

1U50DD000483-01 (Botto) 9/01/2008-8/31/2011
Centers for Disease Control and Prevention **Utah Newborn Metabolic Surveillance**
The goal of this project is to establish long-term follow-up for metabolic disorders identified by newborn screening.

Contract (Longo) 07/01/2010-05/31/2012 Target research associates (Pfizer and Protalix)
PLANT CELL EXPRESSED RECOMBINANT HUMAN GLUCOCEREBROSIDASE (PRGCD) IN GAUCHER DISEASE W/ENZYME REPLACEMENT THERAPY. The goal of this research is to determine the efficacy of a new form of enzyme replacement therapy to treat patients with Gaucher disease.

5-R01 DK 53824 (Longo) 6/1/2000-5/31/2013
NIH/NIDDK **The carnitine transporter in human disease** This project has initially characterized mutations in the carnitine transporter gene causing primary carnitine deficiency. The project then characterized genes modifying the clinical presentation of primary carnitine deficiency.

3-R01 DK053824-08S1 (Longo) 6/1/2008-5/31/2010 Minority Supplement Award

Contract (Longo) 01/01/2010-12/31/2013 Amicus Therapeutics Inc.
SAFETY & PHARMACODYNAMICS OF AT1001 IN PATIENTS W/FABRY DISEASE & AT1001-RESPONSIVE GLA MUTATIONS The goal of this research is to determine the efficacy of a new oral drug acting as a chaperone to treat patients with Fabry disease and specific mutations in the alpha galactosidase gene.

Contract (Longo) 06/01/2011-12/31/2013
REPLAGAL ENZYME REPLACEMENT THERAPY IN CHILDREN W FABRY DISEASE NAIVE TO ENZYME REPLACEMENT THERAPY HGT-REP-084 The goal of this research is to determine the efficacy of a new form of enzyme replacement therapy to treat children with Fabry disease.

Contract (Longo) 10/15/2009-12/31/2014 Hyperion Therapeutics
HPN-100-007 to 011: PHASE 3, OPEN-LABEL STUDY OF SAFETY OF HPN-100 FOR LONG-TERM TREATMENT OF UREA CYCLE DISORDERS (TREAT UCD) The goal of this research is to determine the efficacy of a new drug to treat hyperammonemia in patients with urea cycle defects.

Contract (Longo) 04/01/2010-12/31/2014 Genzyme Therapeutics Corporation

ONCE DAILY VS TWICE DAILY DOSING OF GENZ-112638 IN PATIENTS W/ GAUCHER DISEASE TYPE 1 W/CLINICAL STABILITY AFTER 2X DAILY DOSE. The goal of this research is to determine the efficacy of a new oral drug acting as a substrate-inhibitor to treat patients with Gaucher disease.

2 R44 NS073225-03A1 (Naleway) 03/01/2012-02/28/2016 NIH/NINDS
Live-Cell Assays for Lysosomal Enzyme Activity. The objective of the application is to develop new targeted fluorogenic substrates capable of measuring lysosomal enzyme activity in living cells and tissues. (Role: Consultant)

5R13HD062129-04 (Longo) 7/14/2009-2/28/2016 NIH/NIDDK/NICHD/NINDS
Society for Inherited Metabolic Disorders Annual Meeting
 This grant support attendance of young investigators to the SIMD annual meeting

IV. HONORS AND AWARDS

M.D. Summa cum Laude (1982)
 Battioni Award for Cancer Research, Parma, Italy (1988)
 NIH FIRST Award (1995)
 Dean's Clinical Investigator Award, Emory University (2000)
 President, Society for Inherited Metabolic Disorders SIMD (2013-2015),
 University of Utah Catalyst Investigator (2015)
 Visiting Professor, Children's Hospital of Los Angeles (2017)

Others

Compassionate Doctor Award 2011, 2012
 America's top Physician 2012-
 Patients' Choice Physician 2012-
 Castle Connolly Award 2014-

V. ADMINISTRATIVE EXPERIENCE

Emory University School of Medicine

-Chairman, Faculty Committee for Medical Student Research	2000-2001
-Member, Faculty Committee for Medical Student Research	1994-2000
-Member, Human Investigations Committee (3 years)	1997-1999
-Member (ad hoc), Faculty Committee on Appointments and Promotions	1999

Emory University Department of Pediatrics

-Member, Research Committee	1991-2001
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Emory University Division of Medical Genetics

-Director of Research	1997-2001
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-Director of Metabolic Services	2001-present
-Co-Director, ARUP Biochemical Genetics Laboratory	2002-present
-Retention, Promotion and Tenure Committee, Dept. Pediatrics	2006-present
-Chief, Division of Medical Genetics	2007-Present

VIII. MEMBERSHIP IN PROFESSIONAL SOCIETIES

- Ordine dei Medici di Parma, Italy (Parma Medical Association) 1983-Present
- American Medical Association 2005-Present
- American Society of Human Genetics (ASHG), 1994-Present
- Society for Inherited Metabolic Disorders (SIMD), Board of Directors, 1994-2017, Membership Chair 2007-2009, Program Chair 2009-2011, President-Elect 2011-2013, President 2013-2015; Past-President 2015-2017.
- Society for the Study of Inborn Errors of Metabolism (SSIEM), 1999-present
- Fellow, American College of Medical Genetics, 1997-Present

IX. TEACHING RESPONSABILITIES

EMORY UNIVERSITY

Responsibility	Course	Dates
Small group seminar facilitator	Human and Molecular Genetics (MEDI-545 IBS 505)	1989-93 1995-2001
<i>Teach to a small group (7-10) of medical and graduate students that meet weekly during this annual course. Duties include attendance to a preparatory lecture before each class (15 hours/year).</i>		
Medical Genetics Faculty	Pediatrics	1989-93, 1995-2001
<i>Teaching to House staff and Medical students during their Pediatrics/Medical Genetics rotation (3 months per year). Medical students are followed in clinic every Tuesday. Regular student examinations.</i>		
Voluntary Faculty	Medical Biochemistry (Medi 515/ IBS 528)	1998-2001
<i>Provide clinical correlations for first year medical students. (4 hours/year, 120 students)</i>		
Faculty/Speaker	Seminars in Medical Genetics (IBS-782)	1989-2001
<i>Organize and attend weekly seminars for one month/year and give lectures twice a year.</i>		
Faculty.	Research in Medical Genetics (Elective, Second Year Medical School)	1997-2001
<i>Follow individual students for 4 hours/week during the Spring semester. Teaching includes exposure to laboratory techniques and patients with genetic diseases relevant to the focused research.</i>		
Member,	Graduate Division of Biological and Biomedical Sciences , Program in Cell and Developmental Biology . Thesis committees.	1996-2001
Co-Director.	Molecular genetic bases of inherited metabolic diseases (IBS 737)	2000-2001
<i>This course is given in the fall semester to graduate students of the programs in Biochemistry, Genetics, Public Health, and Nutrition. 50 hours per year, 5-8 students/year.</i>		
Voluntary Faculty	Allied Health Biochemistry (BAHS 501)	1997-1999
<i>Lectures on inborn errors of metabolism (3 hours/year, 80 students)</i>		

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Medical Genetics Faculty	Pediatrics	2001-Present
<i>Teaching to House staff and Medical students during their Pediatrics/Medical Genetics rotation (3 months per year). Medical students are followed in clinic every Monday and Tuesday. Three noon lectures per year are given to the house staff.</i>		
Faculty	Human Genetics for Graduate and Medical Students	2001-Present
<i>Lectures on medical genetics topics (metabolic disorders, gene therapy) are given to graduate students.</i>		
Course Director	HGEN/PATH 7380 Biochemical Genetics (Fall semester)	2006-Present
<i>Required course for Genetic Counselors, Fellows in Biochemical and Clinical Genetics, Optional Course for Graduate students in Biochemistry, Human Genetics, Pathology & Laboratory Medicine</i>		
Program Faculty	Graduate Program in Genetic Counseling	2006-Present
<i>Participates in the education of Genetic Counselor Students at the University of Utah during their rotation in Biochemical and Clinical Genetics.</i>		

SUPERVISORY TEACHING

Candidate	Degree/Activity	Date
EMORY UNIVERSITY Lorri D. Griffin MS	MS in Physiology	1987-90
Nicola Longo MD PhD		

T. Reid Fotion MD	Clinical Post-Doc	1987-90
David M. Byers PhD	Sabbatical	Jan-June 1995
Daniel Giannella-Neto MD PhD	Sabbatical	July-Nov 1996
Fernando Scaglia MD	Clinical Post-Doc	1995-1998
Shelley A. Smith	Medical Student	1997 Summer
Jessica C. Chiang	Undergraduate Student	1997-1998
Michelle A. Kelly MD	Resident	1999
Telly A. Meadows	Medical Student	1999 Summer
Paul B. Pruett	Medical Student	2001 Summer
Misa Graff	Graduate student (Nutrition)	May-July 2001

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Andrea Bartuli MD,	Sabbatical,	June-Aug 2006,
Director, Rare Diseases Program, Ospedale Bambino Gesù', Rome, Italy.		
Pietro Strisciuglio MD,	Sabbatical,	6-7/2008, 9-10/2012
Professor of Pediatrics, University of Naples, II Facolta' di Medicina, Italy.		
Giuseppe Zampino MD,	Sabbatical,	1-4/2010,
Professor/ Catholic University, Rome, Italy		
Nathaniel Miller	Medical Student	2003 Summer
Virginia Beltrama	Medical Student/Univ Milan, Italy	1-2/2010
Valentina Rovelli	Medical Student/Univ Milan, Italy	6-8/2010
Gerarda Cappuccio MD	Resident/Univ. Naples, Italy	8-10/2010
Anna Giulia Cimatti MD	Resident/Univ. Bologna, Italy	10-12/2010
Federica Bedetti MD	Resident/Univ. Bologna, Italy	11/2010-02/2011
Francesca Ciuffini	Medical Student/Univ Milan, Italy	2-5/2011
Anna Cereda MD,	Resident/Univ. Milano, Italy	4-7/2011
Federica Tamburrino MD,	Resident, Univ. Bologna, Italy	5-7/2011
Marta Frigeni	Medical Student/Univ Milan, Italy	2-4/2012, 8-10/2013
Beatrice Crippa	Medical Student/Univ Milan, Italy	2-4/2012, 8-9/2013
Chiara Leoni MD,	Resident, Univ. Rome, Italy	7/2012-7/2013
Angela Peron MD,	Resident, Univ. Milano, Italy	09/2013-08/2014, 01/2016-
Daniela Anderson MD,	Medical Student	2016-2017

Mentee Name and Degree	Time Period as a Mentee	Position While Mentee	Project Title(s)	Capacity of Mentoring	Current Position (if known)
Cristina Amat di San Filippo PhD	2001-2009	Post-Doc	Carnitine Transport	Mentor	Senior Research Associate, University of Utah
Roberta Melis PhD	2001-2004	Post-doc	Insulin receptor signaling	Mentor	Scientist, ARUP Laboratories
Kristin Bryant MS	2002-2004	Nurse Practitioner Student	Newborn screening	Mentor	Nurse Practitioner, Primary Children Hospital
Heather R. Filipowicz	2003-2005	Master Nutrition Student	Propionic Acidemia	Mentor	Dietitian, Intermountain Healthcare, Utah
Larissa Furtado MD	2006 -2008	Fellow, Biochemical Genetics	Metabolic control and psychometric functions in phenylketonuria	Research Mentor, Clinical supervisor.	Assistant Professor of Pathology, University of Utah
Nicholas James Stracensky	08/2006-08/2008	Master Nutrition Student	Propionic Acidemia	Mentor	Medical Student, University of Utah
Lucia Santoro MD	09/2007-03/2008	Resident, University of Ancona, Italy	Definition of genetic syndromes	Research and clinical supervisor	Assistant Professor of Pediatrics, University of Ancona, Italy
Lorenzo Botto MD	2007-2008	Fellow, Biochemical Genetics	Epidemiology of metabolic disorders	Research Mentor, Clinical supervisor	Professor of Pediatrics, University of Utah

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Uzochi Chimdinma Ndukwe Erlingsson MD	2008-2011	Post-doc	Carnitine and fatty acid oxidation	Research Mentor	Research Scientist, Broad Institute, Boston, MA
Krista Viau MS	2008-2015	Public Health PhD Student	Psychometric outcome in phenylketonuria	Research and clinical Mentor	Metabolic Dietitian, Boston Children Hospital
JoDell E. Whittington, PhD	2010-2012	Fellow, Biochemical Genetics	Newborn screening in phenylketonuria	Research Mentor, Clinical supervisor	Medical Director, Quest Diagnostic, Chantilly, VA
Francesco Iacobazzi MS, PhD	2011	Pharmacology PhD Student	Fatty acid oxidation	Research mentor	Program Manager, Merck Serono, Bari, Italy
Tatiana Yuzyuk PhD	2010-2013	Fellow, Biochemical Genetics	Creatine deficiency syndromes	Mentor, Clinical supervisor	Medical Director, ARUP laboratories, Salt Lake City, UT
Amy Calhoun MD	2009-2012	Fellow, clinical Genetics	Definition of genetic syndromes	Mentor, Clinical supervisor	Assistant Professor, University of Iowa
Eyby Leon MD	2010-2012	Fellow, Clinical and Biochemical Genetics	Natural history of lysosomal storage disorders	Mentor, Clinical supervisor	Assistant Professor, Children's National Medical Center
Leisa Price	08/2011-05/2013	Nutrition MS Student	Propionic acidemia	Mentor	Dietitian, Logan, UT
Elisa Ballarini MD	05/2014-11/2014	Pediatric Resident, University of Bologna, Italy	Multiple AcylCoA Dehydrogenase deficiency	Mentor	Pediatrician, Brescia, Italy
Hunter Underhill MD PhD	2014-2015	Fellow, Clinical and Biochemical Genetics	Brain imaging in Lysosomal storage disorders	Mentor, Clinical supervisor	Associate Professor, University of Utah
Marta Frigeni MD	2014-2017	Post-Doctoral Fellow	Carnitine transport and fatty acid oxidation	Mentor	Resident, Pediatrics/Medical Genetics, Houston, TX
Filippo Ingoglia	2016	PhD Student	Carnitine transport	Mentor	Fellow, Biochemical Genetics, University of Utah
Bijina Balakrishnan PhD	07/2015-	Post-Doctoral Fellow	Carnitine transport	Mentor	
Leon Chong, PhD	07/2016-08/2018	Fellow, Biochemical Genetics	Arginase deficiency	Mentor	Medical Director, LabCorp, NC
Francesca Manzoni MD	04/2017-12/2017 and 01/2019-05/2019	Neurology Resident, University of Milan, Italy	PTPS Deficiency	Mentor	Attending Neurologist, Padua University Hospital, Italy
Valentina Rovelli MD	01/2018-06/2018	Pediatrics Resident, University of Milan, Italy	VLCAD Deficiency	Mentor	Attending Physician, San Paolo Hospital, Milan, Italy
Chelsea Norman	2017-2019	Nutrition MS Student	Phenylketonuria therapies	Mentor	Associate Scientific Director at Lockwood
Katherine J. Anderson, MD	2018-2020	Genetics Resident	Urea Cycle disorders	Mentor	Assistant Professor and Chief of Medical Genetics, Univ Vermont
Amy Nicole Lebedoff, MD	2018-2020	Genetics Resident	Trisomy 18	Mentor	Assistant Professor, Children's Minnesota
Filippo Ingoglia, PhD	07/2018-06/2021	Fellow, Biochemical	Creatine deficiency and urea cycle	Mentor	Assistant Professor of Pathology, Utah

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		Genetics			
Aneta Kaczmarczyk PhD	07/2019-06/2021	Fellow, Biochemical Genetics	Glycosaminoglycans in mucopolysaccharidoses	Mentor	
Laura Duque Lasio MD	07/2020-06/2022	Fellow, Biochemical Genetics	Glycosaminoglycans in mucopolysaccharidoses	Mentor	

RESEARCH FOCUS

-Molecular genetics of inherited insulin-resistant syndromes. The objective of this research is to understand how mutations in the insulin receptor gene affect human growth and metabolism by modifying insulin regulation of membrane transport and mitogenesis.

-Molecular basis of carnitine deficiency. The objective of this research is to identify genes involved in carnitine transport and metabolism and define mutations in these genes in patients with inherited fatty acid oxidation defects. Different transporters for carnitine are analyzed at the functional and molecular level in patients with carnitine deficiency and related disorders. Proteins interacting with the carnitine transporter are identified using the yeast two-hybrid screen. Variations in their sequence are sought in patients with carnitine deficiency, but no mutations in the carnitine transporter gene.

-Therapy of metabolic disorders. The objective of this research is to develop and test new therapies for patients with inborn errors of metabolism. The approaches followed include use of vitamin/cofactor supplements, novel drugs capable of bypassing metabolic blocks, infusion of recombinant enzymes is used in patients with storage disorders, and therapy with nutritional supplements to replace products of defective biochemical reactions.

-Expanded newborn screening program. The objective of this research is to define parameters to follow the long-term outcome of patients identified presymptotically by expanded newborn screening programs.

-Brain creatine deficiency syndromes. The objective of this research is to determine the mechanism by which lack of creatine impairs brain function and to devise new therapies to prevent intellectual disability in affected patients.

PUBLICATIONS OF DR. NICOLA LONGO

PEER-REVIEWED

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7. Dall'Asta V, Gazzola GC, **Longo N**, Bussolati O, Franchi-Gazzola R, Guidotti GG (1986) Perturbation of Na⁺ and K⁺ gradients in human fibroblasts incubated in unsupplemented saline solutions. **Biochim Biophys Acta** 860: 1-8.
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170. **Nicola Longo**, Kara Goodin2, Dorothy Grange3, Cary Harding4, Bolt Kendra5, Janet Thomas6, Melissa Wasserstein7, Barbara Burton8, Jerry Vockley9, Richard Hillman10, David Dimmock11, Natasha Shur12, Darius Adams13, William Rizzo14, Chester Whitley15, Celeste Decker16, Becky Schweighardt. Evaluation of Long-term Safety and Efficacy with rAvPAL-PEG (BMN 165) for Control of Blood Phenylalanine levels in Adults with Phenylketonuria (PKU). 2015 ACMG Annual Clinical Genetics Meeting, Salt Lake City, UT, 24-27 March 2015, Abs 53.
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224. Ania Muntau1, Francois Feillet2, Barbara Burton3, Anita MacDonald4, Ann Wessel5, Ignacio Alvarez6, Joshua Lilenstein7, Paul Lane6, Elaina Jurecki7, **Nicola Longo8** A META-ANALYSIS OF GROWTH OUTCOMES IN PHENYLKETONURIA PATIENTS TREATED WITH A PHENYLALANINE-RESTRICTED DIET + SAPROPTERIN SIMD 2019 Annual Meeting, Seattle, WA, Molecular Genetics and Metabolism 126 (2019) 317-318 (poster 101).
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230. **Longo N**, Thomas J, Jurecki E, Lane P, Olbertz J, Gershman A, Wang B, Harding C O, Burton B K, Rohr F, Van Calcar S. Dietary intakes and adverse events in pegvaliasae-treated phenylketonuria adults who had low blood phenylalanine Levels. SSIEM 2019 Annual Symposium, Rotterdam, The Netherlands, 3-6 September 2019. J Inherit Metab Dis (2019) 42 (Suppl 1): Page 103-104, P-147
231. **Longo N**, Rohr F, Burton B K, Thomas J, Harding C O, Rosen O, Gu Z, Olbertz J, Weng HH. Phase 3 PRISM clinical trials: Evaluating change in diet with pegvaliasae treatment in adults with phenylketonuria. SSIEM 2019 Annual Symposium, Rotterdam, The Netherlands, 3-6 September 2019. J Inherit Metab Dis (2019) 42 (Suppl 1): Page 104, P-148
232. Rovelli V, Viau K, Pasquali M, **Longo N** Clinical and Biochemical Outcome of Patients with very Long-Chain ACYL-COA Dehydrogenase Deficiency. SSIEM 2019 Annual Symposium, Rotterdam, The Netherlands, 3-6 September 2019. J Inherit Metab Dis (2019) 42 (Suppl 1): Page 184, P-328
233. Vockley J, Burton B, Berry G, **Longo N**, Phillips J, Sanchez-Valle A, Chapman K, Tanpaiboon P, Grunewald S, Murphy E, Bowden A, Mu Y, Cataldo J P-332 Interim results from an open-label, long-term extension study to evaluate the safety and efficacy of triheptanoin (UX007) in LC-FAOD. SSIEM 2019 Annual Symposium, Rotterdam, The Netherlands, 3-6 September 2019. J Inherit Metab Dis (2019) 42 (Suppl 1): Page 185, P-332
234. Jurecki E, Burton B, Ilan A, Delaney K, Madden D, **Longo N**, Harding C O, Thomas J Concept elicitation and outcomes assessment tool mapping with an international cohort of adult phenylketonuria patients. SSIEM 2019 Annual Symposium, Rotterdam, The Netherlands, 3-6 September 2019. J Inherit Metab Dis (2019) 42 (Suppl 1): Page 321, E-031
235. Tahseen Mozaffar, John W. Day, **Nicola Longo**, Jordi Diaz Manera, Volker Straub, Miko Maruoka, Cong Hane, Cheryl Wong Po Foo, Angela R. Smith, Nathan Bachtell. AT845 gene replacement therapy for late onset Pompe disease: Overview of clinical data from FORTIS, a phase 1/2 open-label clinical study. WORLDSymposium 2022, San Diego CA, 7-11 Feb, 2022. Molecular Genetics and Metabolism, Volume 135, Issue 2, February 2022, Pages S85-S86 (Abs 206)

PI ON CURENTLY APPROVED IRB PROTOCOLS

Nicola Longo MD PhD

IRB_00110412 PBD-001: A Phase 1/2, Open-Label, Randomized Parallel Arm, Intra-patient Dose Titration Study to Evaluate the Safety, Pharmacokinetics and Preliminary Efficacy of CNSA-001 (Sepiapterin) in Adult and Adolescent Primary Tetrahydrobiopterin Deficient Patients
 Approved Longo 5/26/2021
 IRB_00090396 018CTXX15001: An Observational, Multicenter Study of the Prevalence of Cerebrotendinous Xanthomatosis (CTX) in Patient Populations Diagnosed with Early-Onset Idiopathic Bilateral Cataracts
 Approved Longo 6/22/2021
 IRB_00121194 REN001-102: An Open Label Study to Determine the Safety and Tolerability of 12 Weeks Treatment with Oral REN001 in Subjects with Fatty Acid Oxidation Disorders (FAOD).
 Approved Longo 10/8/2020
 IRB_00111681 Modify ACT-434964: A Multicenter, Double-Blind, Randomized, Placebo-Controlled, Parallel-Group Study to Determine the Efficacy and Safety of Lucerastat oral monotherapy in Adult Subjects with Fabry Disease.
 Approved Longo 10/7/2020
 IRB_00031175 PKUDOS – PKU Demographics, Outcomes, and Safety Registry PKU MOMS- Subregistry for pregnant PKU moms
 Approved Longo 5/21/2021
 IRB_00082746 UX007-CL202: An Open-label Long-Term Safety and Efficacy Extension Study in Subjects with Long-Chain Fatty Acid Oxidation Disorders (LC-FAOD) Previously Enrolled in UX007 or Triheptanoin Studies
 Approved Longo 11/20/2020
 IRB_00126507 307-902: A Prospective Study of Phenylketonuria (PKU)
 Approved Longo 12/3/2021
 IRB_00117942 ATB200-03 (Propel): a phase 3 double-blind randomized study to assess the efficacy and safety of intravenous atb200 co administered with oral AT2221 in adult subjects with late onset pompe disease compared with alglucosidase alfa/placebo.
 Approved Longo 2/18/2021
 IRB_00106354 Trial of dichloroacetate (DCA) in pyruvate dehydrogenase complex (PDC) Deficiency
 Approved Longo 2/26/2021
 IRB_00093689 PB-102-F20: A Randomized, Double blind, Active Control Study of the Safety and Efficacy of PRX-102 compared to Agalsidase Beta on Renal Function in Patients with Fabry Disease Previously Treated With Agalsidase Beta (BALANCE)
 Approved Longo 10/8/2020
 IRB_00085855 Natural history of patients with metabolic disorders
 Approved Longo
 IRB_00075237 AGLU06909/LTS13930: A Prospective Safety Sub-Registry to Assess Anaphylaxis and Severe Allergic Reactions, and Severe Cutaneous and Systemic Immune-Mediated Reactions with Alglucosidase Alfa Treatment
 Approved Longo 11/21/2020
 IRB_00034057 Clinical Surveillance Program for Patients with Mucopolysaccharidosis Type VI
 Approved Longo 3/27/2021
 IRB_00128835 ATB200-07: A Phase 3 open-label extension study to assess the long-term safety and efficacy of intravenous ATB200 co-administered with oral AT2221 in adult subjects with late-onset Pompe disease.
 Approved Longo 5/5/2021
 IRB_00105142 HPN-100-021: A Randomised, Controlled, Open-Label Parallel Arm Study of the Safety, Pharmacokinetics and Ammonia Control of RAVICTI® (Glycerol Phenylbutyrate [GPB]) Oral Liquid and Sodium Phenylbutyrate (NaPBA) in Phenylbutyrate Treatment Naïve Patients
 Approved Longo 11/19/2020
 IRB_00062414 GOS: Gaucher Disease Outcome Survey
 Approved Longo 4/18/2021
 IRB_00116015 PB-102-F51: Open Label Extension Study to Evaluate the Long-Term Safety and Efficacy of Pegunigalsidase Alfa (PRX-102) 2 mg/kg Administered by Intravenous Infusion Every 4 Weeks in Patients with Fabry Disease
 Approved Longo 2/25/2021
 IRB_00124126 PEACE (Pegzilarginase Effect on Arginase 1 Deficiency Clinical Endpoints): A Randomized, Double-Blind, Placebo-Controlled Phase 3 Study of the Efficacy and Safety of Pegzilarginase in Children and Adults with Arginase 1 Deficiency

Nicola Longo MD PhD

Approved Longo 10/22/2020
 IRB_00109350 MSC12790/AGLUO7710: A Phase 3/4 Prospective Study to Characterize the Pharmacokinetics of Alglucosidase Alfa in Patients with Pompe Disease
 Approved Longo 4/22/2021
 IRB_00116016 PB-102-F60: Open Label Extension Study to Evaluate the Long-Term Safety and Efficacy of Pegunigalsidase Alfa (PRX-102) in Patients with Fabry Disease
 Approved Longo 1/21/2021
 IRB_00117942 ATB200-03 (Propel): a phase 3 double-blind randomized study to assess the efficacy and safety of intravenous atb200 co administered with oral AT2221 in adult subjects with late onset pompe disease compared with alglucosidase alfa/placebo.
 Approved Longo 2/18/2021
 IRB_00106354 Trial of dichloroacetate (DCA) in pyruvate dehydrogenase complex (PDC) Deficiency
 Approved Longo 2/26/2021
 IRB_00093689 PB-102-F20: A Randomized, Double blind, Active Control Study of the Safety and Efficacy of PRX-102 compared to Agalsidase Beta on Renal Function in Patients with Fabry Disease Previously Treated With Agalsidase Beta (BALANCE)
 Approved Longo 10/8/2020
 IRB_00120894 mRNA-3704-P101: A Global, Phase 1/2, Open Label, Dose Escalation Study to Evaluate the Safety, Pharmacodynamics, and Pharmacokinetics of mRNA-3704 in Patients with Isolated Methylmalonic Acidemia Due to Methylmalonyl-CoA Mutase Deficiency
 Approved Longo 12/3/2020
 IRB_00104191 PB-102-F50: A Phase 3, Open Label, Switch Over Study to Assess the Safety, Efficacy and Pharmacokinetics of pegunigalsidase alfa (PRX-102) 2 mg/kg Administered by Intravenous Infusion Every 4 Weeks for 52 weeks in Patients with Fabry Disease Currently Tr
 Approved Longo 9/7/2020
 IRB_00076357 B3031002: A Multicenter, Multicountry, Postmarketing, Active Surveillance Taliglucerase Alfa Registry in Patients with Gaucher Disease.
 Approved Longo 10/7/2020
 IRB_00097168 EFC14028: A phase 3 randomized, multicenter, multinational, double-blinded study comparing the efficacy and safety of repeated biweekly infusions of neoGAA (GZ402666) and alglucosidase alfa in treatment-naïve patients with late-onset Pompe disease (COMET
 Approved Longo 5/11/2021
 IRB_00121646 HMI-102-101: A Phase 1/2 Open-Label, Randomized, Concurrently-Controlled, Dose Escalation Study to Evaluate the Safety and Efficacy of HMI-102 in Adult PKU Subjects with PAH Deficiency
 Approved Longo 9/18/2020
 IRB_00042999 Rare Disease Registry Program
 Approved Longo 2/28/2021
 IRB_00131563 AT100-01: An AAV8 Neutralizing Antibody Seroprevalence Study in Subjects with Late Onset Pompe Disease
 Approved Longo 6/24/2021
 IRB_00107419 SPIMM-301: A Phase 3 Randomized, Double-Blind, Parallel-Group, Placebo-Controlled Trial to Evaluate the Efficacy and Safety of Daily Subcutaneous Injections of Elamipretide in Subjects with Primary Mitochondrial Myopathy Followed by an Open-Label Treatme
 Approved Longo 7/21/2020

236. ORAL PRESENTATIONS

1. **Longo N**, Franchi-Gazzola R, Dall'Asta V, Bussolati O, Gazzola GC (1983) Trasporto di membrana di L-cistina in fibroblasti umani in coltura: aspetti cinetici e regolativi. Atti II Congresso Nazionale Associazione di Biologia Cellulare e del Differenziamento, Bressanone 2-4 maggio 1983, 88.
2. **Longo N**, Gazzola GC, Elsas LJ (1986) Insulin regulation of membrane transport by normal and insulin-receptor mutant human fibroblasts. **Clin Res** 34(1): 242A.
3. **Longo N**, Elsas LJ (1987) Restriction fragment length polymorphism for the *alpha* subunit of the insulin receptor gene in inherited severe insulin resistance. **Clin Res** 35(3): 624A.
4. **Longo N**, Visigalli R, Franchi-Gazzola R, Dall'Asta V, Bussolati O, Guidotti GG, Gazzola GC (1989) Inhibition of aspartate transport in *ras*-transformed or phorbol ester treated NIH 3T3 cells. **Eur J Cell Biol** 49 (Suppl 28) : 33 (abs 93)
5. **Longo N**, Bell GI, Shuster RC, Griffin LD, Langley SD, Elsas LJ (1990) Human fibroblasts express the insulin-responsive glucose transporter (GLUT4). **Clin Res** 38(2): 436A.
6. **Longo N**, Shuster RC, Griffin LD, Langley SD, Elsas LJ (1990) Activation of the insulin-receptor kinase modifies glucose transporter gene expression in fibroblasts cultured from a patient with leprechaunism. Proceedings of the 5th International Congress of Inborn Errors of Metabolism, Pacific Grove, CA, 1-5 June 1990, W16.3.
7. **Longo N**, Shuster RC, Griffin LD, Langley SD, Elsas LJ (1992) Activation of insulin receptor signaling by a single amino acid substitution in the transmembrane domain. **Clin Res** 40(2): 321A.
8. **Longo N**, Langley SD, Griffin LD, Elsas LJ (1992) Homozygosity for a natural mutation in the insulin receptor *alpha* subunit activates glucose transport. **Clin Res** 40(2): 329A.
9. **Longo N**, Langley SD, Griffin LD, Elsas LJ (1994) Prenatal diagnosis in leprechaunism: two novel mutations in the insulin receptor gene. Proceedings VI International Congress Inborn Errors of Metabolism, Milano, Italy, May 27-31, 1994, W10.5, p 95.
10. **Longo N**, Giannella-Neto D, Langley SD, Wang Y, Scaglia F, Elsas LJ (1997) Genotype-phenotype correlation in patients with inherited insulin-resistant syndromes. 7th International Congress of Inborn Errors of Metabolism. p. 80 (Abs O42) Vienna Austria May 1997.
11. **Longo N**, Scaglia F, Wang Y, Singh RH, Dembure PP, Pasquali M, Evinger JD, Bagnasco S, Fernhoff P (1997) Physiological characterization of the carnitine transporter responsible for primary carnitine deficiency. 7th International Congress of Inborn Errors of Metabolism. p. 219 (Abs O106), Vienna Austria May 1997.
12. **Longo N**, Wang Y, Smith S, Langley SD, Scaglia F (1998) Genotype-phenotype correlation in patients with inherited insulin resistant syndromes. **Am J Hum Genet** 63: A24 (Abs 124) Annual Meeting, American Society of Human Genetics, Denver, CO, Oct 1998.
13. **Longo N**, Meadows T, Wang Y (2000) Impaired sodium stimulation of carnitine transport in primary carnitine deficiency. **J Inherit Metab Dis** 23 (Suppl 1): 117 (Abs 233-O) 8th International Congress of Inborn Errors of Metabolism Cambridge UK 13-17 September 2000.
14. **Longo N**, Wang Y, Taroni F, Garavaglia B (2000) Functional analysis of mutations in the OCTN2 transporter causing primary carnitine deficiency: Lack of genotype-phenotype correlation. **J Inherit Metab Dis** 23 (Suppl 1): 118 (Abs 235-O) 8th International Congress of Inborn Errors of Metabolism Cambridge UK 13-17 September 2000.
15. **Longo N**, Amat di San Filippo C (2006) Glycosylation affects membrane maturation of the OCTN2 carnitine/organic cation transporter. **Acta BioMed** 77(suppl 3): 73-74.
16. **Longo N** (2007) The challenge for the long term surveillance of metabolic disorders detected by newborn screening. ACMG Annual Clinical Genetics Meeting, Nashville TN March 21-25, 2007, 162 (Abs 282) (invited)
17. **Longo N** (2008) Endocrine evaluation of the obese adolescent child. XI International Meeting of Pediatric Laboratory Medicine, Fortaleza, Brazil, September 2008 (Invited).
18. **Longo N** (2009) Sugar, small molecules, and cardiomyopathy. Annual Meeting American College of Medical Genetics, Tampa, FL, 25-29 March 2009 (Invited)

19. K Viau, SL Ernst, M Pasquali, LD Botto, GL Hedlund, **N Longo** (2013) Biochemical predictors of long-term outcome in patients with Guanidinoacetate Methyltransferase (GAMT) deficiency. *J Inherit Metab Dis* 36: (suppl 2): S104 (0-008) International Congress Inborn errors of Metabolism ICIEM 2013, Barcelona, Spain, 3-6 Sep 2013.

20. **N Longo**, J A Thomas, M Wasserstein, B K Burton, J Vockley, D K, Grange, R Hillman, C Harding, D Dimmock, N Shur, D Adams, W B Rizzo, C Whitley, K M Goodin, C Decker, K Bolt, Y Chen, B Schweighardt, R Zori. Evaluation of long-term safety and efficacy with rAvPAL-PEG for control of blood phenylalanine levels in adults with phenylketonuria (PKU). Annual Symposium of the Society for the Study of Inborn Errors of Metabolism LYON, FRANCE, *J Inherit Metab Dis* (2015) 38 (Suppl 1):S41, Abstract O-016

INVITED SPEAKER AT NATIONAL AND INTERNATIONAL CONFERENCES

Meeting of the Italian Society for the Study of Inherited Metabolic Disorders, Genoa, Italy, November 1992 (Longo N (1992) Difetti del recettore dell'insulina. *Pathologica* 85: 28-30).

-European School of Medical Genetics, Sestri Levante, Italy, 28 March-3 April 1993.

"Transfection of mutant genes in eukaryotic cells"

"Identification of mutations in disease genes"

First International Symposium on Molecular Genetics in Endocrinology, Sao Paulo, Brazil, 4-7 December 1997

a. Longo N (1997) Molecular genetics of inherited severe insulin-resistance.

b. Longo N (1997) Molecular genetics of glucose transporters.

2001 FASEB Summer Research Conference "New perspectives in transporter biology", Tucson AZ July 21 - 26, 2001. Transporters in fatty acid oxidation.

2002 "Transporters International Conference", Munich, Germany, 1-5 September 2002. The OCTN2 carnitine transporter.

Longo N. Primary carnitine deficiency. 2003 "Ross Conference: Metabolic disorders", Houston, TX, April 2003.

Longo N. Inherited metabolic disorders. 2004 "XLII Jornadas Medicas Nacionales", Panama City, Republic of Panama, October 2004.

Longo N. Breakthrough research in tetrahydrobiopterin (BH4) therapy: Phenylketonuria and BH4 deficiency. 2006 Ancillary Meeting, American Society of Human Genetics, New Orleans 10 Oct 2006.

Longo N (2007) The challenge for the long term surveillance of metabolic disorders detected by newborn screening. ACMG Annual Clinical Genetics Meeting, Nashville TN March 21-25, 2007, 162 (Abs 282)

Longo N (2008) Endocrine evaluation of the obese adolescent child. XI International Meeting of Pediatric Laboratory Medicine, Fortaleza, Brazil, September 2008

2008. Medical Management of Pediatric Neurotransmitter Disorders. Tetrahydrobiopterin deficiency. Washington DC 18 July 2008

2008. Medical Management of Pediatric Neurotransmitter Disorders. Sapropterin reductase deficiency and the BH4 deficiency database. Washington DC 19 July 2008

Longo N (2009) Sugar, small molecules, and cardiomyopathy. Annual Meeting American College of Medical Genetics, Tampa, FL, 25-29 March 2009

Longo N (2009) Phenylalanine ammonia lyase in phenylketonuria. Annual Meeting European Society for Phenylketonuria, Belek, Turkey, 30 Oct-1 November 2009.

Longo N (2009) Phenylalanine ammonia lyase and sapropterin therapy in phenylketonuria. Annual Meeting European Society for Phenylketonuria, Belek, Turkey, 30 Oct-1 November 2009

Longo N (2010) Phenylalanine ammonia lyase enzyme substitution therapy for phenylketonuria. 2nd European Phenylketonuria Group Meeting, "Advances and Challenges in PKU", Munich, Germany, Annual January 22-23, 2010

Longo N, Pasquali M (2010) Disorders of the carnitine cycle. 2010 ACMG Annual Clinical Genetics Meeting, Albuquerque, NM, March 24-28, 2010, Abstract 428 (Invited talk)

Longo N (2010) Mitochondrial function in Wolf-Hirschhorn syndrome. 4p- support group meeting, Salt Lake City, UT, 31 July 2010.

Longo N (2010) Current and emerging treatments for phenylketonuria, France Foundation, Denver CO, 24 September 2010.

Longo N, Pasquali M (2010) Newborn screening for metabolic disorders. Newborn screening in the Campania region of Italy. Naples, Italy, 30 October 2010.

Longo N (2010) New therapies for phenylketonuria. Milano Pediatria 2010, Italy, 19 Nov 2010.

Longo N (2010) Enzyme substitution therapy in PKU. Milano Pediatria 2010, Italy, 20 Nov 2010.

Longo N (2010) Carnitine and human diseases. Pharmacology Rounds, University of Utah, 29 Nov 2010.

Longo N, Pasquali M (2011) Carnitine and carnitine palmitoyl transferase II deficiency. SIMD Annual Meeting, Plenary lecture, February 28, 2011

Longo N (2011) New and emerging metabolic interventions for phenylketonuria. ACMG Annual Meeting, Satellite symposium, Vancouver BC, 17 March 2011

Longo N (2011) Enzyme Substitution Therapy and Other New Treatments for Phenylketonuria. Pediatric Academic Societies/Asian Society for Pediatric Research Annual Meeting, Denver CO, April 30, Invited Plenary Lecture, p. 42-34 (Abs)

Longo N (2012) ADAPT: A diversified approach to phenylketonuria treatment. Metabolic Academy, Denver CO, 24 February 2012.

Longo N (2012) Sapropterin Therapy in young children with Phenylketonuria. Metabolic Academy, Denver CO, 25 February 2012.

Longo N (2012) Carnitine and fatty acid oxidation. New perspectives in medicine, Florence, Italy, 3 May 2012.

Longo N (2012) Newborn screening for metabolic disorders. Nevada newborn screening program Las Vegas, NV, 20 June 2012 and Reno, NV, 28 June 2012.

Longo N (2013) 50 years of newborn screening for metabolic disorders. Nevada newborn screening program Las Vegas, NV, 21 Sep 2013 and Reno, NV, 14 September 2013.

Longo N (2013) Update on phenylketonuria: Invited Oral Presentation, 4 Sep 2013, International Congress Inborn errors of Metabolism ICIEM 2013, Barcelona, Spain, 3-6 Sep 2013.

Longo N (2014) Presidential address: Membrane transport and metabolic disorders. SIMD annual meeting, March 9–12, 2014, Asilomar Conference Center Pacific Grove, CA

Longo N (2014) Primary carnitine deficiency. Faroe Islands Health System, Faroe Islands, Kingdom of Denmark, 2 May 2014.

Longo N (2014) PEG-PAL: the latest evidence. 6 June 2014, Zagreb, Croatia. 2014 Annual Multidisciplinary Phenylketonuria Symposium.

Longo N (2014) PKU: USA and European guidelines workshop, 6 June 2014, Zagreb, Croatia. 2014 Annual Multidisciplinary Phenylketonuria Symposium.

Longo N (2014) Carnitine and fatty acid oxidation, China Lecture Tour, Beijing, Shenyang, Wuhan, Shanghai, 26 June-4 July 2014.

Longo N (2014) CLINICAL GUIDELINES FOR FATTY ACID OXIDATION (FAO) DISORDERS. Annual Symposium of the International Network for Fatty Acid Oxidation Research and Management (INFORM), Innsbruck, Austria, 6 Sep 2014.

Longo N (2015) New treatments for phenylketonuria. University of Bologna, Pediatric Grand Rounds, Bologna, Italy, 18 May 2015.

Longo N (2015) Next generation sequencing in medical genetics. Panama City, Republic of Panama, 8 Aug 2015

Longo N (2015) Diet (or no diet) and outcome in children with glutaric aciduria type I, aged more than 6 years. SSIEM Meeting, Lyon, France, 1 Sep 2015.

Nicola Longo MD PhD

Longo N (2015) Primary carnitine deficiency and defects in carnitine biosynthesis: novel functions of carnitine? 2nd Annual Symposium of the International Network for Fatty Acid Oxidation Research and Management (INFORM), Lyon, France, 5 Sep 2015.

Longo N (2015) Magistral lecture: Phenylketonuria update. Fano Metabolic Meeting, Italy, 9 Sep 2015

Longo N (2015) Defects of fatty acid oxidation. Fano Metabolic Meeting, Italy, 9 Sep 2015

Longo N (2016) Clinical Experience & Treatment of Metabolic Diseases, Rare Diseases Days, Guatemala City, Guatemala, 29 Feb 2016.

Longo N (2016) Social and medical awareness about rare diseases in the USA. Rare Diseases Days, Guatemala City, Guatemala, 1 Mar 2016.

Longo N (2016) Carnitine deficiency. Fatty Acid Oxidation Organic Acidemia Organization Meeting, Denver CO, 8 July 2016

Longo N (2016) Liver transplantation for methylmalonic and propionic acidemia. Fatty Acid Oxidation Organic Acidemia Organization Meeting, Denver CO, 8 July 2016

Longo N (2016) Disorders of fatty acid oxidation. Southeastern Regional Genetics Group, Ponte Vedra, FL, 15 July 2016.

Longo N (2016) Primary carnitine deficiency. Society for the study of inborn error of metabolism, Annual Meeting, Rome, Italy, 4 Sep 2016.

Longo N (2016) CARNITINE DEFICIENCY AND FATTY ACID OXIDATION DISORDERS. European association of Pediatric Societies, Geneva, Switzerland, 23 Oct 2016.

Longo N (2016) Carnitine and Fatty Acid Oxidation. VUMC Medical Center, Amsterdam, The Netherlands, 12 Dec 2016.

Longo N (2016) Management of phenylketonuria. European Phenylketonuria Meeting, Amersfoort, The Netherlands, 14 Dec 2016.

Longo N (2016) Tetrahydrobiopterin in children age 0-4 with phenylketonuria. European Phenylketonuria Meeting, Amersfoort, The Netherlands, 14 Dec 2016.

Longo N (2017) Brain creatine deficiency syndromes. San Paolo Hospital, 19 Jan 2017, Milan, Italy

Longo N (2017) Neonatal seizures. Milano Pediatria 2017. 20 Jan 2017, Milan, Italy

Longo N (2017) New therapies for phenylketonuria. Milano Pediatria, 21 Jan 2017, Milan, Italy

Longo N (2017) Newborn Screening. Children's Hospital of Los Angeles, 6 Apr 2017

Longo N (2017) Carnitine and Fatty Acid Oxidation. Aaron Michael Graham Jr., Annual Grand Rounds, Children's Hospital of Los Angeles, April 7 2017

Longo N (2017) The impact of newborn screening on fatty acid oxidation disorders. Keynote address. INFORM Symposium, Rio de Janeiro, Brazil, 3 Sep 2017

Longo N (2017) Comparing short and long-term outcomes/complications of hyperammonaemia in patients treated with long term vs other management strategies. Symposium: STABILISE. RATIONALISE. OPTIMISE. Exploring long-term therapy options for hyperammonaemia in organic acidaemias, 13th International Congress of Inborn Errors of Metabolism, , Rio de Janeiro, Brazil, 7 Sep 2017

Longo N (2017) Efficacy and Safety of Pegvaliase for the Treatment of Adults with PKU: Phase 3 PRISM Clinical Trials. Japanese Society for Inborn Errors of Metabolism, Toyo, Japan, 13 Oct 2017.

Longo N (2019) Invited Professor. Advanced Course on Diagnosis and Treatment of Metabolic Diseases. Porto Alegre, Brazil, 4-8 Aug 2019. Lectures on: 1. Introduction 2. Clinical approach to the diagnosis and treatment of intermediate metabolism diseases. 3. Overview of the treatment of intermediate metabolism diseases. 4. Metabolic emergencies and approach to selected problems of intermediate metabolism diseases. 5. Perspective I screening for inborn errors of metabolism. 6. Review of clinical cases.

Longo N (2020) Management of Long-Chain Fatty Acid Oxidation Disorders. ASEMBIA Meeting (online), 7 May 2020

Longo N (2020) Breaking down long chain fatty acid oxidation disorders. GMDI meeting (on line), 7 May 2020

Longo N (2020) Liver transplantation in inborn errors of metabolism. American Liver Foundation (Online), 3 September 2020

Longo N (2017) Carnitine and Fatty Acid Oxidation. Grand Rounds, University Medical Center, Las Vegas NV, Children's Hospital of Los Angeles, 16 April 2021