Curriculum Vitae and Track Record

Personal Details

Family Name, First Name: Greotti, Elisa
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Education

- **PhD in Cell Biology** – Biosciences and Biotechnology, University of Padova, Italy (2015)
- **Master's degree in medical biotechnologies** – University of Padova, Italy (2011)

Positions

- **2016–Present**: Research Scientist, Neuroscience Institute (IN), CNR, Padua, Italy
- **2015–2016**: Post-Doctoral Fellow, Neuroscience Institute (IN), CNR, Padua, Italy
- **2014–2015**: Research Fellowship, Neuroscience Institute (IN), CNR, Padua, Italy
- **2014**: Occasional Performance, Telethon Foundation, Neuroscience Institute (IN), CNR, Padua, Italy
- **2012–2014**: Research Fellowship, Neuroscience Institute (IN), CNR, Padua, Italy
- **2007–2009**: Internship, Spedali Civili di Brescia, Biotechnology Laboratory, Brescia, Italy

Personal Statement

My research focuses on calcium signaling in health and disease, with a particular emphasis on mitochondrial functionality in vivo. I have developed innovative tools to study and modulate calcium dynamics. Currently, my research explores the intracellular compartmentalization of calcium signaling in the brain, focusing on Alzheimer's Disease.

Selected Publications

1. Delgado de la Herran H, Vecellio Reane D, Cheng Y, Katona M, Hosp F, **Greotti E**, Wettmarshausen J, Patron M, Mohr H, Prudente de Mello N, Chudenkova M, Gorza M, Walia S, Feng MS, Leimpek A, Mielenz D, Pellegata NS, Langer T, Hajnóczky G, Mann M, Murgia M, Perocchi F. *Systematic mapping of mitochondrial calcium uniporter channel (MCUC)-mediated calcium signaling networks. EMBO J.* 2024 Nov;43(21):5288-5326.
2. Marini C, Cossu V, Carta S, **Greotti E**, Gaglio D, Bertola N, Chiesa S, Bruno S, Vitale F, Bonanomi M, Porro D, Riondato M, Orengo AM, Bauckneht M, Morbelli S, Ravera S, Sambuceti G. *Fundamental Role of Pentose Phosphate Pathway within the Endoplasmic Reticulum in Glutamine Addiction of Triple-Negative Breast Cancer Cells. Antioxidants (Basel).* 2022 Dec 26;12(1):43.
3. Di Sante M, Antonucci S, Pontarollo L, Cappellaro I, Segat F, Deshwal S, **Greotti E**, Grilo LF, Menabò R, Di Lisa F, Kaludercic N. *Monoamine oxidase A-dependent ROS formation modulates human cardiomyocyte differentiation through AKT and WNT activation. Basic Res Cardiol.* 2023 Jan 20;118(1):4.
4. Redolfi N, **Greotti E**, Zanetti G, Hochepied T, Fasolato C, Pendin D, Pozzan T. *A New Transgenic Mouse Line for Imaging Mitochondrial Calcium Signals. Function (Oxf).* 2021 Feb 25;2(3):zqab012.
5. Galla L, Vajente N, Pendin D, Pizzo P, Pozzan T, **Greotti E**. *Generation and Characterization of a New FRET-Based Ca^{2+} Sensor Targeted to the Nucleus. Int J Mol Sci.* 2021 Sep 14;22(18):9945.
6. Naia L, Pinho CM, Dentoni G, Liu J, Leal NS, Ferreira DMS, Schreiner B, Filadi R, Fão L, Connolly NMC, Forsell P, Nordvall G, Shimozawa M, **Greotti E**, Basso E, Theurey P, Gioran A, Joselin A, Arsenian-Henriksson M, Nilsson P, Rego AC, Ruas JL, Park D, Bano D, Pizzo P, Prehn JHM, Ankarcrona M. *Neuronal cell-based high-throughput screen for enhancers of mitochondrial function reveals luteolin as a modulator of mitochondria-endoplasmic reticulum coupling. BMC Biol.* 2021 Mar 24;19(1):57.
7. Rossi A, Galla L, Gomiero C, Zentilin L, Giacca M, Giorgio V, Calì T, Pozzan T, **Greotti E**, Pizzo P. *Calcium Signaling and Mitochondrial Function in Presenilin 2 Knock-Out Mice: Looking for Any Loss-of-Function Phenotype Related to Alzheimer's Disease. Cells.* 2021 Jan 21;10(2):204.
8. Scremin E, Agostini M, Leparulo A, Pozzan T, **Greotti E**, Fasolato C. *ORAI2 Down-Regulation Potentiates SOCE and Decreases Aβ42 Accumulation in Human Neuroglioma Cells. Int J Mol Sci.* 2020 Jul 25;21(15):5288.
9. **Greotti E**, Fortunati I, Pendin D, Ferrante C, Galla L, Zentilin L, Giacca M, Kaludercic N, Di Sante M, Mariotti L, Lia A, Gómez-Gonzalo M, Sessolo M, Di Lisa F, Carmignoto G, Bozio R, Pozzan T. *mCerulean3-Based Cameleon Sensor to Explore Mitochondrial Ca^{2+} Dynamics In Vivo. iScience.* 2019 Jun 28;16:340-355.

10. **Greotti E**, Capitanio P, Wong A, Pozzan T, Pizzo P, Pendin D. *Familial Alzheimer's disease-linked presenilin mutants and intracellular Ca^{2+} handling: A single-organelle, FRET-based analysis. Cell Calcium.* 2019 May;79:44-56.
11. Gallegos-Gómez ML, **Greotti E**, López-Méndez MC, Sánchez-Vázquez VH, Arias JM, Guerrero-Hernández A. *The Trans Golgi Region is a Labile Intracellular Ca^{2+} Store Sensitive to Emetine. Sci Rep.* 2018 Nov 21;8(1):17143.
12. Tkatch T, **Greotti E**, Baranauskas G, Pendin D, Roy S, Nita LI, Wettmarshausen J, Prigge M, Yizhar O, Shirihai OS, Fishman D, Hershfinkel M, Fleidervish IA, Perocchi F, Pozzan T, Sekler I. *Optogenetic control of mitochondrial metabolism and Ca^{2+} signaling by mitochondria-targeted opsins. Proc Natl Acad Sci U S A.* 2017 Jun 27;114(26):E5167-E5176.
13. **Greotti E**, Wong A, Pozzan T, Pendin D, Pizzo P. *Characterization of the ER-Targeted Low Affinity Ca^{2+} Probe D4ER. Sensors (Basel).* 2016 Sep 2;16(9):1419.
14. Filadi R, **Greotti E**, Turacchio G, Luini A, Pozzan T, Pizzo P. *Presenilin 2 Modulates Endoplasmic Reticulum-Mitochondria Coupling by Tuning the Antagonistic Effect of Mitofusin 2. Cell Rep.* 2016 Jun 7;15(10):2226-2238.
15. Filadi R, **Greotti E**, Turacchio G, Luini A, Pozzan T, Pizzo P. *Mitofusin 2 ablation increases endoplasmic reticulum-mitochondria coupling. Proc Natl Acad Sci U S A.* 2015 Apr 28;112(17):E2174-81.

Prizes and Awards

- **Poster Prize** – *Calcium Signalling Gordon Research Conference* (Lucca, 2017), sponsored by the Journal of General Physiology (JGP).
- **Best Poster Award** – Sponsored by the Royal Society of Chemistry (RSC) at the LIV Congress of the Division of Physical Chemistry of the Italian Chemical Society (Napoli, 2016).

Invited Presentations

Conferences

- **June 2017**: *Calcium Signalling Gordon Research Conference (Lucca).* Talk title: "mCerulean3-based Cameleon Sensor to Explore Mitochondrial Ca^{2+} Dynamics in vivo."
- **February 2016**: *Inauguration Symposium, Ludwig-Maximilians Universität München.* Title: "Mitochondrial Signalling: A Crossroad Between Physiology and Pathology."

Schools

- **January 2023**: *Winter School in Neurodegeneration, University of Padua.* Title: "Calcium Imaging in Models of Neurodegeneration."
- **November 2022**: *Ianua ISB Primo Livello, University of Genova.* Title: "Genetically Encoded Calcium Sensors: How We Study Calcium Dynamics Within Organelles."
- **October 2021**: *Ph.D. Course AY 2021/2022.* Title: "Genetically Encoded Ca^{2+} Indicators."
- **June 2018**: *SynaNet 2018 Summer School.* Title: "Ca^{2+} Signals in Mitochondria and E.R."

Institutional Responsibilities

- **2020–Present**: Spokesperson Delegate, JOINT RESEARCH UNIT (JRU) for the Advanced Optical Microscopy Infrastructure. Involved in projects for the research infrastructure "Euro-BioImaging ERIC (European Research Infrastructure Consortium) - Advanced Light Microscopy Italian Node (ALM), a pan-European large-scale facility.

Grant

Title: Targeting mitochondria to modulate neuron-astrocyte crosstalk and halt Alzheimer's Disease
Funding Source: PRIN 2022 (PNRR MUR)
Funding Amount: €244,620
Duration: 30/11/2023 – 30/11/2025
Role: Coordinator, PI