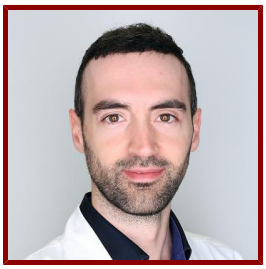
Stanford



Antonio Tomasso

Postdoctoral Scholar, Plastic and Reconstructive Surgery

Bio

BIO

Antonio Tomasso is an NWO Rubicon Postdoctoral Scholar. As part of his MSc in Medical Molecular and Cellular Biotechnology at Vita-Salute San Raffaele University, he explored the immunomodulatory and neurotrophic roles of neural stem cells (NSCs) following spinal cord injury. As a Research Assistant at Karolinska Institute, he delved into the signaling pathways required for NSC activation and migration after spinal cord injury, and the limited regenerative abilities of mouse and human heart.

During his PhD, he investigated the molecular mechanisms of tissue regeneration in planarians, axolotls and spiny mice. He conducted research as a Visiting Fellow at the University of Kentucky and the Hubrecht Institute.
His research demonstrated that MAPK/ERK signaling acts as a molecular switch between regeneration and fibrosis in adult mammals and can be activated to stimulate a regenerative response, including new hair follicle formation, in scarring wounds.
He contributed to a pioneering study showing that spiny mice can recover heart function after infarct through enhanced angiogenesis, ECM remodeling and epicardium regeneration. He also played a key role in spatial transcriptomic studies that defined regenerative and fibrotic gene signatures in spiny mice, laboratory mice and gerbils.
He earned a PhD cum laude in Molecular and Cellular Life Sciences at the Max Planck Institute for Molecular Biomedicine.

He has been awarded an NWO Dutch Research Council Rubicon Postdoctoral grant to conduct research on the molecular drivers of fibroblast activation in wound healing and organ fibrosis.
His ultimate research aim is to crack the code of tissue regeneration and rejuvenation, reversing organ scarring and preventing fibrosis in injuries and pathological conditions, through the identification of therapeutic targets for enhanced tissue repair and functional recovery.

Driven by his innate curiosity and passion for science, he loves tackling new challenges, thinking outside the box, and building interdisciplinary collaborations to push forward the boundaries of knowledge.

His career goal is to serve as a group leader, fostering a collaborative environment where everyone can thrive, achieve their goals and leave a lasting impact through community-building and scientific discoveries for the benefit of humankind.

HONORS AND AWARDS

- Rubicon Postdoctoral Grant, NWO - Dutch Research Council (2024)
- Seal of Excellence Award, European Commission Horizon Europe - MSCA (2024)

- Merit Abstract Award, International Society for Stem Cell Research (ISSCR) (2022)
- Zhongmei Chen Yong Award for Scientific Excellence, International Society for Stem Cell Research (ISSCR) (2022)
- Long-Term Travel Grant, Boehringer Ingelheim Fonds (2018)
- Train-Gain Fellowship, Cells in Motion (CiM) Cluster of Excellence (2017)
- Train-Gain Fellowship, Cells in Motion (CiM) Cluster of Excellence (2016)
- DFG EXC 1003 - PhD Fellowship, CiM - International Max Planck Research School Graduate Program (2015)
- Master's Scholarship, Karolinska Institute – Department of Cell and Molecular Biology (2014)
- Travel Grant, Italian Association of NeuroImmunology (AINI) (2014)
- Premio CentoCentesimi, The International Association of Lions Clubs Distretto 108/A (2009)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Review Editor, Frontiers in Cell and Developmental Biology (2023 - present)
- Review Editor, Frontiers in Cellular Neuroscience (2021 - present)
- Elected Full Member, Sigma Xi – The Scientific Research Honor Society (2025 - present)
- Member, International Society for Stem Cell Research (ISSCR) (2022 - 2023)

PROFESSIONAL EDUCATION

- Doctor of Philosophy - cum laude, Max Planck Institute for Molecular Biomedicine / Westfalische Wilhelms Universitat , Molecular and Cellular Life Sciences (2023)
- Master of Science, Università Vita-Salute San Raffaele , Medical Molecular and Cellular Biotechnology (2014)
- Bachelor of Science, Università Vita-Salute San Raffaele , Medical and Pharmaceutical Biotechnology (2011)

STANFORD ADVISORS

- Michael Longaker, Postdoctoral Faculty Sponsor

LINKS

- LinkedIn: linkedin.com/in/antonio-tomasso/
- https://hageylabs.com/: https://hageylabs.com/

Research & Scholarship

RESEARCH INTERESTS

- Research Methods
- Science Education
- Technology and Education

LAB AFFILIATIONS

- Michael Longaker (10/23/2023)

Publications

PUBLICATIONS

- **Conservation of the tumour microenvironment across organs and species.** *Nature*
  Januszyk, M., Lu, J. M., Korah, M., Jing, S. L., Xie, P. Y., Fallah, M., Pham, B., Guo, J. L., Berry, C. E., Wang, H. H., Talbott, H. E., Nee, K., Le, et al
  2026

- **Species-specific housing and routine procedures for spiny mice (Acomys) maintained in large individually ventilated cages.** *Laboratory animals*
  Tomasso, A., Rodrigo Albors, A., Ferreira-Gonzalez, S., Clemens, A., Disela, V. A., Llorens Bobadilla, E., Lewandowski, S. A., Tiscornia, G., Lamas, S., Sousa, M. M., Mäkelä, O. J., Meller, A., Kuure, et al
  2026: 236772261458186

- **Ten simple rules for turning your qualifying exam into an NIH-style fellowship proposal: A guide for graduate students.** *PLoS computational biology*
  Peña-Lima, C., Bader, C. S., Ball, B. K., Dildine, T. C., Dissanayake, M. V., van 't Erve, I., Ibrayeva, A., Nippert, A., Quinn, M. K., Spinner, C., Thompson, S., Tomasso, A., Botham, et al
  2026; 22 (6): e1014420

- **Conservation of the tumour microenvironment across organs and species** *Nature*
  Januszyk, M., Lu, J. M., Korah, M., Jing, S. L., Xie, P. Y., Fallah, M., Pham, B., Guo, J. L., Berry, C. E., Wang, H. H., Talbott, H. E., Nee, K., Le, et al
  2026

- **Disruption of fibroblast MYD88 signaling promotes antitumor immunity in pancreatic ductal adenocarcinoma.** *Cell reports*
  Korah, M., Reveron-Thornton, R. F., Fallah, M., Xie, P. Y., Gonçalves, A., Guo, C., Agolia, J. P., Delitto, A. E., Flojo, R. A., Reddy, B., Yip, K. A., Lu, J. M., Tomasso, et al
  2025; 44 (10): 116347

- **Dissecting the Role of Perivascular Cells to Fibroblast Transition Through Single-Nucleus Transcriptomics in Skin Fibrosis**
  Tomasso, A., Griffin, M., Parker, J. B. L., Guo, J. L., Lu, J., Berry, C., Wan, D. C., Longaker, M. T.
  LIPPINCOTT WILLIAMS & WILKINS.2024: S397

- **Piezo Inhibition Prevents and Rescues Scarring by Targeting the Adipocyte to Fibroblast Transition**
  Griffin, M., Parker, J. B. L., Tomasso, A., Guo, J. L., Liang, N., Morgan, A., Kuhnert, M. M., Wan, D. C., Longaker, M. T.
  LIPPINCOTT WILLIAMS & WILKINS.2024: S385

- **Marvels of spiny mouse regeneration: cellular players and their interactions in restoring tissue architecture in mammals.** *Current opinion in genetics & development*
  Tomasso, A., Disela, V., Longaker, M. T., Bartscherer, K.
  2024; 87: 102228

- **Spatial transcriptomics reveals asymmetric cellular responses to injury in the regenerating spiny mouse (Acomys) ear.** *Genome research*
  van Beijnum, H., Koopmans, T., Tomasso, A., Disela, V., Te Lindert, S., Bakkers, J., Alemany, A., Berezikov, E., Bartscherer, K.
  2023; 33 (8): 1424-1437

- **An ERK-dependent molecular switch antagonizes fibrosis and promotes regeneration in spiny mice (Acomys).** *Science advances*
  Tomasso, A., Koopmans, T., Lijnzaad, P., Bartscherer, K., Seifert, A. W.
  2023; 9 (17): eadf2331

- **Ischemic tolerance and cardiac repair in the spiny mouse (Acomys).** *NPJ Regenerative medicine*
  Koopmans, T., van Beijnum, H., Roovers, E. F., Tomasso, A., Malhotra, D., Boeter, J., Psathaki, O. E., Versteeg, D., van Rooij, E., Bartscherer, K.
  2021; 6 (1): 78

- **Selective killing of spinal cord neural stem cells impairs locomotor recovery in a mouse model of spinal cord injury.** *Journal of neuroinflammation*
  Cusimano, M., Brambilla, E., Capotondo, A., De Feo, D., Tomasso, A., Comi, G., D'Adamo, P., Muzio, L., Martino, G.
  2018; 15 (1): 58

- **Generic wound signals initiate regeneration in missing-tissue contexts.** *Nature communications*
  Owlarn, S., Klenner, F., Schmidt, D., Rabert, F., Tomasso, A., Reuter, H., Mulaw, M. A., Moritz, S., Gentile, L., Weidinger, G., Bartscherer, K.
  2017; 8 (1): 2282

- **The H3K9 dimethyltransferases EHMT1/2 protect against pathological cardiac hypertrophy.** *The Journal of clinical investigation*
  Thienpont, B., Aronsen, J. M., Robinson, E. L., Okkenhaug, H., Loche, E., Ferrini, A., Brien, P., Alkass, K., Tomasso, A., Agrawal, A., Bergmann, O., Sjaastad, I., Reik, et al
  2017; 127 (1): 335-348

- **What makes y family pols potential candidates for molecular targeted therapies and novel biotechnological applications.** *Current molecular medicine*
  Tomasso, A., Casari, G., Maga, G.
  2014; 14 (1): 96-114