Stanford

Ileana Pirozzi

Ph.D. Student in Bioengineering, admitted Autumn 2018

Bio

BIO

Ileana Pirozzi, from Colleferro (Roma), Italy, is pursuing a PhD in Bioengineering at Stanford School of Engineering as a Knight-Hennessy (KH) Scholar. As part of the KH program, Ileana completed three years of global leadership training. In fulfillment of her PhD work, Ileana is leading a variety of projects to push the next generation of smart medical devices to prevent and treat heart failure. Her clinical focus is congestive heart failure and congenital heart disease, and her engineering approach includes biomimetic device design leveraging computational modeling, optimization techniques and soft robotics. Ileana is also interested in exploring novel approaches integrating AI and sensing for improved patient monitoring and long-term care.

Before coming to Stanford, Ileana was at Brown University, she earned a bachelor's degree in bioengineering and biomedical engineering. Ileana was a research intern at the NASA Ames Research Center and at the Tripathi Biomedical Engineering Lab at Brown. She was elected President of the Rhode Island Alpha Chapter of Tau Beta Pi, the National Engineering Honors Society. Additionally, she was named a Vincent and Ruby DiMase Research Fellow at Brown's School of Engineering and was a recipient of the Domenico Ionata Award for excellence in research and creativity in engineering, the Outstanding Senior in Biomedical Engineering Award, the Distinguished Thesis Prize and the K.T. Romer Undergraduate Teaching and Research Award. With a team of Brown University and RISD students, Ileana developed an implantable medical device for use in cardiopulmonary bypass surgeries. Further development of the device was pursued through a startup company under the name of EmboNet. The company was awarded several national and international prizes and grant awards.

HONORS AND AWARDS

- Fifty 50 - Top 50 scientists and researchers from top American institutions, Fifty Years Venture Fund (May 2021)
- Knight-Hennessy Scholars Fellowship, Stanford University (February 2018)
- First Prize at Johns Hopkins Healthcare Design Competition in Advanced Healthcare division, Johns Hopkins University (April 2018)
- Distinguished Thesis Prize, Brown University (May 2018)
- Domenico A. Ionata Award for Excellence in Research and Creativity in Engineering, Brown University (May 2018)
- Outstanding Senior Award, Brown University (May 2018)
- Di Mase Engineering Summer Fellowship, Brown University (May 2017)
- K. T. Romer Undergraduate Teaching and Research Award, Brown University (May 2015)

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Member, Tau Beta Pi - the National Engineering Honors Society (2016 - present)

EDUCATION AND CERTIFICATIONS

- Master of Science, Stanford University , BIOE-MS (2021)

- Sc.B. (Honors), Brown University, School of Engineering , Biomedical Engineering (2018)

Publications

PUBLICATIONS

- **RVEX: Right Ventricular External Device for Biomimetic Support and Monitoring of the Right Heart** *ADVANCED MATERIALS TECHNOLOGIES*
  Pirozzi, I., Kight, A., Shad, R. A., Han, A., Dual, S. A., Fong, R., Jia, A., Hiesinger, W., Yock, P., Cutkosky, M.
  2022

- **A new open-access platform for measuring and sharing mTBI data.** *Scientific reports*
  Domel, A. G., Raymond, S. J., Giordano, C., Liu, Y., Yousefsani, S. A., Fanton, M., Cecchi, N. J., Vovk, O., Pirozzi, I., Kight, A., Avery, B., Boumis, A., Fetters, et al
  2021; 11 (1): 7501

- **Cardiac Support for the Right Ventricle: Effects of Timing on Hemodynamics-Biomechanics Tradeoff** *Lecture Notes in Computer Science*
  Pirozzi, I., et al
  Springer, Cham.2021; FIM 2021: 385-395

- **Centrifugal Microfluidics Traps for Parallel Isolation and Imaging of Single Cells** *MICROMACHINES*
  Snider, A., Pirozzi, I., Tripathi, A.
  2020; 11 (2)

- **SELECTIVELY COMPLIANT ANNULOPLASTY RING TO ENABLE ANNULAR DYNAMICS IN MITRAL VALVE REPAIR EVALUATED BY IN-VITRO STEREOVISION**
  Frishman, S., Imbrie-Moore, A. M., Cutkosky, M. R., Kight, A., Pirozzi, I., Paulsen, M. J., Woo, J. Y., Am Soc Mech Eng
  AMER SOC MECHANICAL ENGINEERS.2020

- **Enabling In-Bore MRI-Guided Biopsies With Force Feedback** *IEEE TRANSACTIONS ON HAPTICS*
  Frishman, S., Kight, A., Pirozzi, I., Coffey, M. C., Daniel, B. L., Cutkosky, M. R.
  2020; 13 (1): 159–66

- **Microfluidic Immiscible Phase Filtration System for the Isolation of Small Numbers of Cells from Whole Blood** *CYTOMETRY PART A*
  Pirozzi, I., Snider, A., Kraus, M., Schonbrunner, E., Tripathi, A.
  2019; 95A (8): 885-897

- **Getting there and staying there: supporting and enabling persistent human life on Mars using synthetic natural rubber, self-healing materials, and biological batteries** *PLOS Synthetic Biology*
  Acharya, N., Baker, N., Bravo, M. K., Gu, K., Harken, S., Herschl, M. H., Petersen, A., Pirozzi, I., Spangle, D., Sun, G., Vuong, B., Averesch, N. J., Fujishima, et al
  2018