



**HARVARD**  
MEDICAL SCHOOL



**Boston  
Children's  
Hospital**

UNIVERSITÀ DI PISA

# Tesi all'estero

Tesi di Laurea Magistrale presso il *Boston Children's Hospital*  
della *Harvard Medical School* (Boston, MA, USA)  
*Pediatric Cardiac Bioengineering Laboratory*

## ◀ PROGETTI DI RICERCA ▶

**Robotic Implants:** This project involves creating robots that reside inside the body to modulate physiological functions. Specifically, this project is to create an implant to induce bowel lengthening. After lengthening is complete, the implant must be designed so that it can be removed from the body without surgery. Strong prototyping and system integration skills are needed. The project will span all the way from design to animal testing.

**Airway Stents:** This project involves applying principles from the fields of continuum and soft robotics to the design of airway stents that (1) can be easily inserted and removed, (2) promote mucociliary transport, and (3) can be custom molded inside the patient's airway. Strong design, prototyping and analysis skills are needed. The project will span all the way from process design to animal testing.

- ▶ Per allievi dei corsi di Laurea Magistrale in Ingegneria Biomedica e in Bionics Engineering
- ▶ Requisiti minimi:
  - ▶ media dei voti  $\geq 27$
  - ▶ ottima padronanza della lingua inglese (sarà valutata in sede di selezione dei candidati)
- ▶ Supervisor:
  - ▶ Ing. **Alessio Artoni** (Università di Pisa)
  - ▶ Prof. **Pierre E. Dupont** (Boston Children's Hospital)

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