

**Thesis Project Portfolio**

**OPTIMIZING PROCEDURAL DELIVERY METHODS FOR NOVEL MALE  
CONTRACEPTIVE IMPLANT**

(Technical Report)

**THE BURDEN OF CONTRACEPTION: ANALYSIS OF SOCIO-TECHNICAL  
FACTORS THAT INFLUENCE CONTRACEPTIVE USE AND DEVELOPMENT**

(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science  
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Bachelor of Science, School of Engineering

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## **Sociotechnical Synthesis**

Unintended pregnancies make up almost half of all pregnancies worldwide, despite barriers to contraceptive access being historically low. Even with increasing amounts of funding going towards increasing knowledge and awareness of family planning, the majority of the burden of preventing pregnancy has fallen onto women. Male contraception is an emerging medical field that has yet to have a product reach the market, but has made promising progress in recent years. I am working with a local startup, Contraline, to develop a biomechanically accurate model of part of the male reproductive system, the vas deferens. This product will aid their research in creating a long-acting reversible contraceptive option for men. The vas deferens model will help Contraline ensure the successful delivery of their contraceptive into the male reproductive system.

Contraception is an essential part of the health and wellbeing of men and women. It is important to consider how a certain method is viewed by potential users and their partners. The Social Construction of Technology identified the connection between contraception and social influence by highlighting how society impacts the development of birth control. Societal norms impact which contraceptive methods have been most widely used and accepted in different regions across the world. A thorough literature review was conducted to compile peer reviewed articles pertaining to the development and implementation of contraception throughout the world. These articles were analyzed through the framework of the Social Construction of Technology to determine which social and technological factors have influenced the development of contraception. The development of contraception has been greatly impacted by the social and political climate in which they were first created. Many of these social influences have directed research and development to focus on only women's options for contraception. As is true with most medical developments, the most effective path medically is not always the innovation accepted as a new potential technology. The needs of the user, social and political norms, and scientific knowledge must be carefully balanced to create a successful product that will succeed in the consumer market and with individual users.