Sylvia Baeyens

Biomechanial Engineer & Data Scientist

---

sbaeyens@usc.edu | 908-635-0091 | www.linkedin.com/in/sylviabaeyens

---

EDUCATION

University of Southern California Division of Biokinesiology, Los Angeles, CA
Masters of Science in Biokinesiology with Sports Science Emphasis **May 2022**
GPA: 3.80/4.0

Boston University College of Engineering, Boston, MA
Bachelor of Science in Biomedical Engineering **January 2020**
Presidential Scholar, Dean's List
GPA: 3.43/4.0

CURRENT PROJECT

Quantification of Dynamic Knee Valgus in Soccer Players **September 2021- present**

- Piloting the use of myoMOTION inertial measurement units (IMU) to quantify knee angles during game play
- Validating IMU data with Qualisys motion capture data

RESEARCH EXPERIENCE

Clinical Biomechanics Orthopedic and Sports Outcomes Research (COOR) Lab **September 2020- present**
Research Assistant Los Angeles, CA

- Conducting data analysis for PAC-12 funded research study exploring UCL injury risk reduction factors in baseball players
- Leading stations collecting data on hip abduction strength and lumbopelvic control and stability using dynamometers and inclinometers

Albro Tissue Engineering Laboratory **January 2017- May 2018**
Research Assistant Boston, MA

- Researched optimization of artificial cartilage growth
- Analyzed results from ELISAs, assays, and mechanical testing and compared to properties of native cartilage

PROFESSIONAL EXPERIENCE

Oklahoma City Thunder **January 2021- May 2021**
Performance Science Data Analyst Intern remote from Los Angeles, CA

- Performed analysis on leg strain asymmetry data gathered from athletes returning to play post-injury
- Created, maintained, and updated databases including data gathered from wearable technology and player testing

Magenta Therapeutics **January 2020- August 2020**
Chemistry, Manufacturing, and Controls Process Analytics Intern Cambridge, MA

- Extracted process data from manufacturing batch records to support clinical development for stem cell transplants
- Investigated quantitative relationships between characteristics of the starting material and in-process measurements
- Analyzed flow cytometry data generated by external partners in support of assay development activities

MED-EL **June 2019- August 2019**
Research & Development Intern Innsbruck, Austria

- Designed and prototyped hardware for clinical patient testing using Solid Works, 3D printing, and soldering skills
- Prepared literature reviews on current clinical protocols to advise on future MED-EL experiments

DESIGN PROJECTS

Design of a Bone Morphogenetic Protein Based Carapace Repair Device **September 2018-May 2019**

- Developed and analyzed delivery methods of growth hormone to the site of anthropogenic injuries to promote bone healing
- Investigated alternative biomaterials and injectable carriers for animal study use

AWARDS & ABSTRACTS

"Undergraduate Poster: Second Place for 'Design of a Bone Morphogenetic Protein Based Carapace Repair Device": 45th Annual Northeast Bioengineering Conference (March 2019)

Localization of delivery of moderated, near-physiologic levels of active TGF-beta can produce engineered cartilage of improved tissue quality, presented at the 8th World Congress of Biomechanics, Tianbai Wang, Danial Sharifikia, Sylvia Baeyens, and Michael B. Albro (July 2018)

SKILLS

Biomechanics Lab Technology | IMeasureU, Qualisys, myoMOTION Noraxon, Catapult

Physiological Data Collection | MaxHR testing, PNOĒ Metabolic Analysis System

Data Processing, Analysis & Visualization | MATLAB, R, SPSS, FlowJo**,** Microsoft Excel, R Shiny, SQL, Git

Wet Lab Skills | GAG Assays, ELISAs, Spectroscopy, Sterile Work with Tissue Samples & Cell Cultures

Design & Manufacturing | SolidWorks, soldering

Certifications | HIPAA, CITI Basic Biomedical Research, CITI Best Practices for Clinical Research

Languages | English (fluent), Dutch (fluent), French (beginner)