Below is a list of projects available for Gillette’s Summer Research Internship in 2018. The formal program will start with orientation on June 4th and end with poster presentations on August 3rd. Dates are subject to change. Projects may have the flexibility to start earlier or extend farther, if agreed upon by students and mentors.

Carefully review the available projects. Pay special attention to minimum requirements, which are outlined for each project. Tailor your statement of interest to highlight which project(s) is/are of most interest to you and how you are qualified to make a meaningful contribution to the project. As part of the online application process, you will need to rank your project preferences. Every effort will be made to accommodate your choices.

I. USE AND EFFECTIVENESS OF BRACING IN NEUROMUSCULAR SCOLIOSIS.
 Areas: Musculoskeletal
 Mentors: Walter Truong, MD
 Seeking: 1 intern
 Requirements: Intern can be an undergraduate or graduate student and able to commit 20-40 hours per week.

Description: Spine bracing has been shown to be very effective in controlling progression of scoliosis in healthy children. However, the literature is sparse when it comes to bracing in children affected by neuromuscular conditions such as cerebral palsy. This study would be a retrospective review evaluating the current pattern of use and to determine whether brace prescription correlates with need for surgery. This would provide preliminary data for a future prospective randomized trial.

II. PAIN OUTCOMES IN CHILDREN AND ADULTS CEREBRAL PALSY.
 Research Areas: Pain, Outcomes
 Mentor: Chantel Barney, PhD
 Seeking: 1 intern
 Requirements: Intern can be an undergraduate or graduate student and able to commit 20-40 hours per week.

Description: Spasticity (muscle stiffness) affects a large number of children and adults with cerebral palsy (CP). Baclofen is a drug that is commonly used to treat spasticity in individuals with CP, and many patients receive continuous doses of baclofen through an intrathecal pump. Gillette is working on a study to understand the impact of intrathecal baclofen on children’s pain duration, pain intensity and muscle spasticity. Intern tasks for this project will include assisting with data collection from patient charts and patient research visits. The long term goal of this project is to gain a better understanding of pain and function in people with CP who receive this treatment.

III. CHARACTERIZATION OF PAIN EXPERIENCE AND VIRTUAL REALITY FOR PAIN PREVENTION.
 Research Area: Pain
 Mentor: Chantel Barney, PhD
 Seeking: 1 intern
**Requirements:** Intern can be an undergraduate or graduate student and able to commit 20-40 hours per week.

**Description:** Intern will potentially work on two different projects. The first will focus on understanding chronic pain experience of patients who are treated at Gillette. The second will seek to evaluate virtual reality as a pain prevention strategy in clinical settings. Tasks will include collecting data, assisting with project implementation and training. The long term goals of both of these projects are to better understand the prevalence of chronic pain and to understand interventions that might effectively reduce pain, such as virtual reality.

**IV. Intrathecal Baclofen Pump Registry Compilation and Analysis at Gillette**

**Area:** Neuroscience  
**Mentors:** Sam Roiko, PhD and Angela Sinner, MD  
**Seeking:** 2 interns  
**Requirements:** Interns can be an undergraduate or graduate students and each able to commit 20-40 hours per week.

**Description:** Gillette has been implanting intrathecal baclofen pumps to treat spasticity for many years, and has one of the largest populations of patients with intrathecal baclofen pumps. The aim of this study is to characterize current numbers of patients that have intrathecal baclofen pumps, collect and compile relevant data into a database, and to collaborate in analyzing how outcomes varied over time. This is a retrospective chart review of patients who have allowed their records to be used for research. We are seeking two summer interns to assist in compiling data from medical records and entering into an online REDCap database for defined years, and collaboratively compare and analyze the compiled data to identify changes in practice or outcomes. In addition, the interns will become familiar with the use of intrathecal baclofen pumps for the treatment of spasticity.

**V. Physical and Occupational Therapy Outcomes Pre and Post Selective Dorsal Rhizotomy and Space Utilization in Gillette’s St. Paul Rehabilitation Therapies Location**

**Area:** Rehabilitation Therapy, Outcomes  
**Mentors:** Erin Ballou OT, Amy Schulz PT, Candice Johnson OT  
**Seeking:** 1 interns  
**Requirements:** Interns can be an undergraduate or graduate students and each able to commit 20-40 hours per week. One week will need to be 40 hours. This week can be determined in partnership with intern and mentors based on scheduling needs.

**Description:** Physical and Occupational Therapists have been gathering data pre and post selective dorsal rhizotomy (SDR) surgery for children with cerebral palsy. Part of the standard of care post- SDR at Gillette is for admission for an inpatient rehabilitation stay during which patients receive intensive therapies during their recovery. We are seeking an intern to complete a retrospective analysis of the data and work together with our therapists and research team to analyze trends. The intern will be looking at factors such as (but not limited to): age, Gross Motor Function Classification System (GMFCS) level, and/or Gross Motor Function Measure (GMFM) scores, as well as assessments related to the patient’s strength, fine motor skills, balance, and functional outcomes.
Additionally, space utilization and need is often an issue in Rehabilitation Therapies that can impact our ability to meet the needs of our patients and also to grow our services. An additional smaller scale project that takes a detailed look at the space and equipment used in therapies, as well as noise levels over a one week period is needed. The intern will obtain data, observe therapies, and share preliminary findings with the group to begin process improvement for space utilization.