Computational Biology and Bioinformatics

As the research community improves its knowledge of the molecular basis for diseases such as cancer, autoimmune and mental health disorders, treatments for these illnesses become more focused on precision medicine and the use of computational biology and bioinformatics experts. Rather than targeting a specific organ in cancer treatment, for example, a specific gene that may cause cancer in several different organs will be the target of treatment.

In order to understand molecular targets and gain approval for novel treatments, clinical trials must be focused on clearly demonstrating the link between the genetic mutation and the disease. Essex has supported adaptive clinical trials that targeted specific biomarkers and genetic profiles and integrated clinical data with this information to randomize patients into appropriate trial arms. The heuristic system supporting those trials learned from each patient, providing for expedited results and a much more accurate randomization process as patients moved through the trial. Essex is also supporting a national precision medicine trial that matches cancer patients who have failed traditional therapy to specific, novel treatments targeting specific genes. This knowledge, technical and program management experience allows the Essex team to provide insight and practical support for organizations who wish to undertake precision medicine trials.

Our Core Expertise:

Development of Genetics and Phenotypic Databases • Development of Analytics / Algorithms • Data Management • Genetic Sequencing • Design of Query Interfaces