Vision:
Stars are the beacons of the universe, and it is around stars that planets are formed and that life may exist. We want to map out the distribution of stars in our galaxy and measure their physical properties with the highest precision currently possible. Our vision is to build an encyclopedia describing the properties and lives of stars that will enable astronomers to understand the cosmic processes that led to life on Earth and to identify potential habitable worlds around other stars.

Faculty:
Dr. Doug Gies studies the most massive stars in our galaxy, the OB stars. These are often found in systems of two or more stars, are sometimes surrounded by massive spinning disks, and generate powerful winds that replenish and churn out the interstellar clouds from which new stars are born.

Dr. Todd Henry studies the smallest and most abundant stars in our galaxy, the M dwarfs. He leads the RECONS consortium, an international collaboration of astronomers devoted to identifying and accurately measuring the physical properties of all the stars and brown dwarfs within 80 light years of the Sun.

Dr. Russel White studies the formation of evolution of stars and planets. He does this by using a variety of observational techniques to precisely measure the properties of stars and constrain theories of stellar evolution. These precision measurements are also leading to the discovery of the youngest planets known.

Dr. Sebastien Lepine is an expert in large astronomical surveys and data-mining techniques. He maintains a catalog of 2.5 million stars closest to the Sun, identifying the best systems to search for exoplanets. He also studies the motions of stars near the Sun, and how these can retrace the formation and history of our galaxy.

Dr. Fabien Baron is an expert in the technique of optical interferometry, which makes it possible to obtain exceptionally precise images of distant stars and star systems. Dr. Baron’s methods are used to measure diameters of distant stars and track the orbital motions of stellar binaries and triples.

Goals:
★ Partnership in a 4m telescope consortium.
★ Acquisition or construction of small (1-2m) telescopes for dedicated surveys.
★ Faculty hire of an exoplanet expert.
★ Prize postdoctoral fellowship in stellar astrophysics.
★ Graduate research fellowship in stellar astrophysics.
★ Establishment of a data center or digital encyclopedia for nearby stars.

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