Extracellular vesicles (EVs), ranging in size from nanometers to microns, are secreted not only by essentially all cells in the body, but are also secreted by every living cellular organism, from eukaryotes to prokaryotes. EVs represent the universal communicator and play a significant role in intercellular communication throughout life, both in health and disease, providing for pathogen to host interaction, acting as delivery vehicles between cells, transporting intraluminal and surface cargo, including DNA, RNA, proteins, lipids, proteoglycans, metabolites and organelles between cells. Because EVs evolved to deliver cargo, they have gained increasing attention in recent years as vehicles for delivering either native and/or engineered cargo components for therapeutic-specific applications. My laboratory considers multiple aspects of engineering both the surface and the luminal cargo of EVs, as well as the study of normal EV biology. We study how both natural and engineered EVs are involved in normal growth and development, as well as under various pathological states. Therapeutically, we are interested in developing novel strategies toward musculoskeletal tissue regenerative medicine, organ transplantation, cancer and infectious disease.