Dr. Howard’s research involves the study of beneficial symbioses, including how symbiotic partners choose and ‘communicate’ with one another and how specificity in ‘partner choice’ evolves. Her primary focus has been on the symbiosis between legume plants and nitrogen-fixing root bacteria, although she also has conducted research on a squid-luminescent bacteria symbiotic system. Her work also incorporates the biodiversity of legume rhizobial partners, especially the identification of unusual bacterial strains that reside in root nodules of desert-adapted plants.