The ERGo system is low-cost and species-agnostic, and, if disseminated as a citizen science initiative, presents an opportunity to shed light on broad patterns in insect visual ecology. However, the current system only leverages one test: the critical flicker fusion frequency test (CFF), which measures the retina's limit for distinguishing increasingly high-frequency flashes in time before the flashing resolves as a single steady light presentation. By analyzing responses to low frequencies, the CFF test allows for the extraction of important metrics, including on-transients, off-transients and holding potentials (Stowasser, Mohr, Buschbeck, & Vilinsky, 2015). While CFF is a useful tool to understand trade-offs between spatial and temporal resolution, the ERGo platform is currently unprepared to equip citizen scientists with tools to investigate visual ecology beyond a single metric. To widen the aperture of this investigation, I suggest an additional test for getting response curves to each color in light/dark-adapted preparations. The “Purkinje shift” in spectral sensitivity has been described in many organisms, including flies (Fingerman & Brown, 1952). Light/dark adaptation is an ecologically relevant paradigm for considering insect vision, as animals often need to transition between dim and bright environments and therefore need to adjust their strategy for vision. Changes in visual perception strategy occur retina of cockroaches (Heimonen et al., 2012), and it follows that many other species would need to do the same, as they often transition from brightly lit daytime environments to dark burrows and nests. The shape of ERG amplitude response curves across brightness values, after 20 m light or dark adaptation, will allow for the generation of explanatory hypotheses for CFF values. As an alternative to light/dark adaptation, blue light adaptation (as a proxy for early morning spectra) vs red/green light adaptation (as a proxy for midday spectra).

Fingerman, M., & Brown, F. A. (1952). A " Purkinje Shift " in Insect Vision The Protective Effect of Glutathione against Radiation-induced- Chromosome Aberrations1.

Heimonen, K., Immonen, E.-V., Frolov, R. V., Salmela, I., Juusola, M., Vähäsöyrinki, M., & Weckström, M. (2012). Signal coding in cockroach photoreceptors is tuned to dim environments. *Journal of Neurophysiology*, *108*(10), 2641–2652. https://doi.org/10.1152/jn.00588.2012

Stowasser, A., Mohr, S., Buschbeck, E., & Vilinsky, I. (2015). Electrophysiology Meets Ecology: Investigating How Vision is Tuned to the Life Style of an Animal using Electroretinography. *Journal of Undergraduate Neuroscience Education*, *13*(3), A234–A243. Retrieved from www.funjournal.org