ity due to shifting tides and local weather conditions. Light scattering increases as turbidity increases, reducing sighting distance. Furthermore, these waters are often spectrally narrow, decreasing contrast of color signals. How have animals in tidal creeks adapted to the demands of their dynamic visual environments? Both green porcelain crabs, Petrolisthes armatus, and black-fingered mud crabs, Panopeus herbstii, inhabit the same tidal creeks. Their similar body plans reflect convergent evolution as their lineages diverged over 200 mya. To study their visual systems, we employed two methods: electroretinography (ERG) and optomotor behavioral experiments. Using achromatic optomotor stimuli (black and white stripes), we found porcelain crabs exhibit a spatial resolution between 4 and 10°. Additionally, we used polarized optomotor (perpendicularly arranged linear polarized filter) to test polarization sensitivity. We found porcelain crabs do not reliably follow polarized stimuli, but mud crabs appear to. Using ERG, we found the compound eyes of P. armatus demonstrate broad spectral responses consistent with at least two spectral classes of photoreceptors. Present results suggest porcelain crabs and mud crabs have distinct adaptations to tidal creek environments. We anticipate porcelain crabs may forgo polarization sensitivity in favor of color perception while mud crabs do the opposite.

676 Aubrey Jane, Doug Rasher, Eric Annis, Jesica Waller, Markus Frederich

Ontogenetic shifts in thermal tolerance of the American lobster (Homarus americanus)

The American lobster is an ecologically and economically important species in the Gulf of Maine. Climate change is reshaping its biogeography; therefore, understanding the physiology of this species is required to predict future range shifts. While the thermal tolerance of adult lobsters is well studied, thermal tolerances of the earliest developmental stages remain understudied, and previous research has used only lab-reared larvae. We reared lobsters up to stage IV and exposed them to acute (4°C-32°C) or chronic (8°C-26°C) temperature treatments in each stage. Post-larvae were also caught in the wild to allow for comparisons between lab-reared larvae and natural populations. Critical temperatures, defined by a complete lack of scope for activity after acute (20-minute) exposure, were reached at 4 and 32°C in stages I and II; 8 and 32°C in stage III, and 8 and 26°C in stage IV. Wild stage IV lobsters reached critical temperatures at 4°C and 32°C. These ontogenetic shifts in thermal tolerance, as well as the discrepancy between lab and wild lobsters, were corroborated by chronic exposure assays and molecular data. The reduced thermal tolerance of lab-reared larvae suggests an important limitation in our current knowledge of the thermal tolerance of larval stages. Such results have important implications for understanding the drivers of settlement patterns, and therefore species distribution in a changing climate.

1082 Judith Janisch, Jesse Young, Nicole Schapker, Noah Dunham, Allison McNamara, Lydia Myers, Liza Shapiro, Taylor Phelps

Substrate-related variation in limb joint kinematics in wild primates

Arboreal locomotion is precarious and places multiple challenges upon stability when moving over narrow, compliant, angled, and disparate supports. Previous research has shown that captive primates often respond to narrower and steeper supports by flexing limb joints (thereby lowering the center of mass) and adopting a compliant gait, marked by increased proximal joint excursions and increased yield at distal joints (thereby flattening the center of mass trajectory). We tested if these strategies are also adopted by wild primates – including platyrrhines, catarrhines and strepsirrhines – freely ranging over a variety of supports in their natural habitats. We used ImageJ to measure the angular kinematics of forelimb and hindlimb joints from high-speed videos of quadrupedal locomotion on a variety of arboreal supports. Spearman rank order correlations were used to test for associations between joint posture and support diameter/inclination (measured using a forestry-grade rangefinder). Preliminary results partially confirm previous kinematic studies of captive primates and suggest that variation in support orientation, rather than diameter per se, may exert a stronger influence on quadrupedal gait kinematics in primates moving in natural environments.

1160 Judith Janisch, Leonida Fusani, Cliodhna Quigley, Elisa Perinot

Variability in courtship movements influences mating success in golden-collared manakins

Differences between individuals can have a great impact on mate choice or male-male competition and are often selected for. In this study, we investigated individual variability in courtship movements of the lekking male golden-collared manakins when displaying in their courtship arenas to attract females and to