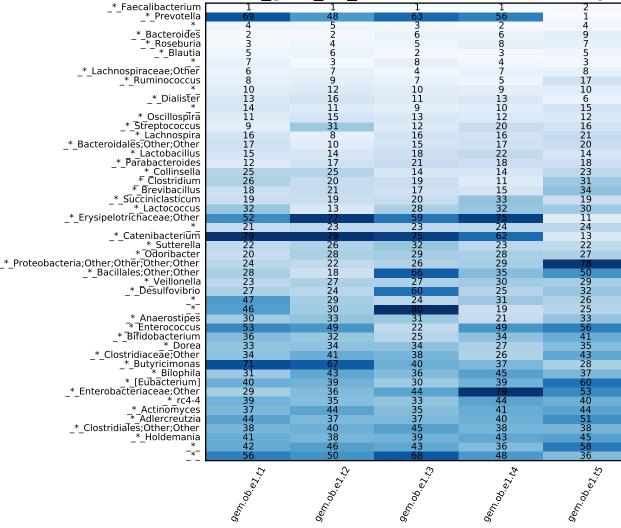LEA_gem_ob_e1: rank matrix & stability