Preface

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Scalability of open-ended evolutionary processes depends on their ability to exploit functional modularity, structural regularity and hierarchy. Functional modularity creates a structural separation of function that reduces the amount of coupling between internal and external behavior, allowing evolution to reuse modules as high-level building blocks. Structural regularity is the correlation of patterns within an individual, such as symmetry, repetition and self-similarity, allowing evolution to specify increasingly extensive structures while maintaining short description lengths. Hierarchy is the recursive composition of function and structure into increasingly larger and adapted units, allowing evolution to search efficiently increasingly complex spaces. This workshop will bring together researchers interested in these topics to discuss how principles of modularity, regularity and hierarchy can be applied in open-ended evolutionary computation. The goal of this workshop is to encourage discussion of these topics across boundaries within the evolutionary computation field. The following pages include position statements of some of the workshop participants.