Abstract: About thirty years ago, Thomassen announced the following conjecture in graph theory: for all positive integers k, g there exists some D such that any graph with average degree at least D must contain a subgraph which has average degree at least k AND at the same time does not contain any cycle of length g or smaller. The conjecture is still open but it is known to be true with some additional constraints on the graph or when g ≥ 6. This seminar will present joint work with Daniel Martin, Vaclav Koubek, and Vojta Rodl.