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**Alex Sistko\***, 14 MacLean Hall, Iowa City, IA 52242-1419, and **Miodrag Iovanov**, 14 MacLean Hall, Iowa City, IA 52242-1419. *Maximal Subalgebras of Finite-Dimensional Algebras*. Preliminary report.

Let  $B$  be a finite-dimensional algebra over a field  $k$ . Then is it natural to ask which  $k$ -algebras  $A$  can appear as maximal subalgebras of  $B$ , and which ring-theoretic/representation-theoretic properties of  $A$  are inherited from  $B$ . We focus on the cases where  $B$  is either semisimple or a quiver algebra. For the former case we provide a classification of maximal subalgebras. In attempting to answer the latter we are naturally led to split-by-nilpotent extensions, which have appeared in various other contexts in representation theory. We discuss examples where the extension  $A \subset B$  is split-by-nilpotent, how to reduce to this case in a generic way, and what we might do when this reduction significantly alters the algebras  $A$  and  $B$ . Joint work with Miodrag Iovanov. Work in progress. (Received August 28, 2016)