1102-57-153 **Tim D Cochran*** (cochran@rice.edu), MS-136 Math. department, Rice University, PO Box 1892, Houston, TX 77251-1892, and **Christopher W Davis**. *The role of the Seifert surface in knot concordance.* Preliminary report.

In 1969 Jerome Levine successfully classified higher-odd-dimensional knot concordance in terms of simple invariants, namely linking numbers, of special links on an arbitrary Seifert surface. For knots in S^3, it was known that the situation is more complicated but this philosophy has nonetheless dominated the search for a characterization of slice knots. In this work we discuss unexpected failures of Levine's program and indicate refinements necessary to recover this strategy.

For any algebraically slice knot K and any genus g Seifert surface for K, there exists a g-component link, J, with zero pairwise linking numbers, embedded on the Seifert surface, called a *derivative of* K. If J is a slice link then K is a slice knot. The converse was conjectured by Kauffman: If K is a slice knot then one of its derivatives must be a slice link, or at least be algebraically slice. The authors recently showed this is false in some cases. Thus Levine's philosophy needs to be modified if it is to be used. In this talk we discuss precisely when and how this conjecture fails, what CAN be said about J, and give applications which are especially striking for genus one knots. (Received July 27, 2014)