1015-57-220 **Brendan Owens*** (owens@math.lsu.edu), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803, and **Saso Strle**. *Three-manifolds which do not bound negative-definite four-manifolds.* Preliminary report.

I will describe a generalisation of Elkies' characterisation of the diagonal unimodular form to forms of arbitrary determinant. This may be combined with theorems of Frøyshov and Ozsváth-Szabó to show that certain 3-manifolds do not bound smooth four-manifolds with negative-definite intersection forms. As an example, I will describe a set of surgeries on torus knots which do not bound negative-definite four-manifolds. (Joint work with Sašo Strle.) (Received February 06, 2006)