

## Simple Becker Problem

group objective function for group  $k$ ; bids  $b_k$  must be non-negative

$$(b_k - b_{-k}) - \beta(b_k - b_{-k})^2/2 - c_k b_k^2/2$$

one group's gain  $b_k - b_{-k}$  is the others loss  $b_{-k} - b_k$

1. show that a Nash equilibrium exists and is unique
2. when is the equilibrium interior?
3. in the interior case compute the Nash equilibrium
4. how do the bids and the transfer  $b_k - b_{-k}$  depend on  $\beta, c_k$ ?
5. Becker says: higher cost, lower bid – is that correct?
6. Becker says: less efficiency less transfer – is that correct?