1135-92-2558 **Timothy C Reluga*** (treluga@math.psu.edu). *Social distancing epidemic games, diagnosis, and incomplete information.*

Within the epidemic game literature, there is a disagreement over whether increases in infection risk can discourage prevention. In one theory, increases in infection pressure motivate prevention, while in another, there is a turning-point beyond which investments drop off. The discrepancies between these theories can be resolved by modeling diagnosis events explicitly. Here, we show a unified theory exhibits a turning-point in the optimal social-distancing response to infection pressure. The turning point is a consequence of decision making under incomplete information. With reliable diagnosis, prevention always offsets infection risk. Without reliable diagnosis, individuals may be best-off assuming they are infected once infection pressures are sufficiently high. This creates a public-health trap with high prevalence that can not be escaped by unilateral action. We estimate conditions for HIV, and conclude that turning-point effects likely contribute to traps for core-groups found in some sub-Saharan countries. (Received September 26, 2017)