

- physiological process
- cellular physiological process
- interaction between organisms ♦
  - cell killing
  - competition with other, non-host, organism ♦
  - multi-species biofilm formation ♦
    - multi-species biofilm formation in or on host organism ♦
    - multi-species biofilm formation on inanimate substrate ♦
  - symbiosis, mutualism through parasitism ♦
  - symbiotic interaction between host and other organism ♦
    - acquisition of nutrients from host ♦
    - adhesion to host ♦
      - cytoadherence to microvasculature
      - multi-species biofilm formation in or on host organism ♦
      - single-species biofilm formation in or on host organism ♦
    - avoidance of host defenses ♦
      - evasion of host defenses ♦
        - evasion of host defense response
        - evasion of host immune response
        - viral host defense evasion
    - suppression of host defenses ♦
  - dissemination or transmission of an organism from a host ♦
    - dissemination or transmission of an organism from a host by a vector ♦
    - viral transmission
  - entry into host ♦
    - entry into host cell ♦
    - entry into host through host barriers ♦
    - entry into host through natural portals ♦
  - growth on or near host surface ♦
  - growth within host ♦
  - induction of host defense response ♦
    - viral induction of host immune response
  - modification of host morphology or physiology ♦
    - disruption of host cells ♦
    - induction in host of a tumor, nodule, or growth ♦
    - viral host cell process manipulation
    - viral transformation
  - movement within host ♦
    - migration within host ♦
    - viral spread within host
  - pathogenesis
  - recognition of host ♦
  - translocation of molecules into host ♦
    - translocation of DNA into host ♦
    - translocation of proteins or peptides into host ♦
  - virus-host interaction
  - symbiotic interaction with other, non-host organism ♦

**Figure 1.** Newly developed GO terms for the Biological Process ontology, showing the parent-child relationship among terms. All terms marked by a star (♦) were developed by PAMGO and added to GO in January, 2005. The unmarked terms were already in GO but were integrated as children to newly-developed PAMGO terms when appropriate.