

**BIOLOGY 459 (CRN 10437)**  
**HUMAN MICROBIAL**





V\*\*#(8-. "#(' 0''' 0#\$' +>\$0"-6\$\*.#\$. "#>\$+"#\$9\$6\*\$G\*\*#G7#6'. 0-8%0(-.#(-#' +8%\$06(' \$\*/8-/(' .#.\$' +#(-#01''#  
"0%\*8.69''#8. "#(E#.08+''' 0.#"- , 6.0''-''+#' #01''6-#%\*\$.. \_#T1''#>\$0"-6\$\*#. #/-(0''%0''+#8' +''-#%(/7-6, 10#)\$) ;#''9''' #  
6E# (0#>\$-&' +#) 601#)\$#] C#V' 7#E8-01''-#8. "#(-#+6.0-6G806(' #(E#>\$0"-6\$\*. #0(#01''-.#"-=86-''.#01''#) -600''' #  
/'->6. 6('E#01''#6'. 0-8%0(-:#'0%''/0#8' +''-#E\$6-#+'\$'6' , #(-#\$' (01''-#''0%''/06(' #6' #01''#^(/7-6, 10#V#0G#  
R6(\*\$06(' .#>\$7#-'' .8\*0#6' #+6.%/\*'6' \$-7#\$%06(' #8' +''-#01''#R N A M

A AC #

#

O

T1''#Q' 69''-. 607#(E#R6%0(-6\$#. #%( >>600''+#0(#/-(> (06' , #%-606%\$\*\$%\$+">6%#+6.%(8-. "#) 16'''#/- (96+6' , #\$\$  
-''./''%0E8\*\$'\$' +#.8//(-069''#''\$'- 6' , #'' 96-( '>' 0G#V\*\*>">G''-. #(#01''#8' 69''-. 607#%(>>8' 607#1\$9''#01''#  
-6, 10#0(#016.#'0/'-6''' %"\$S' +#01''#"-./(' .6G6\*607#0(#1''#/#-''\$0''#.8#1#\$' #'' 96-( '>' 0G#T1''#Q' 69''-. 607#) 6\*\*#  
' (0#0(''- \$0''#-\$%6. >#."08\$\*6[" +#96('"'#;#(-#\$' 7#E(->#(E#+6.%-6>6' \$06(' ;#G8\*\*76' , #(-#1\$-\$.. >' 0G#  
P\*\*\$. "#G''#\$+96. ''+#01\$0:#G7#( , 6' , #6' 0(#QR6%\_#''\$'- 6' , #.7.0''>.#(-#6' 0''-\$%06' , #) 601#(' '6' "#-. (8-%'. ;#\$' +#  
%(8-. "F-''\*\$0''+#%(>>8' 6%\$06(' #/'\$0E(->.#7(8#-\$'''' , \$, 6' , #6' #8#8' 69''-. 607#\$%069607G#  
V\*\*#6' 0''-\$%06(' .#) 6016' #016.#'' 96-( '>' 0#\$'-#8GZ''#0#0(#01''#8' 69''-. 607#''0/'\$%06(' .#\$' +#/'%66''.G#V' 7#  
%('%'-' .#\$G(80#08+''' 0#%(' +8%0#>\$7G''#-'96'') ''+#\$' +#-. /(' +''+#0(#' #\$\$%(-+'\$' %''#) 601#01''#\$//(-(/-6\$0''#  
8' 69''-. 607#/'%67G#  
T(#-''/(-0#%(' %''-'. #G(80#(' '6' "#.08+''' 0#%(' +8%0# #(' '6' ''(' +8%0U89%6%\$#

M H

V# (0''#0(#-''>6' +#7(8#0(#0\$&'#%\$-''#(E#7(8-. ""E#a6>6' 6.1'' +#>' 0\$\*#1''\$\*01#%\$' #6' 0''-E''-''#) 601#(/06>\$\*#  
\$\$+\$+">6%#/'-E(->\$' %'G#a(#7(8-#G'.0#0(#'' , \$, ''#6' #. ""EF%\$-''#\$' +#>6' 0\$6' #G#1''\$\*017#6E''.07'''#016.#  
.">".0''-G#T16.#) 6\*\*#1'''#7(8#\$\$16''9''#7(8-# , (\$\*.#\$' +#%(/''#) 601#0-''..G#V\*\*#(E#8.#G''' "E60#E- (>#.8//(-0#  
+8-6' , #06>''.(E#.0-8 , , ""G#0(8#\$-''# (0#\$\*( ' "G#T1''#. (8-%''#(E#.7>/0(> .#>6, 10#G''#-''\*\$0''+#0(#7(8-#% (8-. "#  
) (-&c#6E#.(#/'"\$' .#./''\$&#) 601#> "G#d() "9''-;#/- (G'''> .#) 601#(01''-#/\$-0.#(E#7(8-#6E''#%\$' #\$. (#%(' 0-6G80''#0(#  
+'%-\$' ."+#\$\$+\$+">6%#/'-E(->\$' %'G#T1''#QR6%#08+''' 0#1'''''''' .#^'' 0-''#/- (96+''.#%(.0FE-''''#\$' +#%(' E6+'' 06\$\*#  
>' 0\$\*#1''\$\*01#.'-96%''.#0(#1''#7(8#>\$' \$, #/'-'. (' '\$%#1\$\*\*\*\*' , ''.#01\$0#>/\$%0#7(8-#>(06(' '\$#(-#\$\$+\$+">6%#  
) ""\*FG''6' , G#

