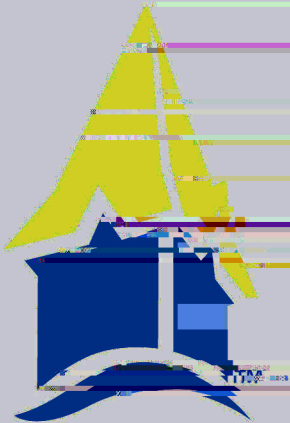


! " # \$ % & ' ( ) \* # + \$ , " + - . & / . " \$ ( \$ ( , 0 & / \$ + 1 \* &  
'2



!"#\$%&' (&)\*&#+%&, - . /0#" 1&2 3%1 - 3%1#4&)\*&5678  
89&: ;<;=;&>5?@5 %#&4%A;B

!" # \$ % & ' ( # ) \$ \* ) \$ + , & \$ - ) \* + & . \$ / + 0 + & ( \$ ( , 0 1 1 2 \$ # ) \$ + , & \$ 3 0 ( \* ( \$ # 4 \$ ( & 5 2 \$ 3 & \$  
& 5 6 1 7 . & . \$ 4 ' # 8 \$ + , & \$ % 0 ' + \* 6 \* % 0 + \* # ) \$ \* ) 2 \$ 3 & \$ . & ) \* & . \$ + , & \$ 3 & ) & 4 \* + ( \$ # 4 2 \$  
# ' \$ 3 & \$ ( 7 3 9 & 6 + & . \$ + # \$ . \* ( 6 ' \* 8 \* ) 0 + \* # ) \$ 7 ) . & ' \$ 0 ) : \$ & . 7 6 0 + \* # ) \$  
% ' # ; ' 0 8 ( \$ # ' \$ 0 6 + \* < \* + : \$ ' & 6 & \* < \* ) ; \$ = & . & ' 0 1 \$ = \* ) 0 ) 6 \* 0 1 \$ > ( ( \* ( + 0 ) 6 & ? @



!"#\$%&'()\*

!"#\$%&'()\*+,-./0.1\*#\$02\$(&341.\$5#/1\*-6+\$70)-/+\$  
&'8\$(&341.\$(\*-3#\$56&6-.6-/. \$9/6\$;! "#\$()#\*+ 9/6<=



+ , ) - . % 0

! " # \$ % & % ( )

- %\* + , - . / ( ) 0 , , 1 # " 2 ( ) # 1 ( / 3 - 0 , ) 2 % ( + # \* . - + ' 4 5 )
  - ( / 3 - 0 , ) \$ 0 " 0 ( ( 2 / \* ' )
  - ( ' 0 , 6 % \* 7 )
  - . # 2 / ( ' % + ) 8 % # , / \* + /
  - 0 ( ( 0 - , ' )

! " # \$ % & % ( ) 7 / \* . / " 9 & 0 ( / . ) . % ( + " % 2 % \* 0 ' % # \* )

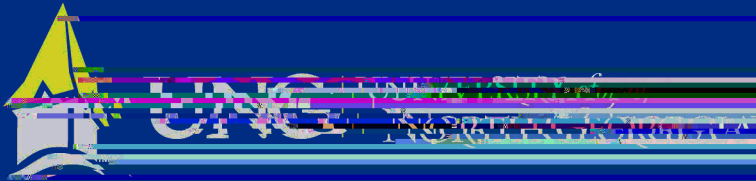
- %\* + , - . / ( ) & - , , : %\* 7 ) 0 \* . ) . % ( + " % 2 % \* 0 ' # " : ) ( / 3 ) ( ' / " / # ' : ; %\* 7 )
- \$ 0 " 0 ( ( 2 / \* ' ) # 1 ) 7 / \* . / " ) \* # \* 9 + # \* 1 # " 2 % \* 7 ) ( ' - . / \* ' ( )

! " # \$ % & % ( ) " / ' 0 , % 0 ' % # \* )



+ , ) - . % 0 1 2 ' ( ) \*

- ! " # \$ % & ' ( & ' ) " # \$ % & " \* + , - , ) . % & " \* / 0 \* 1 ( & \$ # 1 " \* / ) \* ) # 0 0 / 1 / % & " 2 3 \* ) % - / ( # ) \* " + , " \* / " \* / & " % - 0 % - % ) \* 4 / " + \* ( - \* 2 / . / " ) \* , \* ) " # \$ % & " \* ( - \* % . 5 2 ( 3 % % 6 ) \* , 7 / 2 " 3 \* " ( \* 5 , - " / 1 / 5 , " % \* / & \* ( - \* 7 % & % 0 / " \* 0 - ( . \* " + % \* ) 1 + ( ( 2 6 ) \* 5 - ( 8 - , .  
! " # \$ % & ' # \$ ( # ) # ' # \$ \* " # \$ + & , - . + \* / \$ \* " # \$ 0 # ( ( \$ ' # 1 # \* 2 \* 2 & , \$ , # # - # - \$ 3 & ' \$ 4 \$ \$ " & ( \* 2 0 # \$ # , ) 2 ' & , % # , \*
- 9 - ( " % 1 " ) \* ( " + % - ) \* 0 - ( . \* ) % : # , 2 \* + , - , ) . % & " \* ( - \* ; / ( 2 % & 1 % \* / & \* , & \* / & ) " / " # " / ( & 6 ) \* 5 - ( 8 - , . ) \* , & \$ \* , 1 " / ; / " / % )
- 9 - ( + / 7 / " ) \* \$ / ) 1 - / . / & , " / ( & < + , - , ) . % & " \* 7 3 \* ( - \* , 8 , / & ) " \* 0 , 1 # 2 " 3 \* = \* ) " , 0 0



+ , ) - . % 0 1 % 3 . 4 , ( , ) , ' ( 5

•

•

•



! "\$%&' ()\*%+", "#"- , .



! "\$%&' ()\*%+", "#"- , .







/%012\$&3".4-, 514#)&\*%+", "#"- , .

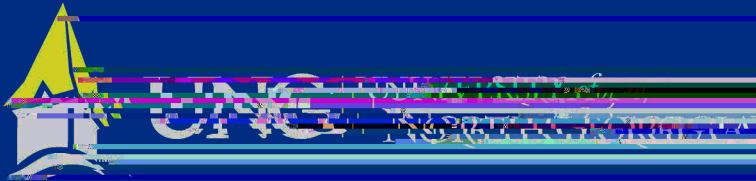
! "\$%&'(#)&\*+,%,+\* -.

•



/%012\$&3".4-, 514#)&\*%+", "#"- , .

> (-\$)\*(-\*, 1"/(&)\*"+, ") + (4\*, \*?&(4/&8\*, &\$\*; (2#&" , -3\*4/22/&8&%) )\*( \*  
%&8, 8%\*/&\*. #"#, 223\*, 8-%%\$'#5 (&\*)%:#, 2\*, 1"/; /"3@A (&)%&"\*1, && ("\*7%\*8, /&%\$\*73\*  
0(-1%B\*/&"/. /\$, "/(&\* (-\*1 (%-1/(&C\*73\*/8& (-/&8\* (-\*, 1"/&8\*/&\*)5/"%\*(0\*(7D%1"/(&)\* (0\*  
, & (" +%-C\* (-\*73\*" , ?/&8\*, \$; , &" , 8%\*(0\*" +%\*/&1, 5, 1/" , "/(&\*(0\*, & (" +%-\*4 +%--%\*" +%\*



/%012\$&3".4-, 514#)&\*%+", "#"- , .

! +%&D+C4"/0\$&01 -U) F&3%1#0\$&"10I "\$#C&#)&30L%&"1\*) F3%-B&



\* 1#6&7%. 8- , 59' , :%.#"; 2#%





/(5,)6),' ("-%7.58' (5.%)' %7.8' 9)5

/+,&''01'2\*\*34+-%,\*3'

•

5))&6!\$)) \*3,+7'''8''%9\$3''9'

•

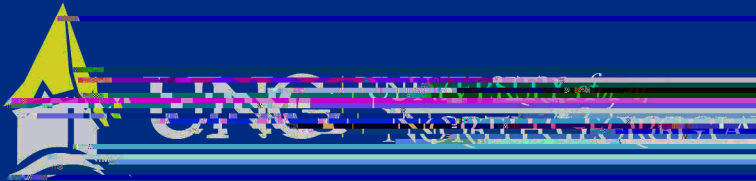
599+: -'+-7''9,+: %, \*39

•

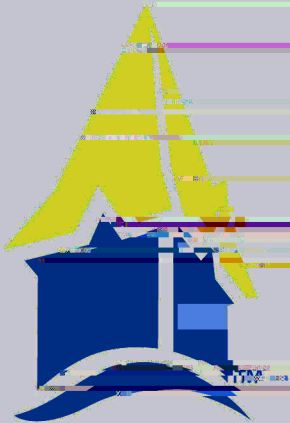


<=-4%..9', :%.#"; 2#" - ,

- XF) /%44&0\$\$&/) 3D\$0"1#4&)\*&4%G. 0\$&3"4/) 1-. /#B&#)&-%#%F 3"1%&E+%#+%F&#+%& /)1-. /#Y
  - 
  - 
  -







UNC  
UNIVERSITY OF  
NORTH CAROLINA

7%>1"=%?%, #.&-+&2, &@5%>12#%&', :%.#" ; 2#" - ,

- A' #<\*( \*#) (\$4#' \$0. &B70+&2\$' &1\*031&2\$\* 8%0'+\*01\$0) . \$%' # 8%+\$





7%>1"=%?%, #.&-+&2, &@5%>12#%&', :%.#" ; 2#" -, A&B -, #C

- 



- 244%44&/F%- "I "\$#C&)\*&4#0#%3%1#4N&E +%#+%F&#+%&0//). 1#&"4&DF) I OI \$%&01 -&/). \$-&F%O\$"4#" /O\$\$C&) // . F
- [ W! &01&044%443%1#&)\*&#+%&D%F4) 1H&/ +OFO/#%F&\ K";%;B&#+%C&- " -&

/-1=4%.&-+&', +-=? 2#" - ,

- =) 1 - . /#&"1#%F0"%E4&)\*&#+%&/) 3D\$0"101#B&#+%&F%4D) 1-%1#B&01-&01C&E"#1%44%4B&"1/\$. -"1J&\*"F4#&F%4D) 1-%F4N&
- T%0"%E&\$0E&%1\*)F/%3%1#&"10%4#"J0#" ) 1&-)/. 3%1#4B&\*"&ODD\$"/OI \$%&01-&

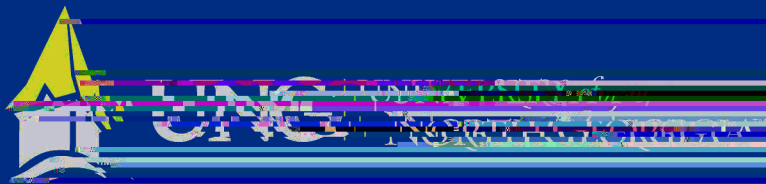


' , : % . # " ; 2 # - ,

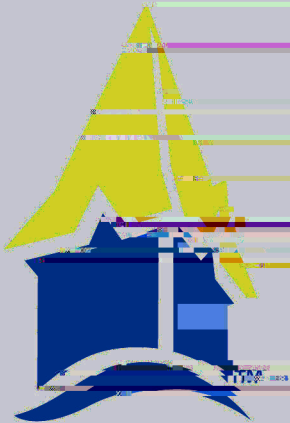
○

○

○



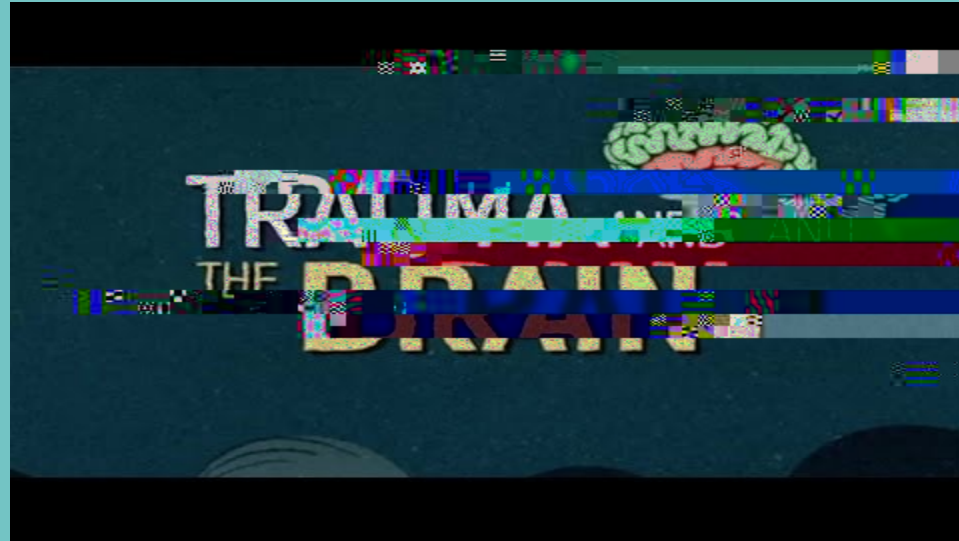
' (+\* .) \$\* 6#



UNC  
UNIVERSITY OF  
NORTH CAROLINA



0,#1\$#(2' .%+3.' .(#34(5\$%#67



0,#1\$#(#34(8+1,(9,#:3

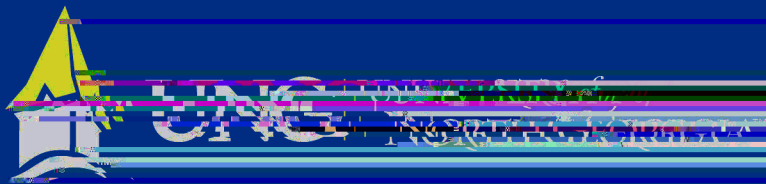




<=%82=%

- ! "#\$%&' ("&)\*+'\$, -. \*+&)/+'\$/01&/2&' ("&, /3"&/2&, /03-, '&/+&)/. \$, \$"1&' (\*'&\*+'&\*.."4"3&'/&(\*#"&5""0&#\$/.\*'"36&\*03&-03"+1'\*03&' ("&."7"0'1&/2&\*08&#\$/.\*'\$/0&
- 







- ! "#\$%&' () \*+\$#, \*&+- . +&\$/ 012&3. (1+&#4&+- . +&\* (55) \*+&"\$6+\$/ &71. /\$, 58
- ! "#\$%&' ()\$#\* +\$), --\$"&. \$%&/, 0)-#)\$\*\$1)\*2\$0\* . . , ' )&' 3\$\*' \$#\* +/\$4\*%#5
- ! "#\$%&'\$#\* +\$67&)\$1\*\$-\$\*' 3\$)\*\$/ , 2\*/)\$)"&15\$
- 89\$#\* +\$6, /, \$1, :+7--#\$7117+-), %;\$6 "#\$%&' ()\$#\* +\$3\*\$)\*\$)" , "\$\*12&7-\$/&3")\$767#5\$
- <\*+\$"7%\$)" , \$0"7' 0, \$)\*\$/ , 2\*/)\$)"&1\$&' 0&%, ' )\$)\*\$)" , \$2\*-&0, ;\$6 "#\$%&' ()\$#\* +\$0"\*\*1, \$)\*\$%\*\$)"7)5\$
- =\*6\$%&'\$)" , \$/ , 12\*' % , ' )\$3, )\$#\* +/\$0-\*)" , 1\$\*99\$6&)"\*+)\$7\$1)/+33-, 5\$
- >&%"\$ , ?1" , \$17#\$@' \*A\$-&B, \$1" , ?" , \$. , 7' )&)\$5\$
- ! 71\$)" , \$0\* . 2-7&' 7' )\$9-&/)&' 3\$6&)"\$)" , \$/ , 12\*' % , ' )\$)"7)\$, C, ' &' 35
- ! "7)\$671\$)" , \$0\* . 2-7&' 7' )\$6, 7/&' 3\$)"7)\$, C, ' &' 35\$
- 89\$#\* +\$%\*' ()\$/ , . . . 4, /\$, C, /#)"&' 3\$)"7)\$"722, ' , %\$)"7)\$' &3");\$"\*6\$7/, \$6, \$

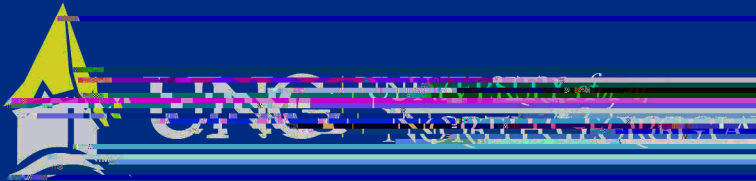
| 1%.#" - , " , ; &B-? 8\$2" , 2 , #A&B- , #C

!)&+;%\$D&\*F0 3%&#+%&A. %4#" ) 14B(A) -1. 8D, 61. 3BC#!D# 61. . %B(4) 9. 4-E"B&(%) 2. 5(%)



H--5&l 1%.#"- , .

- JK"\*) , 3)\*/&" + %\*/&; %)"/8, "/; %\*-%5 (-"" + , ""3 (#\*0%2""\$-#&?\* , &\$\* 4%-%\* 4 (7723@\*A, &\* 3 (#\*%2, 7 (-, "%\* (&" + , "LM
- JN+ %\*/&; %)"/8, "/; %\*-%5 (-"/&\$/1, "%)" + , "" + %\*-%)5 (&\$%&"\*?%5 ""7#3/&8\*3 (# + (" )@\*A, &\*3 (#\*" %22\*. %\* 4 + , ""3 (#\*-%. %. 7%-\* , 7 (#"" + , "LM
- JK\*#&\$%-)" , &\$\*3 (#\*" (2\$\*0"" + , ""3 (#\* + , \$\* , \*2 (" ("\*\$- /&?\* + , ""&/8+ "@K\*" + /&?/"\* . , 3\* 7%\* + %250#2"" (\*8%"" , \*12% , -%-\*5/1"#-%\* (0\* + (4\* . #1+\*3 (#\*\$- , &?\* , &\$\* + (4\*3 (#\*0%2""/"\* , 00%1"%\$\*3 (#@\*A, &\*3 (#\*" %22\*. %\* , 7 (#"" + , "LM
- JK\* 4 , &" ("\*\$&\$%-)" , &\$\*" + %\*\$3& , . /1\*7%" 4%%&\*3 (#\* , &\$\*3 (#-\*5, -"&%-\*7%""%-@
- JP(#\* . %&"/ (&" + , ""3 (#\*-0- /%&\$\*) , /\$\*3 (#\*1 (#2\$\*)" , 3\* 4/" + \* + %-\* , 0"%-\*3 (#-\*5, -"&%-\* + /" \*3 (#@P(#\* ) , /\$\*" + , ""3 (#\*\$%1/\$%\$\*" (\*8 (\* + ( . %\* 4/" + \*3 (#-\*5, -"&%-\*@K\* , . \* + (5/&8\* 3 (#\*1 (#2\$\*" %22\*. %\* . (-%\* , 7 (#"" + , ""\$%1/)/ (&@







- $F \& (\% \#) . \& ) + \$ . \& ( \& ' < \& ( \$ + , \& \$ ( 0 \& \& \$ 1 \& < \& 1 \$ \# 4 \$ ' \& ( \% \& 6 + \$ 0 ( \$ G \# 8 \% 10^* ) 0 ) +$
- $= 0^* ' ) \& ( ( \$ 0 ) . \$ \& B 7^* + : \$ 0 ' \& \$ H \& :$
- $" \# + \$ 0 \$ 6 \# 7 ' + \$ \# 4 \$ 10 D 2 \$ ! ; 7^* 1 + @ \$ D^* 11 \$ ) \# + 2 \$ 0 ) . \$ 8 0 : \$ ) \# + \$ 3 \& \$ . \& + \& ' 8^* ) \& .$
- $I^* H \& 1 : \$ 7 ) . \& ' \$ 0 \$ ( * 8^* 10 ' \$ 0 8 \# 7 ) + \$ \# 4 \$ ( + ' \& ( ( \$ 0 ( \$ G \# 8 \% 10^* ) 0 ) +$
- $J ) \$ ( \# 8 \& \$ ( * + 7 0 + * \# ) ( 2 \$ + , \& \$ 6 \# 8 \% 10^* ) + \$ 8 0 : \$ 3 \& \$ 0 \$ ( 7 ' \% ' * ( \& \$ + \# \$ F \& (\% \#) . \& ) +$

' , #%= : "%J" , ; &K "# , % . . % .

- ! "#\$%&'()\*+,-.#)^(+ /)&0+. &\$' /&\*+&%)1&(/&23%/4&#+,&5##\*( /6&#%47&8(\* /#))9&
- : )1&\*7#&8(\* /#)&(&7#&+ "&)7#&7%)&)\$+1# /&8(\*7&8%/0+ /#&%; +. \* &\*7#&5% \*\* # "&+ "&(/3#)^(6%\*(+ /9
- < /'0&7%"#&8(\*7&\*7#&8(\* /#))&\*7#&2\*%(')&+ ,&\*7#&(/3#)^(6%\*(+ /&%/2&\*7#&4+5\$'(/% / \* &\*7%\* &%"#&/##2#2&\*+&4+ /2. 4\* &\*7#&(/ \* # "3(#89
- : , \* # "&#=\$' % (/ /6&\*7#&"#%) + /& , + "&\*7#&(/ \* # "3(#8&%)1&\*7#&8(\* /#)&(&7#&+ "&)7#& , ##')&\*7%\* &0+ . &)7+ . '2&)\$#%1&8(\*7&8%/0+ /#&#')#9
- ?#- . #)^&2+4. 5# / \* )&+ "&\*7#&"#3(2# /4#&\*7%\* &5%0&; #&7# '\$ , . '&(/&0+ . "&(/3#)^(6%\*(+ /9&
- @=\$' % (/&\*+&\*7#&8(\* /#))&870&4+ / , (2# / \* (% (\*0&)&(5\$+ "% / \* &%/2&\*7#&\$" (3%40&+ ,&\*7+ )#&(/3+ '3#2&)7+ . '2&; #&\$" + \* #4\* #29&&
- @=\$' % (/&\*7%\* &"#\*% '(%\*(+ /&)&\$" +7( ; (\*#2&; + \*7&6%(/) \* &)+5#+ /#& , + "&\$%""(4(\$%\*( /6&(/&%/&(/3#)^(6%\*(+ /&%/2&6%(/) \* &)+5#+ /#& , + "& , (' /6 %& 4+5\$' % (/ \* 9
- @=\$' % (/&\*+&\*7#&"#)\$+ /2# / \* &\*7%\* &4+5\$' % (/ \* &7%)&; ## /& , ('#2&%/2&)#\* & , + ""\*7&\*7#&\$" +4#))&(/3+ '3#2&(/&%/&(/3#)^(6%\*(+ /&+ ,&\*7())&/%\* . "#
- ! "+3(2#&\*7#&"#)\$+ /2# / \* &8(\*7&8&4+\$0&+ ,&\*7#&\$" + '(40
- @=\$' % (/&\*7%\* &\*7#&(/3#)^(6%\*(+ "A)&\*%)1&)&(5\$'0&\*+&6%\*7#"&\*7#& , %4\*)
- B#)4" ( ; #&\*7#& ; %) ()& , + "&\*7#&4+5\$' % (/ \* &%/2&\*7#& ; #7%3(+)"&%"#6#2
  - % /2&; 0&87+5&4+ / , (2# / \* (% (\*0&\$#"5(\*\* /6D
- : )1&%; +. \* &\*7#&)\$#4( , (4)&+ ,&\*7#&4+5\$' % (/ \* &%/2&%" +8&\*7#&"#)\$+ /2# / \* &\*+&"#)\$+ /2&\*+&%/0&+ ,&\*7#&8%"#6%\*(+ /)&(/&\*7#&4+5\$' % (/ \* &



L#M%=&! "8.

- D9\$6 "7)\$, 70"\$2, /1\*' \$17#1E\$F1, \$G+\*), 1\$)\*\$1&3' &9#)\$" , \$, :70)\$6\*/%1\$12\*B, \$4#)\$" , \$

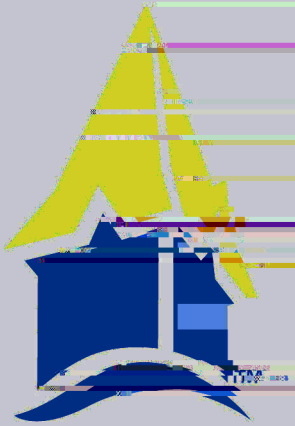


L#M%=&! "8.

- <#OC&"1&/) 1#0/#&E"#+&I )#+&#+%&/) 3D\$0"101#&01 -&#+%&F%4D) 1-%1#&#+F). J+). #&#+%&DF) /%44
  - K0"" +%-%\*/)\*8 (/&8"" (\*7%\*, \*\$%2, 3\*/&"" +%\*/&;%)"/8, "/(&B\*2%"" +%\*5, -"/%)\*?&(4
  - A2%, -23\*\$ (1#. %&"" +%\*-%, )(&)\*0(-\*, &3\*\$%2, 3
- <#OC&"1&/) 1#0/#&E"#+&\$/0\$&\$0E&%1\*)F/%3%1#B&""&ODD\$"/OI \$%
- 

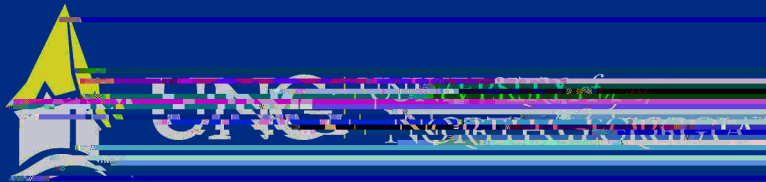


7.  $\int_{-1}^1 (x^2 + 1) dx$



UNC  
UNIVERSITY OF  
NORTH CAROLINA

! M%&'? 8-=#2, 4%&-+&2&H- -5&7%8-=#





N2.".&-+&H--5&7%8-=#

5; <. 3 30FC&)\*&2\$\$%J0#" ) 14

8; XF)/%- . FO\$a"4#)FC

e; 2DD\$"/OI \$%&X)\$"/"%4UXF)/%- . F%4

f; '1\*)F30#" ) 1&=) 14"-%F%-

g; , 0"-%1#"0FC&<#01 -OF-

?; : 1-"4D. #%-&Q0/#4

7; Q0/#. 0\$&Q"1-"1J4

@; 210\$C4"4&01 -&=) 1/\$. 4") 1





! " # \$ % & ' ( ) \* + , - . / + %

ZT%0"%E&F%D)F#&#%3D\$0#%&01-&E0\$L&#+F).J+&%0/+&/)3D)1%1#&01-&#+%&  
E+CUJ)0\$&)\*&%0/+&/)3D)1%1#&"1&\$0E;&&

/1??2=6&-+&@\$%; 2#" - , .

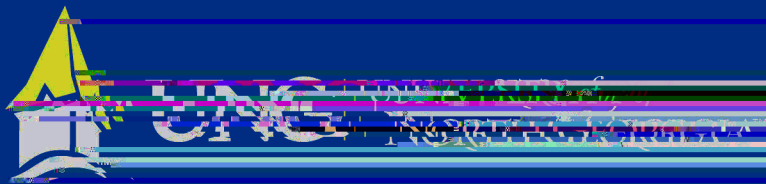
- h%&/\$%OF



$\leq -4\%51=2\&0".\#-=6$







Q, 5".81#%5&E24#.

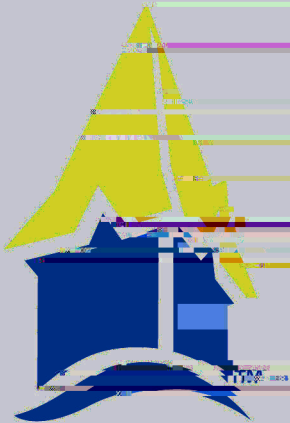


0:%.(;+,( \* ,:7:3<(=34:..%17' 4(>#67.

- \_\_\_\_\_;&
- '\*&/011)#&. 4%&A. )#%4B&3. 4#&I %&0%FC&DF%/"4%&"1&C). F&4. 3 30#" ) 1
- , G03D\$%4Y
  - 
  - 
  -



9\*#-15+\$- (&- ;&<\$#: 5+\* 4&="%+#



UNC  
UNIVERSITY  
NORTH CAROLINA



?:..%17' 4(>#67.

- \_\_)&D)"1#&I C&D)"1#&\*)F&- "4D. #%-&L%C&\*O/#4Y

- 

- 

- 

- 

- 

- 

- '\*&C). &+00%&/)FF) I )FO#"1J&%0"- %1/%B&O##O/+&O4&O1&%G+"I "#

- 



?:..%17' 4(>#67.@(A+37B

- '4&#+%F%Y

- 

- 

- 

- =) 14"-%FY

- 

- 



# C66+137:3<( ;+ , (A, ' 4:D:&:7E(:3(2' %+, 7

- > +/1+\*, 11(#&"\* . , ?%)\*. ()"\*)%&)%L\*
- A(#2\$\*" + %\*/&\$/; /\$#, 2)\*+, ;%\*)%%&\* (-\*+%, -\$\*4+, ""\*"+%3\*12, /. %\$L
- !+ (#2\$\*" + %\*/&\$/; /\$#, 2)\*+, ;%\*)%%&\* (-\*+%, -\$\*. (-%\*" +, &\*" + %3\*12, /. %\$L
- X(%)\* (&%\*, 11(#&"\* (00%-\*-%, ) (&%\$\*%: -6(%(+ )1(, )7. 5(, )-1. 8())1. 6(( )-1(, )-1. (\* (0



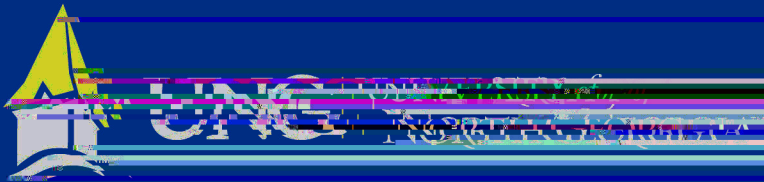
C66+137:3<( ; + , (A, ' 4:D:&:7E(:3(2' %+,7

- Q0/#)F4&#) &/) 14" -%F&"1&044%44"1J&/F%- "I "\$"#CY
  - h%+00")F&) \*&#+%&DOF#" %4UE"#1%44&
  - 
  - X)#%1#"0\$&I "04&)F&"1#%F%4#&"1&) . #/) 3%&
  - 
  - b%#0"\$
  - 
  - =)FF) I )F0#"1J&\*0/#4&
  - 
  -



>#671#&(>:34:3<.

- \_F). D&\*0/#. 0\$&\*1 - "1J4&I C&O\$\$%JO#" ) 1&)F&"44. %Y
- 



# C3#&E... (F(A+36&1...+3

- [ W! &\* ) F&# + ) 4%&E + ) &OF%& ) 1\$C&\*O/#&\* "1 - %F4
- <#OF#&# ) &/ ) 11%/#&# + %&- ) #4B&O1 - &D. #&"#&O\$\$\$&# ) J%# + %F
- c) ) L"1 J&\* ) F&D) \$" / C&O" ) \$O#" ) 14B& [ W! &\$OE
- 210\$Cj%&\*O/#. O\$&\* "1 - "1 J4&. 1 - %F&# + %&ODD\$ / OI \$%&D) \$" / CUD) \$" / "%4
- \_\_ ) &O\$\$\$%JO#" ) 1&I C&O\$\$\$%JO#" ) 1
- , GD\$O"1&C) . F&F%O4) 1"1 J&K<aWV&kW: T&VWTI M



! " # \$ % & ' ( ) \* + , - & ' + " . ( ! / 0 # & ( + 1 ( 2 ' & 3 - 4 0

- ? ' / % / " ) % ( % ' 6 6 + & , = " ( \$ 1 @
- A ' % ( < \$ % " = ( ) % ) + 2 2 ' - ( % ' & ) \$ & ( % ' ) % 1 \$ 4 , & \$ 1 % & % ( < \$ % 2 ' 7 , = \* @  
! " # \$ % ! & ' # ! \$ " ( ) \* ( ! " & ' + ' & ! # ' # ! \$ " ,
- 5 ' & ) + 6 2 ( , ' & % + ( 4 \* . # 1 + \* \$ / \$ \* " + % \* \$ - / & ? B \* \$ ( \* \$ - # 8 ) B \* " / . / & 8 B \* % " 1 @
- 5 ' & ) = , ' + ) % 7 2 , 1 ? \* ( # " B \* 5 , ) ) \* ( # " Z
- 5 ' ' - 1 , & " ( , ' & % & % % \$ \* , ) ) / ) " , & 1 % \* 4 , ? ? / & 8 B \* " , ? / & 8 \* 1 2 ( " + % ) \* ( 0 0 B \* \$ / , 2 / & 8 \* 5 + ( & % Z
- 5 ' 6 6 + & , = " ( , ' & ) %



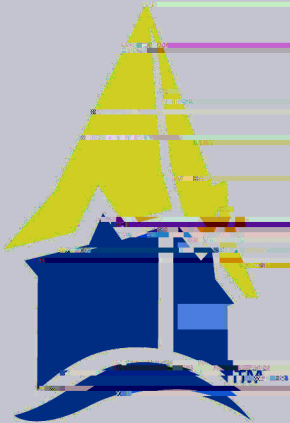
# C3#&E... (F(A+36&1..:+3

- T%D%0#&#+%&0\$\$%J0#" ) 1&\*F) 3&#+%&0\$\$%J0#" ) 1&4%/#" ) 1
- '1/\$. -%&-%"1"#") 14
- d0L%&"1 -"1J4&0%FC&4D%/""\*/
- 210\$C4"4&3. 4#&I F"1J&"1&\*0/#. 0\$&"1 -"1J4
- '\*&C). &\*F03%&"#&. D&E%\$\$B&"#&"4&#+%1&%04"%F&#) &- ) &#+%&010\$C4"4
- '#&/01&I %&+%\$D\* . \$&#) &1. 3 I %F&\*0/#4
- 
- 





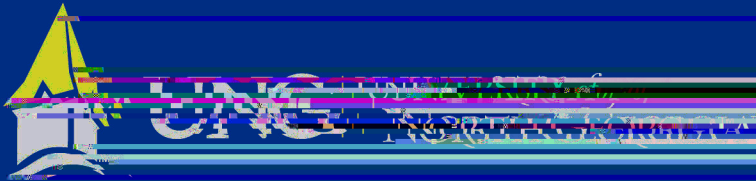
! " # \$ % & ' % ( ) \* + , ' \$ - . ) / , - + 0 ( ) , - " ) \* + , ' \$ - . )  
12, \$'



UNC  
UNIVERSITY  
NORTH CAROLINA

# G:H' (I ' # , :3<

- N+%\* [/&, 2\*V#2%\*. , &\$, "%)\*, \*7/0#-1, "%\$\*5-(1%))\*
- [/&, 2\*\$%"%-. /&, "/(&)\*(0\*-%)5 (&)/7/2/"3\*, &\$\*), &1"/(&)\*, -%\*. , \$%\*73\*\$%1/)/(&' . , ?%-)\*\*'
  - LMHHDN\$4, \$)" , \$N&)-, \$80\$L \*\* /%&' 7)\* /\$\* /\$711&3' , %&&' C, 1)&37)\* /\$
  - 8' 9\* / . 7-\$ / , 1\*-+)&\* ' \$' \*)\$2, / . &11&4-, \$9\* /\$1)+%, ' )\$7--, 37)&\* ' 1\$737&' 1)\$7' \$, . 2-\*# , , \$
- \%4\*\$#%\*5-(1%))\*1 (&)/\$%- , "/(&)
  - L/\*11\$, :7. &' 7)&\* ' \$4#\$7\$27/)#(1\$7%C&1\* /\$
  - P, -, C7' 0#\$%, ), / . &' 7)&\* ' 1\$
- k&)" / "#"/(&)\*. #)"\*5-(; /\$%\*, &\*, \$; /) (-\*/0\*, \*5, -"3\*\$ (%)\*& ("\*+, ; %\* (&%\*



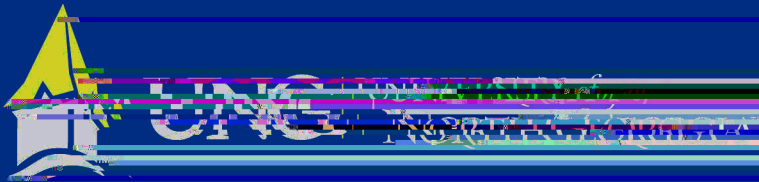
56'70" , 0(8 9" , -\$3#4+/% #" 7(5: , -\$3#4+/%

- ! +%&l . F-%1&) \*&DF) ) \*&2 [ b&l . F-%1&) \*&JO#+%F"1J&%0"-%1/%&"4&) 1&#+%&"14##. #") 1&
- XOF#"4&OF%&D%F 3"##%-&#) &DF%4%1#&%0"-%1/%&01 -&/0\$\$&E"#1%44%4&#) &0-001/%&#+%"F&/\$0" 34&01 -&-%\*%14%4&
  - 30C&"1/\$. -%&\*0/#&) F&%GD%F#&E"#1%44%4&
  - X%F 3"##%-&#) &%4#0I \$"4+&#+%&E%"J+&#J"0%1&#) &/%F#0"1&#CD%4&) \*&%0"-%1/%&
  - /+0FO/#%F&E"#1%44%4&\ /F%- "I "\$#C&O;&/+0FO/#%F



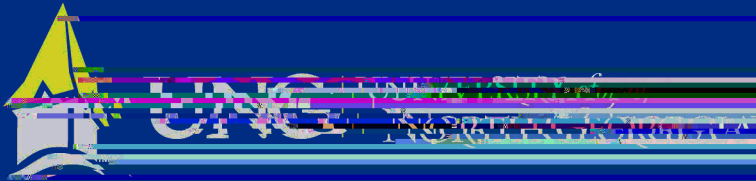
# 2' &' H#37(#34(?:, ' 67&E(2' &#7' 4

- , 0" - %1 / %&"4&/) 14" - %F% - &F%\$%001#&"\* &"4&P+04&# + %&#%1 - %1 / C&#) &30L%&O&\*0 / #& 3) F%&) F&\$%44&DF) I OI \$%&# + 01&"#&E) . \$ - &I %&E"# + ) . #&# + %&%0" - %1 / %N&O1 - & # + %&\*0 / #&"4&) \* &/) 14%A. %1 / %&"1& - %&%F 3"1"1J&# + %&O / #") 1 ; &Q% - ; &T ; &, 0" - ; & f95
- , 0" - %1 / %&"4&/) 14" - %F% - & - "F% / # \$ C & F% \$ O # % - &"\* &"#&"4&%0" - %1 / %&# + O#&"4& - "F% / # \$ C & F% \$ O # % - &#) &# + %&O\$\$\$%JO#" ) 14&"1&# + %&\*) F 30\$&/) 3D\$O"1# ; &&! + "4&"1 / \$. - %4& %0" - %1 / %&# + O#&# + %&"14#"#. #" ) 1& - ) %4&1 ) #&"1#%1 - &#) &F%\$C&. D) 1&"1& F%0 / + "1J&O& - %&%F 3"10#" ) 1&F%JOF - "1J&F%4D) 14" I "\$"#CB&"1 / \$. - "1J& "1 / . \$DO#) FC O1 - &%G / . \$DO#) FC&%0" - %1 / %B&E + %&# + %F&) I #O"1% - &\*F) 3&O& DOF#C&) F&) # + %F&4) . F / % ; &@g&Q% - ; &T%J ; &e9fe@&kd0C&56B&8989M



# C4\$:7(+, (? ' 3EJ(2' & ' H#36E

- T%\$%001#&"1\*)F30#" ) 1&F%\$0#%4&#) &#+%&"1/" -%1#&0#&"44. %&
- T%\$%001#&"1\*)F30#" ) 1&DF)0" -%4&4. "\*" /"%1#&00\$. %&"1&30L"1J&#+%&)0%FO\$\$&-%#%F3"10#" ) 1
- m. %4#" ) 14&01 -&"1\*)F30#" ) 1&F%JOF -"1J&#+%&=) 3D\$0"101#H4&4%G. 0\$&+"4#)FC& )F&4%G. 0\$&DF% -"4D)4#" ) 1&. 1\$%44&#) &DF)0%&
- 
- 



C4\$:7(+,(?' 3EJ(

•

•

•





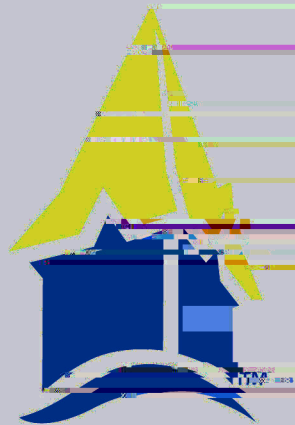
\* + , - . / + % ( K | ' # , : 3 < ( M # 3 ' & ( ? ' 6 : . . : + 3

ZV) FL&#+F) . J+&C) . F&D0/L%#&"1/\$. -"1J&C) . F&[ W'U[ W2B&"10%4#"JO#"0%&  
F%D) F#B&F%0"%E&)\*&#%4#"3) 1"%4&01 -&E"#1%44&4#0#%3%1#4B&01 -&  
A. %4#" ) 14U014E%F4&) 1&/F) 44;&&V +0#&- ) %4&# + %&DF%D) 1 - %F01 / %&) \*&# + %&  
%0" - %1 / %&4. DD) F#`

^ k) . &3. 4#&I %&0I \$%&#) &OF#" / . \$0#%&C) . F&- % / "4") 1&04&#) &%0 / + &"1 - "0" - . 0\$&  
/ + OFJ%B&E "# + &FO#" ) 10\$%&



8: : \* " 1



UNC  
UNIVERSITY OF  
NORTH CAROLINA

9+7/(M# ,7:' . (N(2:</7(7+(C%%' #&

2\*#%F&#+%&\* "1 -"1J&01 -&401/#") 14&K"\*&01CM&OF%&-%#%F 3"1%-&I C&#+%&X01%\$B&  
#+%C&OF%&-%\$"0%F%-B&E"#+&FO#") 10\$%&&#) &#+%&DOF#" %4&01 -&#+%"F&O-0"4) F4&  
#+F) . J+&#+%&! "#\$%&' (&=) )F-"10#)F;

√"#+"1&\* "0%&I . 4"1%44&-0C4B&I ) #+&DOF#" %4&+00%&O&F" J+##) &ODD%0\$&#+%&  
-%#%F 3"10#") 1&01-U) F&401/#") 1&"1&EF#"1J; &&! +%&ODD%0\$&E"\$&&I %&+%OF -&I C&  
#+%&XF%4" -%1#4H&-%4"J1%%B&bF;&2\$C4) 1&X0. \$;

O,+134.(K P+7(?' (P+H+(2' H:' Q

N" , \$M22, 7-\$: +1)\$4, \$2-, 7%\$\*' , \$\*9\$)" , \$9\*--\*6&' 3\$/ , 71\*' 1;\$6&)"\$1+22\*/)&' 3\$/7)&\*' 7-, 0

RE )\*\$0\*' 1&%, /\$' , 6\$&' 9\*/. 7)&\*' ;\$1+99&0&, ' )\$)\*\$7-), /\$)" , \$%, 0&1&\*' ;\$\*/\$\*)" , /\$/, -, C7' )\$970)1\$