

!

Ab ac

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

!

TITLE N da e ad a dede a e d e e a e ca e a
c a a e d

AUTHORS /)*0#,&!)12343531!5)+6%!!73831!89: #, . %!73; 3!4,0#*') +&0!<3"3! =!; %\$\$\$c%!>353!

!

I d c b e a e e ?!!

8' '+&%0#!%\$\$\$#: #*0!@9%* ,*-!%* . !, : @9#: #*0%0,)*!%&#!#\$\$\$#*0,%9!@%&0\$!)A!*+&\$,*-!'%!B+&,*-!
@&#)@#&%0,C#!@(%\$#1!%\$\$\$#0(\$!D,)@E' (\$)')%9F\$@,&0+%9!,\$!'&+' ,%9!0)!0(!*##. \$!)A!@%0,*0\$1!,*!
% . .,0,)*!0)! ,*\$0&+!0!%D)+0!\$+&-,'%9!@&'# . +&#!%* . !@&#@%&%0,)*3!G)H#C#&1!A#H!\$0+ . ,#\$! (%C#!
@&)@)\$# . !*+&\$,*-! . ,%-*)\$#\$!	%0# . !0)!0(\$!@(%\$#3! I (#!@+&@)\$#!)A!0(\$!\$0+ . E!H%\$!0)!%*9E6#!
+&\$,-! . ,%-*)\$#\$!,*!(\$@,0%9,6# . !% . +90!%* . !#9. #&9E!@%0,*0\$! . +&,*-!@&#)@#&%0,C#!@(%\$#1!D%\$# . !
)*)J8JB8!K*0#&*%0,)*%9! I%L)*): EM %* . !0)!'): @%&#!0(#,&! *+&\$,*-! . ,%-*)\$#\$!%* . ! . #A,* ,*-!
'(%&% '0#&,\$0,'\$3!!

!

Me d

I (\$,\$!,\$!%!'&)\$F\$# '0,)*%9!#L@9)&%0)&E!%* . !N+%*0,0%0,C#!\$0+ . E3!K0!H%\$! . #C#9)@# . !,*!%!' -#*#	!
\$+&-,'%9!H%& . !H,0(!OP!% . +90!%* . !#9. #&9E!@%0,*0\$! . +&,*-!@&#)@#&%0,C#!@(%\$#1!D#0H##*!/'&&'(!%* . !
8+-\$0!)A!QRPS3!50%0,\$0,'%9! . #'\$&,@,C#!%* . !,*A#&#*0,%9! . %0%!*%9E\$,\$!H%\$! . #C#9)@# . 3!!

!

Re a d d c

; &): !0(!0)0%9!0(#&#!H#&#!TQ!UVQ3SWX!% . +90!%* . !PY!UTS3TWX!#9. #&9E!@%0,*0\$3!Z*!0(#: 1! [R!
+&\$,-! . ,%-*)\$#\$!H#&#! . ,#*0,A,#. !H,0(!PO!(-,-(0\$! . \$0&D+0# . !,*!0! .): %,*\$3!K*!0(!% . +90!
-&)+@!0(#!:%!)&!*+&\$,*-! . ,%-*)\$#\$!H#&#?!%*L,#0E1!QV!U[P3TwxMA#%&!Pv!UORwxM&,\$]!A)&!,*A# '0,)*1!
P^!U^T3[Wx!%* . !&,\$]!A)&! . #9%E# . !\$+&-,'%9!&#')C#&E1!PQ!UTS3OWX3!__ (9#!,*!0(!#!#9. #&9E!-&)+@!H#&#?!
%*L,#0E1!PT!UV[3^WxM&,\$]!A)&!,*A# '0,)*1!PQ!UVT3QVwxM ,: @%,&# . !'): A)&0!PP!UOS3YWX!%* . !&,\$]!A)&!
 . #9%E# . !\$+&-,'%9!&#')C#&E1!PR!UOQ3VWX3!4)0(!-&)+@\$! @&# \$#*0# . ! . ,AA#&#*'#\$!H,0(! \$0%0,\$0,'%9!
\$,-* ,A,'%*' #3!!

!

I ac e d c e

I (#\$#!A,* ,*-!\$(\$)H!	#C#*0!0E@#\$!)A!*+&\$,*-! . ,%-*)\$#\$! . +&,*-!@&#)@#&%0,C#!'%&#!,*!D)0(!
-&)+@\$3! I (#&#A)&#!%'+&%0#!*+&\$,*-!'%&#!: %E!&# . +#!' (%*'#\$!)A!'): @9,'%0,)*!%* . !(%6%& . \$1!
&# . +,'*-!')\$0\$!%* . !9#*-0(!)A!(\$@,0%9!\$0\$E3! I (\$,\$!\$0+ . E! : %E!')*0&D+0#!0)! ,: @&)C#!N+%9,0E!)A!
+&\$,-!'%&#!#&#',%99E! . +&,*-!@&#)@#&%0,C#!@(%\$#3!!

Re e ce !

P3 G#&. : %*1!I3!G3! =!`%: ,0\$+&+1!53!UQRP^X3!Ua. \$3X3!J8JB8!K*0#&*%0,)*%9!*+&\$,*-! . ,%-*)\$#\$?!
 . #A,* ,0,)*\$!%* . !'9%\$,\$A,'%0,)*1!QRPOFQRPS3!ZLA)& . ?!__ ,9#EF49%']H#993!

Q3

!