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;"I',$739&-$;(&/-*+*-.("C(#2$/*C*/(%*/,"F*&9(2&-0"7$'#J(&';(-0$(+&,*"3#(F*"%&,L$,#(*'+"9+*'7(@=8J(!=8J(
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F*"%&,L$,#(C",(-0$(;*&7'"#*#("C(2$,*";"'-*-*#(*'(-0$(2,$+$'-*"'(&';(%&'&7$%$'-("C(0.2$,-$'#*"'A(

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F$-I$$'(-0$(+$'-,&9(-$7%$'-&9(&,$&(Wd?8X(&';('3/9$3#(&//3%F$'#(W=8/XA(K0*9$(-0*#(-,$&-%$'-(0&#(F$$'(
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'$7&-*+$(/"'-,"9(&,$(&9#"(3#$;A()#*'7(I-(I",%#J(I$(I*99(2*/L(Y5(eH(I",%#("'-"(&('$I(29&-$(&';(C$$;(-0$%(
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!N$";<1)8/0=3/0+<"+,"A>3<=)8";<"-88) ' (4C"3<6"]&<./0+<"+,"/>)"9)*+P08+ ' 34"; ' ?+*/"53.>0<)*C"0<":& ' 3<"
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!Q$"9*)60./0<="5 3*H)*8"+,"2)1)*)"AVJ;DK!X"G>*+&=>"G*3<8.*0?/+ ' 0.8"-<34C808(
^$CC,$.(B9&'/.<!(],$--(6*/L$--A!((

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-0,"370(C$/$#J(3,*'$J(",(F*-$#A(B3,,$'-9.J(-0$,$(&,$('"(L'"I'(-,$&-%$'-#(C",(-0$(;*#$&#$J(&';(*-(,$%&*'#(&(
-0,$&-(&,"3';(-0$(79"F$A(>&'-&+*,3#$#(-&,7$-(03%&'($';"-0$9*&9(-*##3$(F.(F*';*'7(-"(*'-$7,*'(F$-&RYJ(
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,$29*/&-$(I*-0"3-(/&3#*'7(/.-"2&-0*/(CC/-#(",(&2"2-"#*#(*'(-0$*,(0"#-A(G'#-$&;J(0"#-(*%%3'$(/$99#(&,$(
,$/,3*-$;(&';(&--&/L(-0$(-*##3$J(/&3#*'7(*'-$,/$993&,(_3'/-*"'#(-"(F,$&L(;"I'A(?0*#(/&3#$#($;$%&(*'(-0$(
-*##3$(&';(-0$(#.%2-"%#("C(0&'-&+*,&9(;*#$&#$#J(*'/93;*'7(0$%",,0&7*/(C$+$,(&';(;$&-0A(K$(0"2$(-"(
3'/"+$,(7$'$-*/(2&-0I&.#(-0&-(&,$(&##"/*&-$;(I*-0(*%%3'$(,$/,3*-%$'-(*'(0&'-&+*,3#(*'C$/-*"'(*'(-0$(
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;*CC$,$'-*&9($:2,$##*"'("//3,#(F.(/$99(-.2$(&';(#&%29$(-.2$(W*'(+*+"(",(*'(+*-,"X(&';(#$$(0"I(-0$(*%%3'$(
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/$99(&';(+*,3#(-.2$J(&#(I$99(&#(&'.(2"-$'-*&9(-0$,&2*$#J(#-*99('$$;(-"(F$(+&9*;&-$;(*'(+*-,"A(?0*#(#-3;.(%&.(
2,"+$(-"(F$(3#$C39(-"(-0"#$(#$$L*'7(-"(3#$($:*#-*'7(%$;*/&-*"'#(-"(-,$&-(0&'-&+*,3#(*'C$/-*"'J(F3-(-0$(#-3;.(
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'(;$-$,%'*'7(7$'$($:2,$##*" '(*'($3L&,."-*/(/$99#A(M3,-0$,J(2"#-R-,&'#9&-*" '&9(%";*C*/&-*" '#(W",(6?E#X(
0$92(%";39&-$(7$'$($:2,$##*" '(F.(&/-*'7(&#(&'(*'-$,%$;*&-$(-"("-0$,(C&/-",#A(?0$($:-$'-(-"(I 0*/0(6?E#(
;*,$/-9.(&CC$/-('3/9$"#"%$(2"#*-*" '*'7(*#(2"",9.(3';$,#-"";J(0" I $+$,A(1*'/$(7$'$($:2,$##*" '(*#(L' " I '(-"(
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#3*-&F*9*-."C(&(e.#RRvN9'(%3-&-*" '(&#(&(#3F#-*-3-$(C",(0*#-" '$(9.#*'$(&/$-.9&-*" 'A(GC(#3//$##C39J(-0*#(,$#$&,/0(
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-0$(F&/-$,*&(&';(2$,C",%*'7(-0$(/"%2&,&-*+$('3/9$"#"%$(2"#*-*" '*'7(-$#-A(K$i99(2$,C",%(&(1*-$R@*,$/-$;(
E3-&7$'$#*#(6B!(%3-&-*" '(2,"-"/"9(" '(-0$(>YK?(29&#%*;(-"(,$29&/$(-0$(/";" '#(C",(C*+$(-&,7$-(9.#*'$(
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;$%"7,&20*/(2,"C*9$(*'/93;*'7(&7$J(#$:J(,&/$J(*'/"%$(&';(%&,*-&9(#-&-3#("C(",-0";"'-*/(2&-*$'-#(-"(
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W>BXA(G';2';$'-(#&%29$#(-R-$#-(&';(/0*R#h3&,$(-$#-(I$,$(3-*9*'$;(&#(&22,"2,*&-$(-"($+&93&-$(
;$%"7,&20*/(;*CC$,$'/$#("C(-0$(,$#2"';$'-#(I0"(0&;(*';*/&-$;(I0-0,(-0$.(3#$;(",(;*;('"-(3#$(
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&/h3*,$;(*%%3'*-.(/"%2&,$#(C&+",&F9.(I*-0(-0$(*%%3'*-.(&/h3*,$;(C"99"I*'7(+&//*'&-*"'A(?0$,$C",$J(-"(
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F.(#3,+$.(*'h3*,*'7(&C-$,(*'C",%&-*"'(,$7&,;*'7(2,*",(BDdG@(*'C$/-*"'J(+&//*'&-*"'(#-&-3#J(&';(F&#*/(
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#3,+$.(C",%&-A(?0$(#3,+$.#(I*99(F$(/"';3/-$;(*'(23F9*/(#$--*'7#(*'(%39-*29$(/"'3'-*$#(*')-&0J(F"-0(+*,-3&99.(
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UV5R455(2&,-*/*2&'-#(&';(h3$#-*"'#(I*99(F$(+&9*;&-$;(-"(&##$##(/"0$,$'/.A(((8C-$,(&/h3*#*-*"'J(;&-&(I*99(F$(
&'&9.'$;(3#*'7(9"7*#-*/(,$7,$##*"'(-"(&//"3'-(C",(/"+&,*&-$#A(D;;#(,&-*"#("C(*'C$/-*"'(,&-$#(I*99(F$(/&9/39&-$;(
F.(3#*'7(*';*+*;3&9#(-0&-(0&;('"(2,$+*"3#(*'C$/-*"'(",(BDdG@RUm(+&//*'&-*"'(&#(F&#$9*'$A(8(#$/"';(9"7*#-*/(
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+&//*'&-$;(*';*+*;3&9#(&#(F&#$9*'$A(G'C$/-*"'#(;3,*'7(-0$(;$9-&R;"%*'&'-(2$,*";(W^3'$(-0,"370(="+$%F$,(
454UX(I*99(F$(&'&9.'$;(#$2&,&-$9.(C,"%(*'C$/-*"'#(-0&-("//3,,$;(;3,*'7(-0$(D%*/,"'R;"%*'&'-(2$,*";(
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/39-3,$A(1-3;$'-#(0&+$(-&L$'(&(2,$(#3,+$.(&';(I*99(-&L$(&(2"#-(#3,+$.J(*'/93;*'7(h3$#-*"'#(,$7&,;*'7(-0$*,(
;$%"7,&20*/(*'C",%&-*"'J(#$'#$("C(F$9"'7*'7'$##(&-(-0$(3'*+$,#*-.J(#"/*&9(&':*$-.J(*'-,"+$,#*"'J(&';(-0$*,(
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;$-$,%*'$(I0*/0(C&/-",#(2,$;*/-(*'/,$&#$#(*'(#-3;$'-(L'"I9$;7$J(#$'#$("C(F$9"'7*'7'$##J(&';(;$#*,$(-"(
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&9*L$(0&+$(F$$'(#3;;$'9.(-0,3#-(*'-"(-0$(,$&99%("C($%$,7$'/.("'9*'$(9$&,'*'7A(?"(F$--$,(3';$,#-&';(0"I(
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%&-,*/39&-*'7(*'-"(20&,%&/.(#/0""9J(&#(I $99(&#(2,"+*;$(,$#"3,/$#(" '/$(&(#-3;$'-(*#($',"99$;A(?0$(2,*%&,.(
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ROSEMAN UNIVERSITY

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