[redacted]

□ □ □ 2020-2021

#$#%&'()'*+$%* &($./(2.('*1%,-3#$.,)*.('$%*-/%-#4%0*251.67%5$5*116%."($#%*.%('% #1(4%."#%'*-9%(0%:$$,$ '<%=(-$51.%#*2"%&'()'*+>$%4#8%&*)#%0('%+('#%/#.*,1#/%,-0('+*.,(-% -/%25''#-.%/#*/1,-#$<%

(-@0#/#'*1%05-/,-)%$('.*81#%86%6(5-)%,-3#$.,)*.('%$.*.5$%2*-%8#%0(5-/%*.A% 5B0#11(4$",&$B%

□ □

( ) 2020

%"..&$ABB444<-$0<)(3B&58$BCDCDB-$0CDECEB-$0CDECE<&/0%

%"..&$ABB444<-$0<)(3B&58$BCDCDB-$0CDDCEB-$0CDDCE<&/0%%

(1 , 201) %%

"..&$ABB444<-$0&(1,26(5.'#*2"<2(+B4&@2(-.#-.B5&1(*/$BCDFGBFFBHIJ4,/#;'()'*+$K0*11FG<&/0%%

// . . / / / .

2020

2 , 2020

A%:%;',-2,&*1%L-3#$.,)*.('%M;LN%+*6%$58+,.%(-16%(-#%=:OPPO%&'(&($*1%&#'%*--5*1%2(+&#.,.,(-<% L-%*//,.,(-7%*%;L%+*6%-(.%&*'.,2,&*.#%,-%+('#%."*-%."'##%=:OPPO%2(+&#.,.,(-$<%;'(&($*1$%."*.%*'#%-(.% '#3,#4#/%M,<#<7%*'#%4,."/'*4-%8#0('#%'#3,#4%('%*'#%'#.5'-#/%4,."(5.%'#3,#4N%/(%-(.%2(5-.%(4*'/%."#%."'##@ 2(+&#.,.,(-%1,+,.<%P1,),8,1,.6%0('%J5-/,-)%M+5$.%+##.%*11%."#%0(11(4,-)%'#Q5,'#+#-.$NA%%

@R(1/%*%/(2.('*1%/#)'##%,-%*%0,#1/%$5&&('.#/%86%HIJ%86%."#%/#*/1,-#%/*.#S%

@T#%#-)*)#/%,-%'#$#*'2"%,-%*-%*'#*%(0%$2,#-2#7%#-),-##',-)7%('%#/52*.,(-%$5&&('.#/%86%HIJS%

@R(1/% *.%1#*$.% *% EDU% .#-5'#@.'*29% M('% .#-5'#@.'*29@#Q5,3*1#-.N% &($,.,(-% *$% *-% *$$,$.*-.% &'(0#$$('% M('% #Q5,3*1#-.%.,.1#NS%

@T#%5-.#-5'#/S%*-/%

@

!" "#$#%&%&!

!

!

@%R(1/%*%&',+*'%*&&(,-.+#-.%,-%*%*com e cience, info ma ion cience, o elec ical o com ing engineering de a men, o in a ela ed field of com a ional cience*%M4"#'#%."#%;L%4(51/%-(+*116%
$58+,.%&'(&($*$%.(%=L I P%&'()'*+$NS%*-/%

@%T#%5-.#-5'#/$*-/%8#%,-%."#%0,'$.%."'##%6#*'$%(0%*%.#-5'#@.'*29%('%'#$#*'2"%$2,#-2#%('%#/52*,(-%&($,.,(-%
M('%#Q5,3*1#-.N<%

@% [-16%(00,2,*1%1#*3#$%(0%*8$#-2#%M0('%,11-#$$7%0*+,167%#.2<N%+*6%8#%$58.'*2.#/%0'(+%."#%.(.*1%.,+#%,-%."#%
&($,.,(-7%*$%2#',0,#/%86%."#%;L]$%/#&*'.+#-.%2"*,'B"#*/%,-%."#%'#Q5,'#/%1#..#'%(0%$5&&('.7%.(%8#%,-215/#/%,-%
."#% I 5&&1#+#-.*'6%Z(25+#-.$%$#2.,(-%(0%."#%&'(&($*1<%

@%L-%*//,.,(-7%*.%."#%.,+#%(0%."#%*4*'/7%."#%;L%+*6%-(.%"*3#%'#2#,3#/%*-6%(."#'%)'*-.$%,-%."#%;L%'(1#%0'(+%
-6%,-$.,.5.,(-%('%*)#-26%M$##%$(1,2,..,(-%0('%#Y2#&.,(-$N<% I #'3,-)%*$%2(@;L7% I #-,('%;#'$(--#17%;($.@/(2.('*1%
J#11(47%('%(."#'%J#11(4%/(#$%-(.%2(5-.%*)*,-$.%.",$%#1,),8,1,.6%'51#<%

*** 201 ,**

, ' ,

, -

. .

%`&%.(%WF_E7DDD%0('%5&%.(%CX%+(-."$<%H(%$5++#'%$*1*'67%2(5'$#%856(5.$7%('%*2*/#+,2%6#*'%$*1*'6%
2($.$%*'#%*11(4#/<%a($.%(0%."#%05-/$%$"(51/%)(%.(%$.5/#-.M$N<%

b,."%."#%)(*1%(0%#-2(5'*),-)%'#$#*'2"%,-/#&#-/#-2#%,++#/,*.#16%5&(-%(8.*,-,-)%(-#]$%0,'$.%
2/#+,2%&($,.,(-%*0.#'%'#2#,&.%(0%."#%;"Z7%."#%Z,'#2.('*.#%0('%=(+&5.#'%*-/%L-0('+*.,(-% I 2,#-2#%*-/%

!

, 2020

- - / - ( ) 1 , 2020 -

; ',-2,&*1%L-3#$.,)*.('%+5$.%8#%*-%5-.#-5'#/7%.#-5'#@.'*29%*$$,$.*-.%('%*$$(2,*.#%&'(0#$$('%*.%*% `<I<%*2*/#+,2%,-$.,.5.,(-%('%*%0511@.,+#%#+&1(6##%*.%*%Z [P%-*.,(-*1%1*8('*.('6<%% !"#%*&&1,2*-.%+5$.%*1$(% "*3#%'#2#,3#/%*% ; "<Z<%4,.",-%."#%&*$.%.#-%6#*'$%MH(%+('#%."*-%.#-%MFDN%6#*'$%2*-%"*3#%&*$$#/%8#.4##-% ."#%6#*'%."#% ; L>$% ; "<Z<% 4*$%*4*'/#/%*-/%."#%6#*'%."*.%."#% J [:%4*$%,$$5#/N<% ☐ . .

(201).

, - . .

- ☐ . %

!6&,2*1%*4*'/%$,V#%4,11%8#%W_ED7DDD%(3#'%0,3#%6#*'$<

[redacted] '$%,-%5-,3#'$,.,#$%*-/%Z [P%-*.,(-*1%1*8('*.(',#$<% !"#% #*'7%$5&&('.$%."#%/#3#1(&+#-.%(0%,-/,3,/5*1%'#$#*'2"% ##'$%*-/%$.,+51*.#$%'#$#*'2"%2*'##'$%,-%."#%/,$2,&1,-#$% =*'##'%O#$#*'2"% ;'()'*+% (&&('.5-,.,#$%#Y,$.%,-%."#% 2,#-.,0,2%=(+&5.,-)%O#$#*'2"%M: I=ONS%LL<%T,(1(),2*1%*-/% PONS%LLL<%)6%I2,#-2#$%MTPIN7%Le<%J5$,(-%P-#')6%I2,#-2#$%MJPINS%e<% ;N7%*-/%eL<%H521#*'% ; "6$,2$%MH ; N<% I&#2,0,2%.(&,2$%*-/%&'()'*+%+*-*)#'$%*'#% '$.%.#-%6#*'$7%*-%*3#'*)#%(0%XD%5-,3#'$,.6%*-/%CC%-*.,(-*1%1*8('*.('6%*4*'/$%"*3#% '%6#*'<%

☐

%"..&$ABB4 4 4</*'&*<+,1B4('9@4,."@5$B0('@5-,3#'$,.,#$B6(5-)@0*251.6@*4*'/%%
"..&$ABB4 4 4<)'*-.$<)(3B4#8B)'*-.$B3,#4@(&&('.5-,.6<".+1f(&&L/gcCDDEh%
%

- -1 -01

201 1 , 201 - (
) 1 , 201

;*'.,2,&*.,(-%,-%."#% i J :%&'()'*+%,$%1,+,.#/%.(%*-6%25''#-.%.#-5'#@.'*29% :$$,$.*-.%('% :$$(2,*.#% ;'(0#$$('$%*-/%.(%.#-5'#/% :$$,$.*-.%('% :$$(2,*.#% ;'(0#$$('$% 4,.",-% ."'##% McN% 6#*'$% (0% ."#,'%.#-5'#% *&&(,-.+#-.%*.%*% `<I<% ,-$.,.5.,(-%(0% ",)"#'%#/52*.,(-%('%#Q5,3*1#-.%*.%*% `<I<% -(-@&'(0,.%$2,#-2#%*-/% .#2"-(1()6%'#$#*'2"%,-$.,.5.,(-$<% ;'(&($*1$%+*6%-(.%8#%0'(+%0('#,)-%(')*-,V*.,(-$<%

P*2"%*4*'/%4,11%,-215/#%*%CX@+(-."%8*$#%&#',(/%M*%+*Y,+5+%(0%WEDD7DDDN%*-/%*%FC@+(-."% (&.,(-%&#',(/%M*%+*Y,+5+%(0%WEDD7DDDN<%

Z:O; :%i(5-)%J*251.6%:4*'/%M i J :N%&'()'*+%*,+$%.(%/#-.,06%*-/%#-)*)#%'$,-)%$.*'$%,-%5-,('% 0*251.6%&($,.,(-$%,-%*2*/#+,*%*-/%#Q5,3*1#-.%&($,.,(-$%*.%-(-@&'(0,.%'#$#*'2"%,-$.,.5.,(-$%*-/%#Y&($#%."#+% .(%Z#&*'.+#-.%(0%Z#0#-$#%MZ(ZN%*-/%H*.,(-*1%I#25',.6%2"*11#-)#$%*-/%-##/$<%L-%&*'.,251*'7%."#%i J :%4,11% &'(3,/#%",)"@,+&*2.%05-/,-)%.(%#%1,.#%'#$#*'2"#'$%#*'16%,-%."#,'%2*'##'$%.(%/#3#1(&%,--(3*.,3#%-#4%'#$#*'2"% /,'#2.,(-$%,-%."#%2(-.#Y.%(0%#-*81,-)%.'*-$0('+*.,3#%Z(Z%2*&*8,1,.,#$<% !"#%1(-)@.#'+%)(*1%(0%."#%&'()'*+%,$% .(%/#3#1(&%."#%-#Y.%)#-#'*.,(-%(0%$2,#-.,$.$%*-/%#-),-##'$%,-%."#%'#$#*'2"%2(++5-,.6%4"(%4,11%0(25$%*%

!

!

!

?Z#$&,.#%8#,-)%+('#%."*-%$,Y%6#*'$%8#6(-/%."#%'#2#,&.%(0%."#,'%;"<Z<%/#)'##$7%,-/,3,/5*1$%4"(%"*3#% ,-.#''5&.#/%."#,'%2*'##'$%0('%'#*$(-$%$52"%*$%+,1,.*'6%$#'3,2#7%0*+,16%1#*3#7%('%$#',(5$%"#*1."%&'(81#+$% +*6%*1$(%8#%#1,),81#<%:%4',..#-%'#Q5#$.%+5$.%8#%+*/#%,-%*/3*-2#<%

%

%%`&%.(%WFCE7DDD%&#'%6#*'%0('%*%&#',(/%(0%5&%.(%."'##%6#*'$%%

A!"#%H#4%MP*'16%=*'##'N%L-3#$.,)*.('%;'()'*+%MHL;N%,-%P*'."%$2,#-2#%,$%/#$,)-#/%.(%$5&&('.%(5.$.*-/,-)%$2,#-.,0,2%'#$#*'2"%*-/%2*'##'%/#3#1(&+#-.%(0%$2,#-.,$.$%*-/%#-),-##'$%*.%."#%#*'16%$.*)#%(0% ."#,'%&'(0#$$,(-*1%2*'##'$<%!"#%&'()'*+%4#12(+#$%,--(3*.,3#%'#$#*'2"%,-,.,*.,3#$%*-/%$##9$%.(%251.,3*.#% /,3#'$#%$2,#-.,0,2%1#*/#'$",&%,-%P*'."%$6$.#+%$2,#-2#<%!"#%P*'."%I2,#-2#%Z,3,$,(-%MP I Z N%&1*2#$%&*'.,251*'% #+&"*$,$%(-%."#%,-3#$.,)*.('$]%*8,1,.6%.(%&'(+(.#%*-/%,-2'#*$#%."#%5$#%(0%$&*2#@8*$#/%'#+(.#%$#-$,-)% ."'(5)"%."#%&'(&($#/%'#$#*'2"<%

%$5&&('.$%*11%*$&#2.$%(0%$2,#-.,0,2%*-%*/3*-2#%H:I:]$%+,$$,(-% 6.#+%$2,#-2#%MI##%."#%H:I:%I2,#-2 (3B*8(5.@5B2,#-2#@ %6.#+$7% %="*-)#7%% 21#7%% ,.,(-7%% L-.#',('<%

( ) (.14)

20 001 -

// . . / / / . 5 -5 1 - 1-
-2 1 51 01 & &

20 -1 2 , 2020 -2 2 , 2020.

A%5&%.(%c%6#*'$%,-%/5'*.,(-%*-/%WhDDp%,-%.(.*1%3*15#<%%

%

I6-(&$,$A%P*'16%=*'##'%L-3#$.,)*.('%;'()'*+%MP=L;N%,-%R#1,(&"6$,2$%,$%/#$,)-#/%.(%$5&&('.%(5.$.*-/,-)% $2,#-.,0,2%'#$#*'2"%*-/%2*'##'%/#3#1(&+#-.%(0%$2,#-.,$.$%*.%."#%#*'16%$.*)#%(0%."#,'%&'(0#$$,(-*1%2*'##'$< !"#%&'()'*+%*,+$%.(%#-2(5'*)#%,--(3*.,3#%'#$#*'2"%,-,.,*.,3#$%*-/%251.,3*.#%/,3#'$#%$2,#-.,0,2%1#*/#'$",&% ,-%R#1,(&"6$,2$<%!",$%&'()'*+%,$%/#$,)-#/%.(%0($.#'%."#%#+&(4#'+#-.%,-%$&,'*.,(-*1%*-/%*'.,$.,2%(0%."#% -#Y.%)#-#'*.,(-%(0%$&*2#%'#$#*'2"#'$7%*$%&*'.%(0%."#%P%(0%."#%ZOLeP%MZ,3#'$,067%O#*1,V#7%L-.#)'*.#7% e#-.5'#7%P/52*.#%N%,-,.,*.,3#%&5.%0('4*'/%*$%*%",)"%&',(',.6%'#2(++#-/*.,(-%(0%."#%CDFc%I(1*'%*-/%I&*2#% ;"6$,2$%Z#2*/*1%I5'3#6<

!

!

5&%.(%c%6#*'$%,-%/5'*.,(-%*-/%WhDDp%,-%.(.*1%3*15#<%: 4*'/$%*'#%&1*--#/%.(%$.*'.%,-% [2.(8#'% CDCD%

H : I : %,$%$##9,-)%&'(&($*1$%."*.%&1*-%.(%&5'$5#%,--(3*.,3#7%#*'16@$.*)#%$&*2#%.#2"-(1()6% '#$#*'2"%,-%."#%.(&,2%*'#*$%$&#2,0,2*116%#-5+#'*.#/%,-%."#%$(1,2,.*.,(-<% I &#2,0,2*1167%."#%&'(&($*1$%+5$.%

!

[redacted] *)#%,-215/#$A%%

[redacted] %%

Z#.#'+,-*.(.%(0% [redacted] %%

PY.#-$,(-%(0 [redacted]

I&#2,*1%;'()'* [redacted]

R,$.('6%(0%O#1*.#/% [redacted]

O#1*.#/%Z*.*%%

( ) -

"..&$ABB444<-,0*<5$/*<)(3B&'()'*+B*)',251.5'#@*-/@0((/@'#$#*'2"@,-,.,*.,3#@*0',

10.310 ( )

:-%,-/,3,/5*1%4"(%,$%8#),--,-)%",$B"#'%2*'##'7%/(#$%-(.%"*3#%*-%#Y.#-$,3#%$2,#-.,0,2%&581,2*.,(-% '#2('/7%*-/%"*$%1#$$%."*-%0,3#%6#*'$%&($.)'*/5*.#7%2*'##'@.'*29%#Y&#',#-2#%,$%#-2(5'*)#/%.(%$58+,.%*-% *&&1,2*.,(-%0('%*%H#4%L-3#$.,)*.('% \'*-.%0('%'#$#*'2"7%#/52*.,(-7%*-/B('%#Y.#-$,(-%*2.,3,.,#$<% !"#% -#4% ,-3#$.,)*.('%+*6%-(.%"*3#%'#2#,3#/%2(+&#.,.,3#16%*4*'/#/%J#/#'*1%'#$#*'2"%05-/$%4,."%."#%#Y2#&.,(-%(0% &'#@%('%&($./(2.('*1%)'*-.$%('%` I Z : %HOL%('% : JOL% I ##/% \'*-.$<% !"#%4('9%&'(&($#/%0('%H#4%L-3#$.,)*.('% \'*-.$%+5$.%*//'#$$%*%$&#2,0,2%;'()'*+%:'#*%;',(',.6%/#$2',8#/%5-/#'%;'()'*+%:'#*%Z#$2',&.,(-$%*-/%."#% *&&1,2*.,(-%+5$.%8#%$58+,..#/%/,'#2.16%.(%."*.%;'()'*+%:'#*%86%."#%/#$,)-*.#/%/#*/1,-#%/*.#<%

!"#% H*.,(-*1%L-$.,.5.#% (0% J((/% *-/% :)',251.5'#]$% 01*)$",&% 2(+&#.,.,3#%)'*-.$% &'()'*+7% ."#% +)'251.5'#% *-/% J((/% O#$#*'2"% L-,.,*.,3#% M : JOLN% $(1,2,.$% *&&1,2*.,(-$% 0'(+% $2,#-.,$.$% #*2"% 6#*'<% !"#% [redacted] %(00#'$%05-/,-)%0('%$,-)1#@05-2.,(-%*-/%,-.#)'*.#/%*)',251.5'*1%'#$#*'2"7%#/52*.,(-7%*-/% [redacted] *.%*//'#$$%9#6%&'(81#+$%(0%1(2*17%'#),(-*17%-*.,(-*17%*-/%)1(8*1%,+&('.*-2#%,-%5.*,-,-)% [redacted] ')*-,2%0((/%*-/%*)',251.5'#%6.#+$<%L-%J,$2*1%i#*'%MJ i N%CDCD7%*-.,2,&*.#%."#'#%4,11%8#% [redacted] ('% : &&1,2*.,(-$% MOJ : $NA% J(5-/*.,(-*1% *-/% : &&1,#/% I2,#-2#S% I5$.*,-*81#% :)',251.5'*1% [redacted] 52*.,(-%*-/% b('90('2#%Z#3#1(&+#-.<%;'($&#2.,3#%*&&1,2*-.$%*'#%#-2(5'*)#/%.(%'#3,#4% [redacted] 1&1('#%*11%."#%(&&('.5-,.,#$%*3*,1*81#%.(%."#+<%;(.#-.,*1%*&&1,2*-.$%$"(51/%'#0#'%.(%."#%: JOL% [redacted] ."#6%*'#%&($.#/%*-/%."#%OJ : %'#$(5'2#$%&*)#%0('%,-0('+*.,(-%-##/#/%.(%$58+,.%*-%*&&1,2*.,(-% [redacted] (&',*.#%&'()'*+<

( )

"..&$ABB*,<)(()1#B'#$#*'2"B(5.'#*2"B0*251.6@'#$#*'2"@*4*'/$B

2020 **2020.**

\(()1#% *22#&.% *&&1,2*.,(-$% 0'(+%&#'+*-#-.%0*251.6% *.% 5-,3#'$,.,#$<% J5-/,-)% ,$%0(25$#/% (-% $5&&('.,-)% ; "Z%$.5/#-.$7%$(% 4#% /(% *11(4% *&&1,2*.,(-$% 0'(+% 0*251.6% *.% '#$#*'2"% ,-$.,.5.,(-$% ."*.% *4*'/% '#$#*'2"%/#)'##$%.(% ; "Z%$.5/#-.$<%

*" | "#$#%&%&!

!

!

A% *$% `O%2*-%(-16%-(+,-*.#%.4(%0*251.6% +#+ %0('%
2(-$,/#'*.,(-<% !"#% `O% ;'#$ %-(+,-*.#$% .4(% #*'16-2*'##'% &'(0#$$('$% #*2"% 0'(+% ."#,'% ,-$.,.5.,(-<%
?: &&1,2*-.%+5$.%4('9%,-%2(-2#'.%4,."%J(5-/*.,(-%O#1*.,(-$%: /3*-2#+#-.% [00,2#%,-%."#$#%*&&1,2*.,(-$<%

□ **2 , 201 (** **( )** **1 , 201)**S%
1 , 2020 - **.**%

A%W j _E7DDD%M(3#'%E%6#*'$N%

=*-/,/*.#$% +5$.%8#% #1,),81#%.(%$#'3#% *$% &',-2,&*1%,-3#$.,)*.('$%#-)*)#/%,-%'#$#*'2"%,-%."#% -*.5'*1%*-/%&"6$,2*1%$2,#-2#$%('%#-),-##',-)<% a 5$.%8#% 4,.",-%."#%0,'$.%"'##%6#*'$%(0%."#,'%0*251.6%2*'##'$% ."*.%,$7% 4"($#%,-,.,*1%0*251.6%*&&(,-.+#-.$%8#)*-%-(%#*'1,#'%."*-% a *6%cF7%CDFh7%*-/%-(%1*.#'%."*-% a *6%cF7% CDFG<%M? : %+*^(',.6%(0%*4*'/##$%*'#%,-%."#%C-/%('%c'/%6#*'%(0%."#,'%0*251.6%2*'##'$N<%

%! "#% ; *29*'/%J#11(4$",&$%0('% I 2,#-2#%*-/%P-),-##',-)%&'()'*+%,-3#$.$%,-%05.5'#%1#*/#'$%4"(% "*3#%."#%0'##/(+%.(%.*9#%',$9$7%#Y&1('#%-#4%0'(-.,#'$%,-%."#,'%0,#1/$%(0%$.5/67%*-/%0(11(4%5-2"*'.#/%&*."$% ."*.%+*6%1#*/%.(%)'(5-/8'#*9,-)%/,$2(3#',#$<%O#2,&,#-.$%.*9#%*%2'#*.,3#%*&&'(*2"%.(%."#,'%'#$#*'2"7%/*'#% .(%.",-9%8,)7%*-/%0(11(4%-#4%,/#*$%4"#'#3#'%."#6%1#*/<%! "#%J(5-/*.,(-%#+&"*$,V#$%$5&&('.%0('%,--(3*.,3#%

!

A%I522#$$051%*&&1,2*-.$%4,11%&'(&($#%*%.'516%,--(3*.,3#7%",)"@',$9%&'(^#2.%4",2"%4,11%2(-.',85.#% $,)-,0,2*-.%*/3*-2#$%,-%2"#+,$.'6%*-/%."#%1,0#%$2,#-2#$S%'#&'#$#-.%*%.'5#%/#&*'.5'#%0'(+%25''#-.%'#$#*'2"% /,'#2.,(-$S%5.,1,V#%*%+51.,/,$2,&1,-*'6%*&&'(*2"S%*-/%0($.

!