



MUSC4102

7 f]h]WU`DfUW]W`]b`A i g]W

GYa YghYf`Hk c`#`&\$%

7 ci fgY`Cj Yfj JYk

`GHUZZ7 cbhUW`i8YHU]`g`

`7cbj Ybcfg`

B Ua Y	9a U]`	5j U]`UV]`]m	@cWU]hcb	D\cbY
8F"A]WUY`<ccdYf	a "\ccdYf4 i bgk "YXi "Ui	VmUddc]bħa Ybh	F cca `%%ž @Yj Y`%ž F cVYfh K YVghYf	

`Hi ħc`fg`

B Ua Y	9a U]`	5j U]`UV]`]m	@cWU]hcb	D\cbY
5bħc bmi7 \a]Y`	U bħc bmiWħa]Y`4 i bgk "YXi "Ui			

GWXcc`7 cbhUW`i`bZcfa Uh]cb

F cca ` ` %&ž`Yj Y`" `F cVYfhK YVghYf`6i]X]b[

D\cbY. `f\$&Ł`- ` ,) `(,) *

9a U]`. [gUa 4 i bgk "YXi "Ui](#)

K YVg]ħY. [\ħtdg.#gUa "Ufġ"i bgk "YXi "Ui](#)

H\Y`GWXcc`cZħY`5fġ`UbX`A YX]U`k ci `X`_]Y`ħc`F YgdYWZ`m5W_bck`YX[Y`ħY`HfUX]ħcbU`7 i ġħcX]Ubgž
ħY`6YXY[U`fP`Ybg]b[ħcb`Wħa di ġŁž; UX][U`f7]mUbX`5fħ/`8Yg][b`7 Ua di ġYgŁ`UbX`ħY`B [i bbUk U`
dYcd`Y`f5i ġfU]Ub`8YZbW` : cfW`5WUXYa m]b`7 UbVYffUŁcZħY`UbXg`k \YfY`YUW`Wħa di ġcZI`BGK` ġg
`cWħYX"

5ħY`bXUbW`F`Ye i]fYa Ybħg

5`ġħi XYbh]ġ`YI dYWYX`ħc`UħY`bX`U`WUgg`W`bħUW`i`ci fg`Zcf`U`ZJW`!ħc!ZJW`fi &`Łcf`V`YbXYX`W`i fgY`UbX
W`a d`Yħ`U`UW]j`]ħYg`Zcf`U`V`YbXYX`cf`Z`mcb`]bY`W`i fgY"

5`ġħi XYbhk \c`Uff]j`Yg`a cfY`ħ`Ub`%)`a]bi`ħYg`UħY`a UmVY`dYbU`]ġYX`Zcf`bcb!UħY`bXUbW`"Zġi`W`U`dYbU`ħm
]ġ`ja dġYXž`ħY`ġħi XYbhia i ġħVY`]bZcfa`YX`j`YfVU`mUħiħY`YbX`cZWUgg`UbX`UXj`]ġYX`]b`k`f]ħ]b[`k`ħ]b`&(
\ci fg"

: cfa cfY jbcfa Uqcb UVci hAY UHYbXUbW dfchWg jb AY: UW hmcZ5fng UbX GcWU
GWYbWg.

7 ci fgY'8YHJ]`g

7 fYX]hDc]bng '*`

Gi a a UfmcZ`hY'7 ci fgY

Gi VYWh5fYU.'? ge[U'

H\Y`Vei fgY`YbUV`Yg`mci`hc`YI`H`bX`mci`f`a`UghY`fmcZX]gW]d`]bY!gdYWZ]W_bck`YX[`Y`UbX`dfUW]W`h`fci`[`\`W]h]W`gh`X]Yg`]b`a`i`g]W`Mci`k`j`gh`Xmia`Y`h`c`Xg`c`Z]W]h]W`dfUW]W`hc`\`Y`d`mci`Z]bX`k`Umg`hc`]a`dfcj`Y`h`Y`Y`h`]W`UbX`UYgh`Y]h]W`ci`h`W`a`Yg`]b`mci`f`W`cgYb`UfYU`c`ZdfUW]W`k`\`Y`h`Yf`]h]g`a`i`g]W`c`[`mž`dYXU[`c[`mž`dYfZ`fa`UbW`cf`W`a`dcg]h]cb`"H\Y`Vei`fgY`dfcj`]XYg`U`Z`fi`a`Z`f`mci`hc`]b]Ygh[`UH`UgdYW]g`c`Z`mci`f`UfYU`c`Z`a`i`g]W`gh`Xm]b`h`Y`][`\`h`c`Z`W`ffYbhXYVUH`g`k`]h`]b`h`Y`X]gW]d`]bY`"b]Ygh[`UH]cbg`UfY`]b`Z`fa`YX`VmYj`]XYbW`VUgYX`cb`j]Y`a`i`g]W`a`U_]b[`žj`]XYcgž`Ui`X]c`fY`W`fX]b[`gž`g`W`fYg`UbX`di`V`]g`Y`X`fYgYUfW`"Mci`k`j`U`gc`[`U]b]b!XYd`h`Z]a`j]Uf]m]k`]h`U`j`Uf]Y`h`m`c`Z`U`d`d`f`c`U`W`X`Y`g`hc`W]h]W`dfUW]W`]b`a`i`g]W`h`fci`[`\`h`Y`]bX]j`]Xi`U`cf`W`c`U`V`c`f`U]h]Y`Y`I`d`c`f`U]h]c`b`c`Z`U`W`cgYb`d`f`c`Y`W`h`W`b`W`d`h`h`U`h`k`j`W`a`]b`U`h`]b`U`g`i`a`a`U]h]Y`dfYgYb]h]cb#dYfZ`fa`UbW`"

5 h`h`Y`W`b`Wi`g]c`b`c`Z`h`]g`W`i`fgY`h`Y`gh`XYbhk`]`VY`UV`Y`hc

%`7`f]h]W`m`UggYgg`a`i`g]W`dfUW]W]g`UbX`dfcXi`W]cbg`]b`gcW]U`UbX`W`hi`fU`h`fa`g`
&`7`f]h]W`m`Yj`U`i`UH`U`f`Ub[`Y`c`Z`U`h`Z`fa`g`UbX`XYa`cbghfUH`Ub`i`bXYfg]UbX]b[`c`Z`W`ffYbhXYVUH`g`
UVci`ha`i`g]W`k`]h`]b`Ub`]b`h`fX]gW]d`]b`Uf`m`W`b`h`Y`I`h`
'`" `A`U`_]b`Z`fa`YX`XYW]g]cbg`UVci`hgY`YW]b[`Z`ca`U`j`Uf]Y`h`m`c`Z`U`d`d`f`c`U`W`X`Y`g`]b`XYj`Y`cd]b[`U`
dfYgYb]h]cb#dYfZ`fa`UbW`h`U`h`Y`I`h`b`X`g`h`Y`]f`i`bXYfg]UbX]b[`c`Z`h`Y`d`f`c`W`ggYg`]b]c`j`YX`]b`
Ygh]U`]g`]b[`U`W`c`U`V`c`f`U]h]Y`Y`f`Y`U]h]cbg`]d`k`]h`c`h`Y`f`d`c`h`b]h]U`W`Y`U]h]Y`d`U`f`h`Y`fgž`c`f`c`h`Y`f`h`m`d`Y`g`c`Z`
a`YX]U`"

HYUW]b[`G`h`f`U`h`[`]Y`g`

Gh`XYbng`k`]`VY`]b]f`c`Xi`W`X`hc`U`hc`d]W`f`Y`U`h`X`hc`W]h]W`dfUW]W`Ug`]h]Udd`]Y`g`hc`a`i`g]W`UbX`h`Y`d`Y`f`Z`fa`]b[`
Ufng`a`c`f`Y`[`Y`b`Y`f`U`m`H\Y`Y`W`h`f`Y`k`]`]b]f`c`Xi`W`h`Y`Z`c`k`]b[`k`YY`f]g`Ya`]b]U`f`Y`U`X]b[`k`]h`h`Y`U]a`]c`Z`
W`Y`U]h]b[`d`c`g]V`]h]Y`g`Z`f`X]gW`gg]c`b`UbX`XYVUH`]b`h`Y`g`Ya`]b]U`f`"

GYa`]b]U`f`g`k`]`f]X`Y`V`U`h`U`b`X`X]g`W`gg`h`Y`]X`Y`U`g`d`f`Y`g`Y`b`h`X`]b`h`Y`Y`W`h`f`Y`U`b`X`f`Y`U`X]b[`U`b`X`f`h`d`f`c`j`]X`Y`U`
Z`fi`a`Z`f`h`Y`X`Y`Y`c`d`a`Y`b`h`c`Z`W`Y`U]h]Y`d`f`c`Y`W`g`U`b`X`g`l`c`k`]b[`g`"

5ggYgga Ybh

8YHU]g'cb`hY`j Uf]ci`g`hUg_g`UbX`XYUX`]bYg`Zcf`hY`dYfZcfa`UbW`#dfYgYbH]cb`k`]`VY`]ggi`YX`Xi`f]b[`hY`Zfgh`YWi`fY`UbX`X]gW`ggYX`Uh`Yb[`h`Xi`f]b[`hY`ZfghgYa`]bUf"

5ggYgga YbhHUG_g`

5ggYgga YbhHUG_g`	K`Y][`h	8i`Y`8UH`	Gh`XYbh`@YUfb]b[`Ci`hW`a`Yg`5ggYggYX`
7`f]h]WU`DYYF`F`Yj`]Yk`g`	%`	&&#/\$#&\$%`\$)`.\$\$.`DA`	%z&
DfcW`gg`8`]Ufm`	&\$	B`ch5`dd`]WUV`Y`	&
DYfZcfa`UbW`#dfYgYbH]cb`)`\$	B`ch5`dd`]WUV`Y`	%z
DfYdUfU]cb`Zcf`WUgg`	%`	B`ch5`dd`]WUV`Y`	%z&

5ggYgga Ybh8YHU]`g`

5ggYgga Ybh%`7`f]h]WU`DYYF`F`Yj`]Yk`g`

GHUfhXUH`.

8YHU]`g`. `7`f]h]WU`DYYF`F`Yj`]Yk`g`z`VUgYX`cb`a`UH`f]U`dfYgYbH]cb`g`h`X]cg`UbX`gYa`]bUfg`VmchYf`gh`XYbhg`"K`f]h]b`ZYXVUW`UbX`a`Uf`_"

5XX]h]cbU`XYHU]`g`.

GYY`A`ccX`Y`Zcf`U`hY`]bZcfa`Uh]cbz`]bWi`X]b[`fi`Vf]Wg`"

Hi`fb]h]b`gYH]b[`. `H\]g`Ugg][`ba`Ybh]g`gi`Va`]hYX`h`fci`[`\`Hi`fb]h]b`UbX`g`h`XYbhg`Xc`bchgYY`Hi`fb]h]b`g]a`]Uf]mfYdcfng`"

5ggYgga Ybh&.`DfcW`gg`8`]Ufm`

GHUfhXUH`.

8YHU]`g`. `DfcW`gg`8`]Ufm`h`UhYfZYWg`cb`hY`dfUW]WU`UbX`W]h]WU`a`Yh`cXg`Vmik`\]W`h`Y`DYfZcfa`UbW`#dfYgYbH]cb`]g`UW`Yj`YX`fWU`" `Z`\$`\$`k`cfXg`z`k`]h`Ub`UW]W]b]h]cb`hY`dfcW`gg`fU`h`Yf`h`Ub`cb`m`hY`dfcXi`W`"K`f]h]b`ZYXVUW`UbX`a`Uf`_"

5XX]h]cbU`XYHU]`g`.

GYY`A`ccX`Y`Zcf`U`hY`]bZcfa`Uh]cbz`]bWi`X]b[`fi`Vf]Wg`"

8i`Y`.`%%`5i`[`i`g]z`)`da`/`&`,`GYd]a`VYfz`)`da`/`&&`C`WcVYfz`)`da`"

Hi`fb]h]b`gYH]b[`. `H\]g`]g`bchU`Hi`fb]h]b`Ugg][`ba`Ybh`

5ggYgga Ybh`. `DYfZcfa`UbW`#dfYgYbH]cb`

GhUfhXUHy.

8YhU]g. 'DYfZcfa UbWY #DFYgYbHhcbžk]h' hLY'cdhcb'cZYI d'cf]b['hLY]f'VXcgYb'XY[fYY'gdYWU']nUh]cb'k]h]b
Ub]bhYfX]gWd`]bUfmWcbhYI h'%'\$!%) 'a]bk gYb'XY[fYY'gdYWU']nUh]cb'k]h]b

Gi Va]gg]cb'cZ5ggYgga YbhHUg_g

Gh XYbthg'UFY'YI dYWVX'hc'di hHAY'f'buA Yg'UbX'ghi XYbhbi a VYfg'cb'Yj YfmdU[Y'cZHY]f'Ugg][ba Ybthg"

Hi fb]hb'Gi Va]gg]cb

Zmci YbWci bhYf'U'dfcV'Ya 'k \Yb'UHYa dh]b['hc'gi Va]hrci f'Ugg][ba YbhHfci [\ 'Hi fb]hbzd'YUgY
HY'Yd\cbY'9I HYfbU'Gi ddcfhcb'-' ,) "' ' ' %cf'Ya U]'HYa 'cb'[YI HYfbU'HY'f'gi ddcfh4 i bgk "YXi "Ui "](#)"Gi ddcfh
\ci fg'UFY' , .\$\$Ua '-'%. \$\$da 'cb'k YY_XUmg'UbX'-. \$\$Ua '-') . \$\$da 'cb'k YY_YbXg'f'fl *) 'XUmg'U'mYUfL'Zmci
UFY'i bUVY'hc'gi Va]hrci f'Ugg][ba YbhXi Y'hc'U'ZU' 'hk]H'Hi fb]hb'rci 'a UmUdd'm'Zcf'Ub'YI HYbg]cbZ'Vi hrci
a i ghfYHU]b'rci f'h]W_Yhbi a VYf'Zca '9I HYfbU'Gi ddcfhfU'cb['k]H'UbmcH'Yf'f'Y'Yj UbhXcW a Ybthg'hc
]bWi XY'Ug'Yj]XYbW'hc'gi ddcfhrci f'YI HYbg]cb'Udd']W]hcb'"Zmci 'Ya U]'9I HYfbU'Gi ddcfhrci 'k]'
Ui 'ca UH]W' 'm'f'Y'W'j' Y'U'h]W_Yhbi a VYf'Z'Vi h]Zmci 'HY'Yd\cbY'mci 'k]' 'b'Y'X'hc'gdY'W]W' 'm'Ug'_Zcf'cbY"
Hi fb]hb'U'gc'dfcj]XYgi dXUH'g'cb'HY]f'gmg'Ya 'ghUH'g'cb'Hk]HYf"

; YbYfU'm'Z'UggYgga YbhHUg_g'a i ghVY'gi Va]HYX'Y'Y'W'f'cb]W' 'mj]U'Y]H'Y'f'Hi fb]hb'cf'U'A ccX'Y
Ugg][ba Ybh' 'b]bgH'ubW'g'k \YfY'h.]g']g' bchidcgg]V'YZ'hk]' 'VY'g'U'HY'X'cb'mci f'Wci fg'Y'g'A ccX'Y'g]HY'k]H
U'HY'fbU]j' Y'gi Va]gg]cb'XYHU]g"

@UH'5ggYgga YbhDYbU'h]Yg

Gh XYbthg'UFY'fYgdcbg]V'Y'Zcf'HY'gi Va]gg]cb'cZUggYgga YbhHUg_g'VmiHY'f'Yei]fYX'XUH'g'UbX'h'a Yg'
8YdYbX]b['cZHY'YI HYbhcZXY'Um]b'HY'gi Va]gg]cb'cZUb'UggYgga YbhHUg_g'dUghHY'Xi Y'XUH'UbX'h'a Yz
cbY'cZHY'Zc'ck]b['UH'dYbU'h]Y'g'k]' 'Udd'mi b'Ygg'gdY'W'U' 'W'bg]XYfU]cb'cf'U'V'Ub_YhYI HYbg]cb'Xi Y'hc'U
HY'W'b]W' 'ci HU] Y']g['fUbHYX'": cf'HY'di fdcgY'cZ'UH'dYbU'm'W'W'UH]cbZ'U'X'Um]g'XY'Ya YX'hc'VY'YUWX
&(!\ci f'dYf]cX'f'cf'dUfhHY'fYcZ'dUghHY'gh]di 'UH'X'XYUX']bY'Zcf'gi Va]gg]cb"

- K cf_'gi Va]HYX'Ygg'HY'Ub'%'\$'XUmg'UZH'f'HY'gh]di 'UH'X'XYUX']bY']g'gi V'Y'W'hc'U'XYXi W]cb'cZ
) i 'cZHY'hc'U'Uk UfXUV'Y'a Uf_'Zca 'HY'a Uf_'H'U'hc'ci 'X'\Uj'Y'V'Y'Y'b'UWX']Yj YX']ZbchZcf'HY
dYbU'm'Zcf'Yj YfmXUmdUghHY'gh]di 'UH'X'XYUX']bY'Zcf'gi Va]gg]cb'"H\U]gZ'U'gh XYbhk \c'gi Va]hg
Ub'Ugg][ba Ybhk]H'U'gh]di 'UH'X'XYUX']bY'cZ(. \$\$da 'cb'%' 'A Um&\$%' 'Uh(. \$\$da 'cb'%' 'A Um&\$%'
k]']bW'f'U'XYXi W]cb'cZ%'\$' " "

HUg_'k]H'U'bc'b dYfW'bhU[Y'a Uf_

ZHY'HUg_]g'a Uf_YX'ci hcZ&) ZHY'b'UH'gi Va]gg]cb'k]' 'UH'fU'W'hi'U'dYbU'm'cZU'XYXi W]cb'cZ%'&) Zca 'HY
a Uf_'Uk UfYX'hc'HY'gh XYbhZcf'Yj Yfm&(!\ci f'dYf]cX'f'cf'dUfhHY'fYcZ'dUghHY'gh]di 'UH'X'XYUX']bY"

- K cf_gi Va]hYX %\$'hc '%- 'XUmg 'UZhf'h'Y'gh]di 'UhYX'XYUX`]bY'k]''VY'UggYggYX'UbX'ZYXVUW_dfcj]YXX'Vi hU'a Uf_cZnYfc'k]''VY'fYWcfYXX''Z'hY'k cf_k ci 'X'\Uj Y'fYW]j YX'U'dUgg'a Uf_Vi hZcf hY''UhY'bYgg'UbX'hY'k cf_]g'U'Wta di `gcfmWci fgY'Wta dcbYbhfli fX'Y'fYei]fYa YbHžU'ghi XYbhk]''VY'XYYa YX'hc'\Uj Y'a Yh'hUhfYei]fYa Ybh'
- K cf_gi Va]hYX &\$'cfa cfY'XUmg 'UZhf'h'Y'gh]di 'UhYX'XYUX`]bY'k]''bchVY'UWW'dhYX'Zcf UggYgga YbhUbX'k]''fYW]j Y'bc'ZYXVUW_ž'a Uf_cf[fUXY''Z'hY'UggYgga YbhUg_]g'U'Wta di `gcfm Wta dcbYbhcZ'hY'Wci fgY'U'ghi XYbhk]''fYW]j Y'Ub'l bgUh]gZUWc'fm: U]'fl : Ł'[fUXY'Ug'U'fYgi `hcZ i bgUh]gZUWc'fmdYfZcfa UbVW`]b'Ub'YggYbh]U'Wta dcbYbhcZ'hY'Wci fgY''

H\]g`]bZcfa Uh]cb`]g'U'gc'Uj U]UV'Y'Uh

[\h\]g.#k k k "Ufng"i bkg "YXi "Ui #W ffYbH\]ghi XYbhg#JWJXYa \]W\]bZcfa Uh\]cb#dfchWc`g!\[i \]XY`\]bYg#](#)

5 WUXYa]W<c bYghmUbX`D`U[]Uf]ga

D`U[]Uf]ga `]g`i g]b[`hY`k cfXg`cf]XYUg`cZchYfg`UbX`dfYgYbh]b[`hYa `Ug`mci f`ck b" `hWUb`hU`Y`a Ubm
Zcfa gZ`Zca `XY`]VYfUHY`WXYU]b[`hc`UWV]XYbhU`mW`dm]b[`Zca `U`gci fW`k]h`ci hUW_bck`YX[Ya Ybh`

I BGK `[fci dg`d`U[]Uf]ga `]bhc`hY`Zc`ck]b[`WUHY[cf]Yg.

7 cdm]b[.`i g]b[`hY`gUa Y`cf`j Yfmg]a]Uf`k cfXg`hc`hY`cf][]bU`hYI hcf`]XYU`k]h`ci hUW_bck`YX[]b[`hY`
gci fW`cf`i g]b[`ei chU]cb`a Uf_g`"H\]g`U`gc`Udd`]Yg`hc`]a U[YgZ`UfhUbX`XYg][b`dfc`YWgZ`Ug`k Y`Ug
dfYgYbhU]cbg`k \YfY`gca YcbY`dfYgYbh]g`UbchYf`g`]XYUg`cf`k cfXg`k]h`ci hWYX]h`

hUddfcdf]UHY`dUfUd`fUg]b[.`7`Ub[]b[`U`ZYk `k cfXg`UbX`d`fUgYg`k \]Y`a cghmifYU]b]b[`hY`cf][]bU`
ghfi W`i fY`UbX`#f`dfc[fYgg]cb`cZ]XYUg`cZ`hY`cf][]bU`Z`UbX`]bZcfa U]cb`k]h`ci hUW_bck`YX[Ya Ybh`H\]g`U`gc
Udd`]Yg`]b`dfYgYbhU]cbg`k \YfY`gca YcbY`dUfUd`fUgYg`UbchYf`g`]XYUg`cf`k cfXg`k]h`ci hWYX]hUbX`hc
d]YW]b[`hc[YhYf`ei chYg`UbX`dUfUd`fUgYg`]bhc`U`bYk `k \c`Yz`k]h`ci hUddfcdf]UHY`fYZYfYbW]b["

7 c`i g]cb. `k cf_]b[`k]h`chYfg`Vi hdUgg]b[`cZ`hY`k cf_]Ug`U`dYfgcb`g`]bX]j]Xi U`k cf_"`7 c`i g]cb`U`gc

- i bXYfghUbx'mci f'f][\hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[]Uf]ga ž'Wc'dmf][\hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5W'W'dhUV'Y'I gY'cZ I BGK '⇒H'F'Ygci f'W'g'Dc`]W'h
- VY'Uk UfY'cZ'Y'ghUbxUfXg'cZVY\Uj]ci f'YI dY'W'X'cZYj Yfmcby']b'h'Y'I BGK 'W'a a i b]m
- 'cW'W'h'gYfj]W'g'UbX'j]bZ'fa U]cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZ'Y'gY'UfY'Ug'k]''VY'ZJa]]Uf'hc'mci ž'c'h'Yfg'k]''VY'bYk "; U]b]b['U'gc'X'i bXYfghUbx]b['cZU''h'Y fY'U'Y'X'UgdY'W'g'cZ9@-G9'k]''\Y'd'mci 'a U_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK "

[f\hd.#gi.V'Y'W'f'i \]XYg"\]VfUfm'i bgk "YXi "Ui #' \]gY#UVci h' \]gYŁ](#)

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

F YWca a YbXYX`F Ygci fWg

7ci fgY`9j U`i Uh]cb`UbX`8Yj Y`cda Ybh

≠mci `Uj Y`UbmZYXVUW_žā U_Y`U`hja Y`tc`Wca Y`UbX`hU`_`tc`a Y"

⇒a U[Y`7fYX]h

| A <

7F ⇒CG

7F ⇒CG`Dfcj]XYf`7cXY.`\$\$\$- , ;