

ORZ RUOXRQWUDDILQRVH IDPLO\ RI ROLJRVDFFKDULGHV 7KH
DVVLVWHG VHGHSFWRVPHDQGR I QHZ VR\EHDQ RU UHODWHG F
IHHG SURGXFWLRQ

, DOVR KDG WKH RSSRUWXQLW\ WR OHDUQ IURP 'U %LO\HX
FURVVLQJ EQRIKWURDQWQGXFHG PXVEDQHWGLDQSRISKEDSVLHR
JHQRW\SH VDPSOLQJ IRU PROHFXODU JHQHWLF DQDO\VLV
)XUWKHUPRUH , DWWHQGHG WKH ZHHNO\ ELRLQIRUPDWLF\
RQ WKH SURJUHVV DQG RXWFRPHV RI WKELGHQDQVIRVLDQWLF
VWXRG\ 'UV %LO\HX\ V DQG 6FDERR\ V JURXS DQG WKHLU 3K' F

'U %LO\HX\ V ZRUN RQ JHQH GLVFRYHULHV PDLQWHQDQFH D
UHVXRUFHV JHQHWLF DGYDQFHPHQW DQG SUHFLVLRQ EU
GHYHORSPHQWLPISQRZHQGURS FXOWLYDUV , WUHDVXUH L
PDNH RXU UHVHDFK SURJUDPV LQQRYDWLYH DQG DW WK
VFLHQFH

Genomic data analysis

, GUDIWHG D WH[WERRN RQ UHVHDFK PHWKRGRORJ\ IRU W
LQ DJULFXOWXUDO VFLHQFHV SRVWJUDGXDWH VWXGHQW
DJULFXOWXUDO HGXFDWRUV DQG UHVHDFKFWILUWHQJLQJLQJH
DQG JHQRPLF GDWD DQDO\VLV GXULQJ WKLV VFLHQWLILF
UHYLHZHEGWLKHSULQRISSHFXORU JHQHWLF SDUDPHWRU DQG
PROHFXODU GDWD DVVHPEO\ DQG DQDO\VLV WRLFRVFXWDHQ
GHGXFH SRSXODWLRQ VWUXFWXUHV RI WHVW JHQRW\SHV L
GDWD DQDO\VLV ZHUH FUXFLDO WR GHYHORSLQJ WKH GUD
XQGHUJUDGXDWH DQG SRVWJUDGXDWH SODQWD EDQDQV

A

B

C

D

)LJXUHR\EHDQ URRW SKHQRW\SLQJ DW 5ROOLQV ERWWRP
, \$ URRW LPDJH DQDO\VLV IURP GLIIHUHQW DQJOHV GURC

1HWZRUNLQJ DQG FRSORJUE\RXUOLWLRQ

x , Q WKH ODVW ZHDNLRIY\XOAGVWRID\H 0HUVKD\TV ODE DW W
RI &LQFLQQDWL 2KLR JH\OHDD\QHGQWSEH\XHQWV\QQIRUPDWL
WRROV DQG FORXG FRPSXWLQJ SU\WJDDPWO\WHL\XOD OR U HEV
SODQW JHQYR\OLFLVQJ PXOWLGLVFLSOLQDU\ WHDPV

x , YLVLWHG WKH 8QLYHUVI&K\DRSD\DJQLQ8\B\ 8 P\ED\XVW
DOORZHG PH WR GLVFXVV ZLWK W\K\HUGRAE\BID\K, Q\Q\OD\WR
DQ\GHH W\88 FDPSXV DQG 5HVH\B\DSU\RGU\FLWEXMVLRQ ZLWK
6,/ WHDP LQF\X\W\H\U *R\OGVPLWK %ULDQ 7KHUDEB\Q\G 5LV
YLVD\WG LQWH\ZLD\OWS\RW\HQWLD\OO\ IRUJH FROODERUDWLRQ

7KURXJK W\KH\DG\Q\H\W\H FURSSLQJ V\VWHPV VSDQQQLQJ WK
DQG ,OOLZ\RV\H\FLWHGHV\Z\RJ\W\GH\H\U\W\HL\QQ PDLJH YDULHW\ Z
SODQW HUHFW\H\O\B\DL\W\H\G\H\VKR\U\G\SD\PH\Q\W\K\H\J\K\O\Q\W
GHQV\W\XUH

x 'U)HOL[)ULW ~~WFKD~~ PDVG 0HJKQDWK IQ ~~DDQF~~ DQ \$ Q B UHZ 6DFE
DQG WKH %D\)DUP WHDP & ~~BUQOVREQ~~ DQGGH ~~DNOCIS~~ ERUDW
x 'U 5LWD 0I ~~RDP~~ UDQJLQJ DQ \GYK ~~WRW~~ & QJ
x 'U 7HVID\H 0I ~~RUV~~ W ~~DX~~ H ~~DQ~~ GYK ~~RHW~~ K ~~GJ8~~ WRYHUFLLQ ~~Q~~ DRM & LQ
x 7KH VWDII RI WKH 8QLYHUVLW\ \$LU%Q% 1DQFS ~~®~~ % ~~NO~~ 6WD