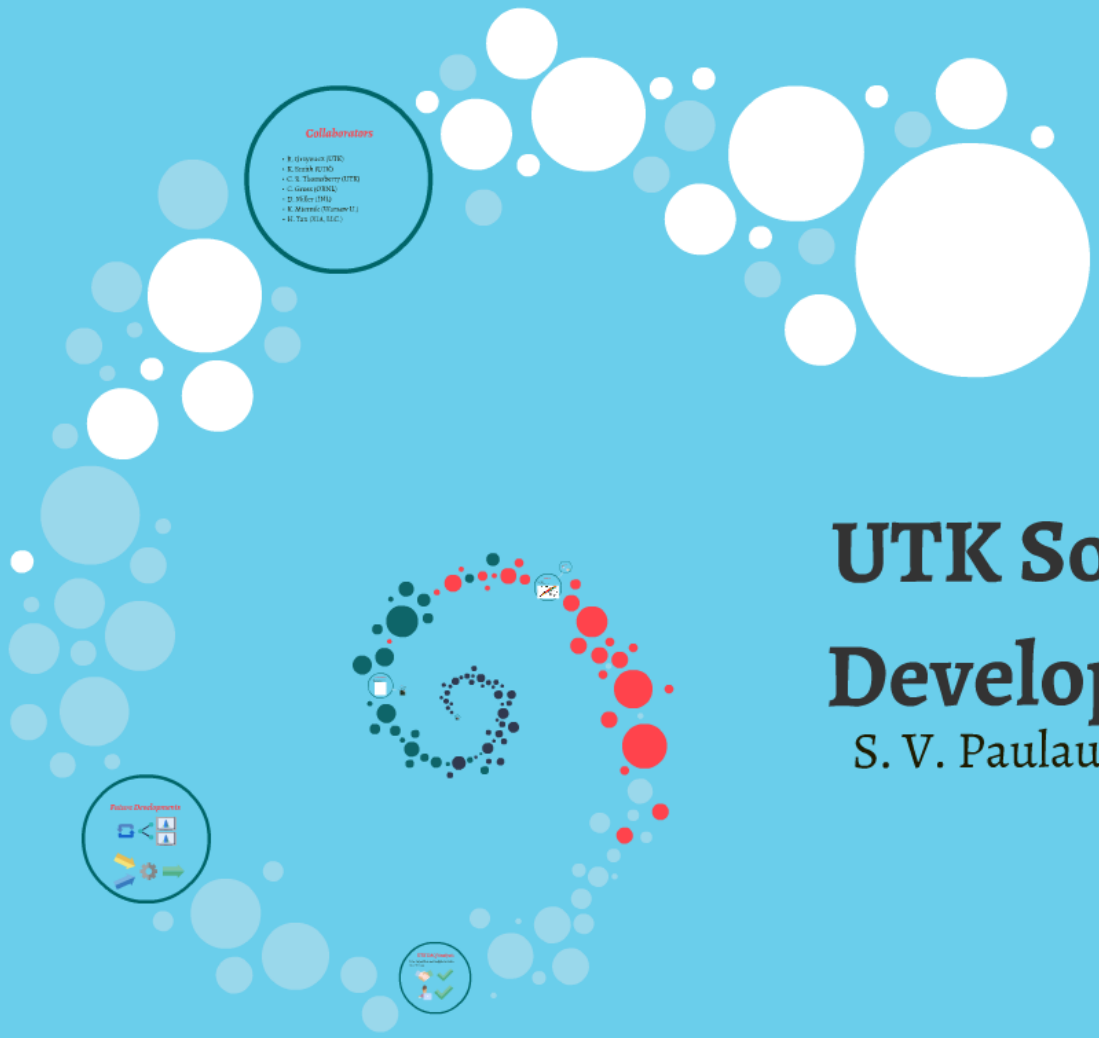


UTK Software Developments

S. V. Paulauskas, PMP

UTK Software Developments

S. V. Paulauskas, PMP

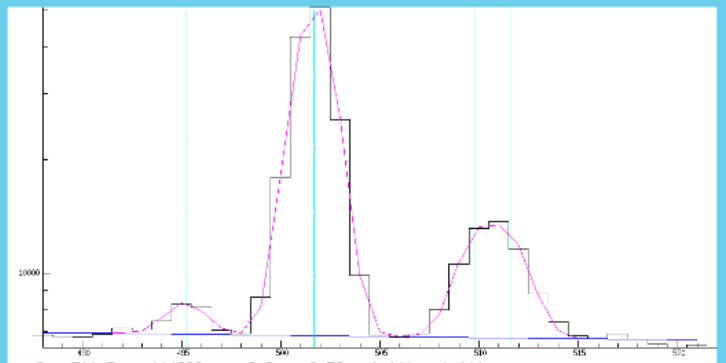
Rich History of DAQ

- Late 1970's : HHIRF software dev begins
- Early 1990's : HRIBF software dev begins
- Early 2000's : DDAS @ ORNL DGF4c
- Mid 2000's : Pixie-16 Rev A, C, D (100 MS/s)
- Early 2010's : Pixie-16 Rev F (250 MS/s)

HRIBF Software

Workhorses:

SCANOR, PACMAN and DAMM



```
   2   501.7    114296     2.2    2.39   0.000   0.000
   3   510.7     21090     6.9    2.39   0.000   0.000
DAMM->c
DAMM->gfit 1501 x
 GFIT 1501 X                FITTING - SQ,ITER =    38.58   8
 GFIT 1501 X         73cu-all.his        23-Aug-11 09:28:22 QFN=  38.58
   #        X      AREA    %ERR    FWHM     ASL     ASH
   1    495.2      3514    34.4    2.39   0.000   0.000
   2    501.7    114296     2.2    2.39   0.000   0.000
   3    510.7     21090     6.9    2.39   0.000   0.000
DAMM->d
    1501 S(  480-  550)* 1.000E+00=     603756 73cu-all.his     23-Aug-11 09:57
DAMM->ds
DAMM->df
DAMM->pk 511
DAMM->gfit 1501 x
 GFIT 1501 X                FITTING - SQ,ITER =     6.82   8
 GFIT 1501 X         73cu-all.his        23-Aug-11 10:01:08 QFN=   6.82
   #        X      AREA    %ERR    FWHM     ASL     ASH
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   2    501.7    114376     0.9    2.35   0.000   0.000
   3    509.8     13289     8.7    2.35   0.000   0.000
   4    511.6     12464     9.2    2.35   0.000   0.000
DAMM->[]
```
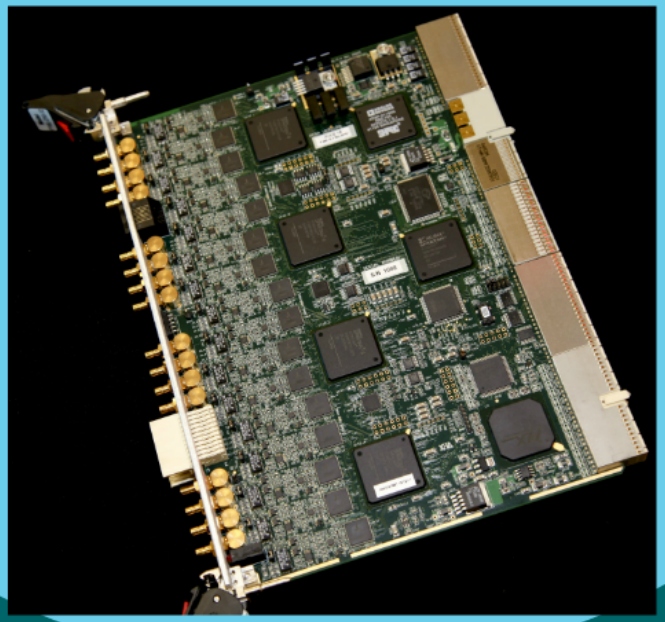

Pixie-16

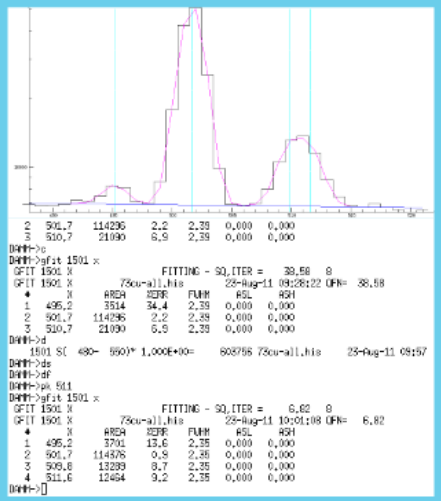
- DGF4c @ ORNL - Proton/Alpha Emitters
- Pixie-16 Rev A @ NSCL - UTK led decay study
- Pixie-16 Rev C @ NSCL - SEGA experiments
- Pixie-16 Rev D @ Dubna/ORNL - Super Heavy
- Pixie-16 Rev F @ UTK/NSCL - Developed for VANDLE project.



HRIBF Software

Workhorses:

SCANOR, PACMAN and DAMM



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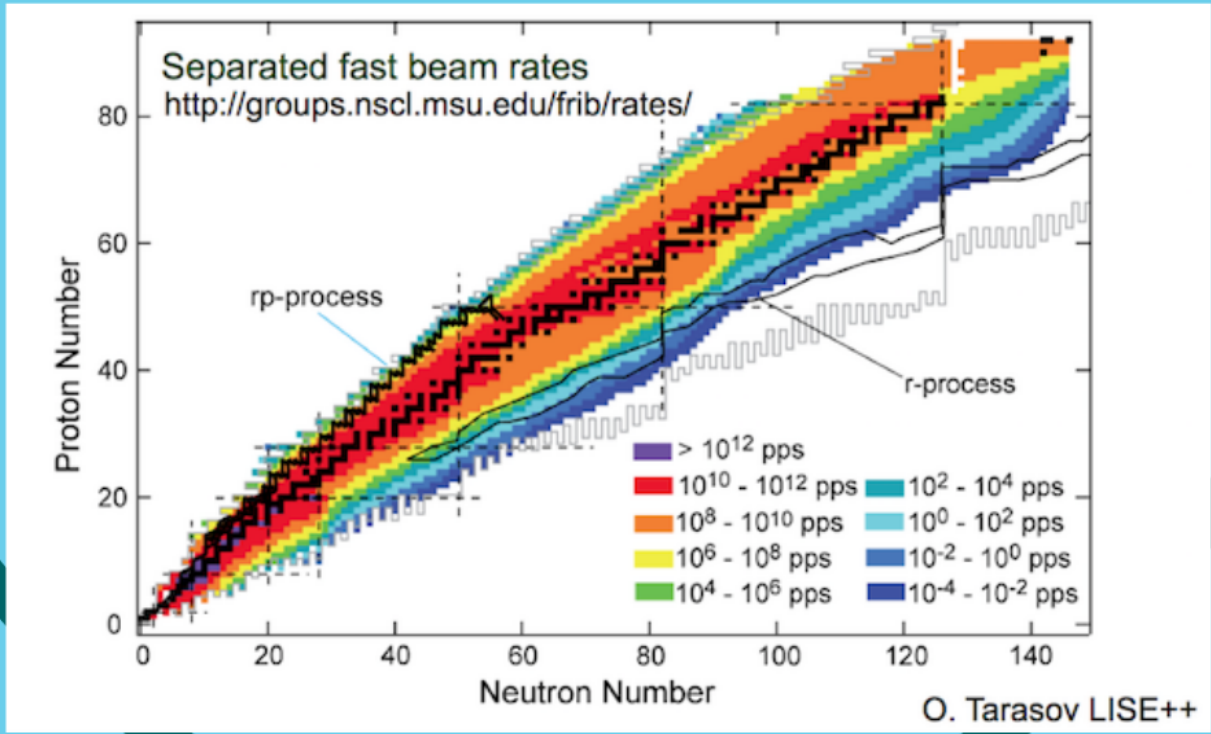
FRIB Era

Major Challenges:

Rates, Integration,Analysis

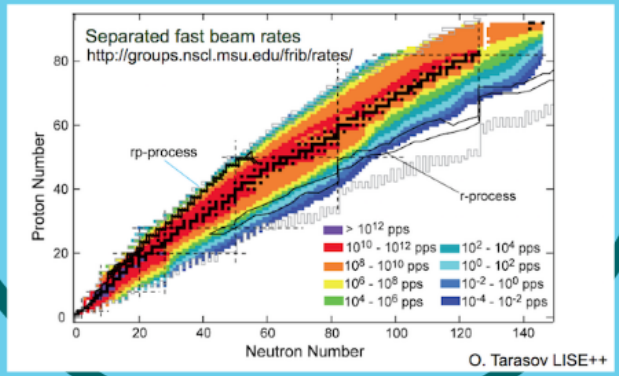


Users need to...

FRIB Era

Major Challenges:

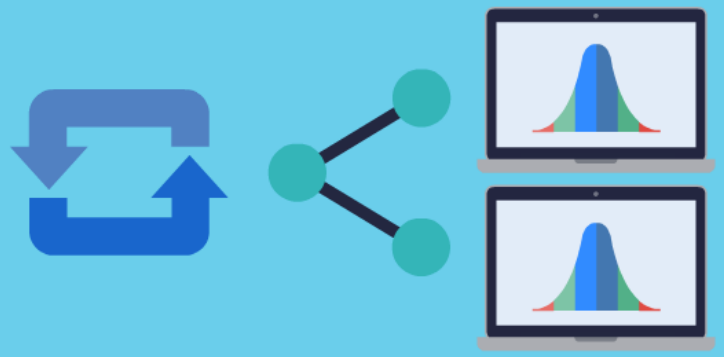
Rates, Integration,Analysis

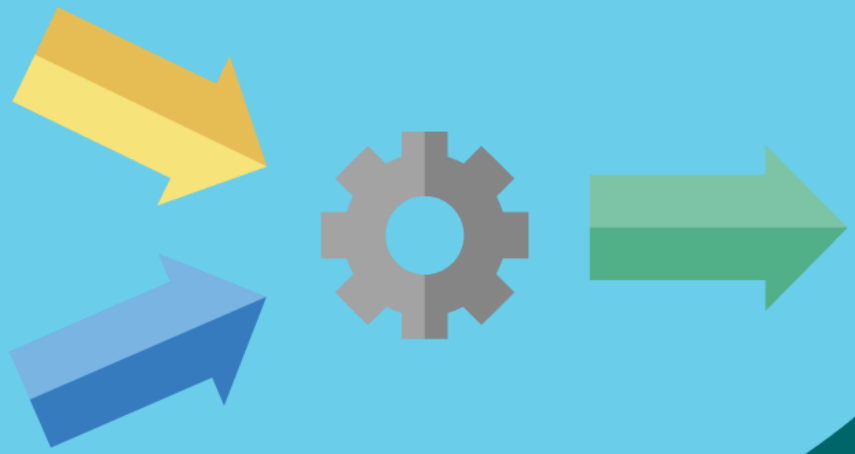


UTK DAQ/Analysis

Pixie Acquisition and Analysis Software Suite (PAASS)

Future Developments





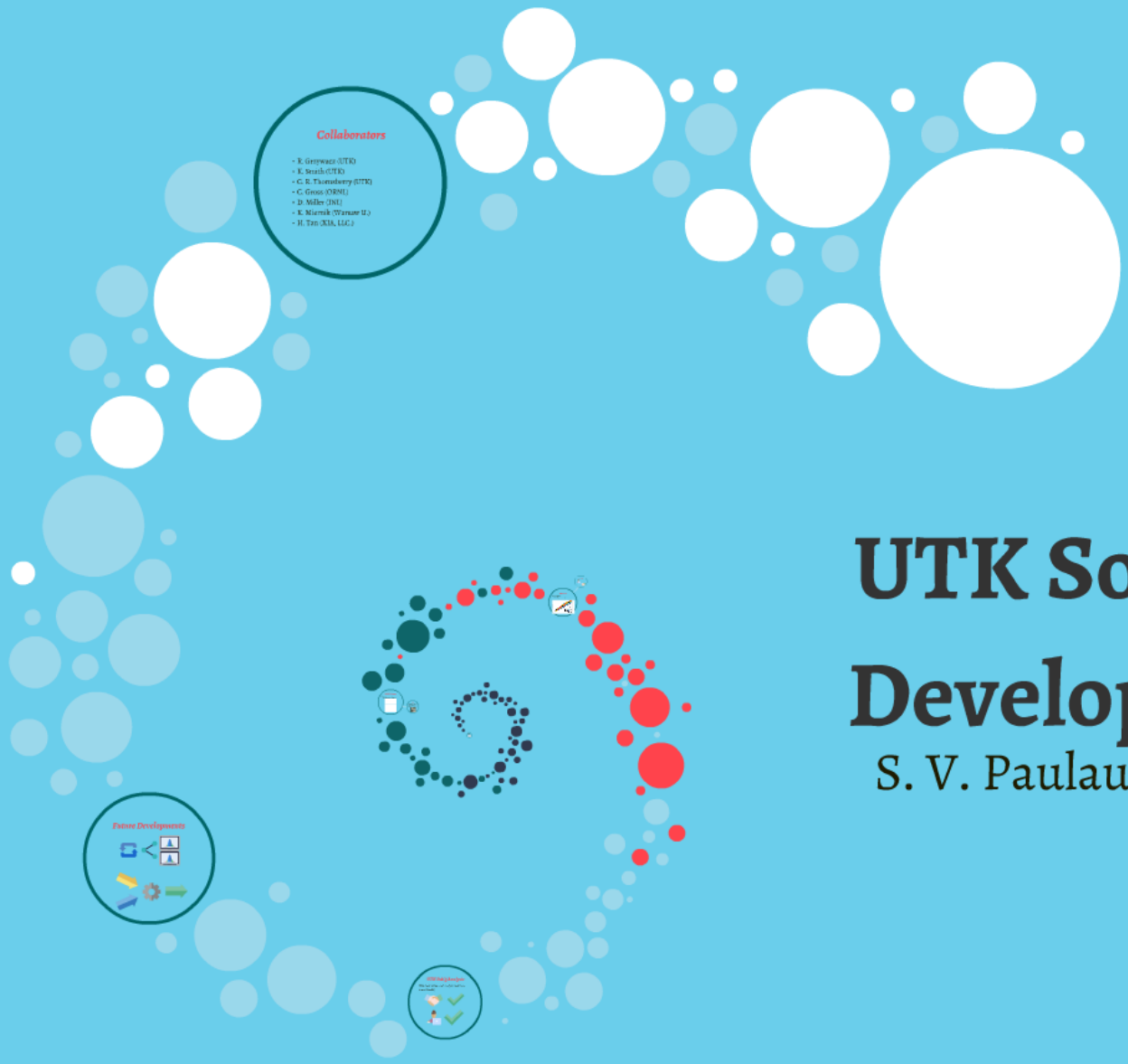
Future Developments

UTK DAQ/Analysis

Pixie Acquisition and Analysis Software Suite (PAASS)

Collaborators

- R. Grzywacz (UTK)
- K. Smith (UTK)
- C. R. Thornsberry (UTK)
- C. Gross (ORNL)
- D. Miller (INL)
- K. Miernik (Warsaw U.)
- H. Tan (XIA, LLC.)



UTK Software Developments

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