

Fortran@50

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Topics and Panelists

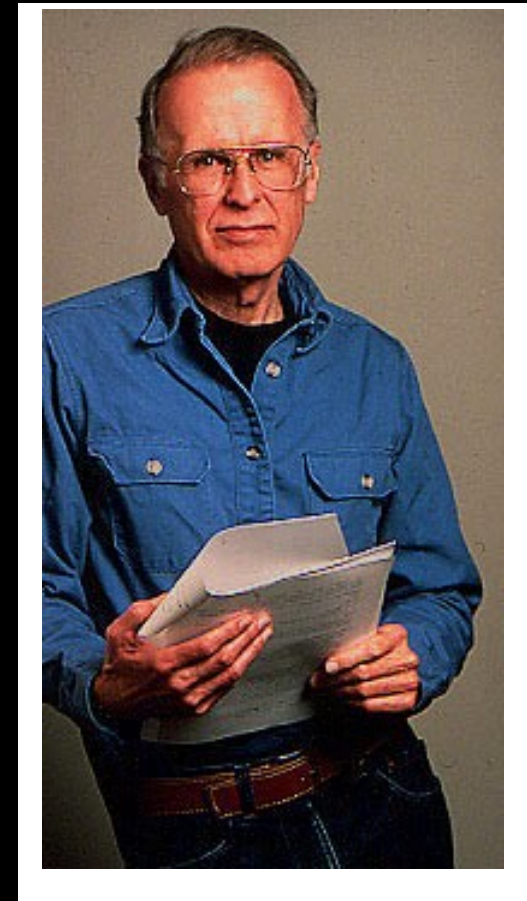
- Brief historical perspective: Fran Allen
- Fortran Compilers: David Padua
- Application / user viewpoint: Henry Tufo
- Architectural impacts of Fortran: John Levesque
- Future of Fortran: Richard Hanson

- Questions from audience: 15 minutes

“In the beginning there was Fortran.” Jim Gray

Fortran Project (1954-1957) Goals

- Increase user productivity
- "...produce programs almost as efficient as hand coded ones and do so on virtually every job."
(John Backus)



THE FORTRAN GOALS BECAME MY GOALS

The Fortran Language and Compiler

- Delivered April 15, 1957 for IBM 704
- Some compiler features:
 - ❖ Beginnings of formal parsing techniques
 - ❖ Intermediate language form for optimization
 - ❖ Control flow graphs
 - ❖ Common sub-expression elimination
 - ❖ Generalized register allocation - for only 3 registers!
- Spectacular object code!!

Typical mathematical formula:

$$D = B^2 - 4AC$$

Equivalent FORTRAN statement:

$$D = B**2 - 4*A*C$$