Workshop Logistics, *Etc.*

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Argonne Leadership Computing Facility

Argonne National Laboratory

ESP April Workshop – "Code for Q"

4/30/2012

Safety

- **Fire:**
  Go out main TCS entrance, walk directly away toward visitor's center
- **Tornado:**
  Go to the Conference Center restrooms

- **Emergency PA system**
- **Also outside sirens for tornado**

- Agenda
- Goals
- Logistics
- *Mira*
- Hardware
- VEAS

Agenda

Monday, April 30 - Day One

1:00 – 1:05	Welcome	Mike Papka, ALCF Director
1:05 – 1:15	Workshop Logistics, Mira deployment schedule	Tim Williams
1:15 – 2:00	BG/Q Hardware, Performance, Compilers Part 1	Kalyan Kumaran
2:00 – 2:30	BG/Q Hardware, Performance, Compilers Part 2	Vitali Morozov
2:30 – 2:45	Debuggers	Ray Loy
2:45 – 3:00	OpenMP	Tim Williams
3:00 – 3:30	Break	
3:30 – 4:00	Communication layers	Jeff Hammond
4:00 – 4:30	Performance Tools	Scott Parker
4:30 – 5:00	VEAS: file system, Cobalt, libraries	William Scullin

Tuesday-Wednesday May 1-2 – Days Two and Three

9:30 – 12:00	Tools and Libraries mini-presentations and hands-on	Various
12:00 – 1:00	Working Lunch – compilation troubleshooting	
1:00 – 3:00	Tools and Libraries mini-presentations and hands-on	Various
3:00 – 3:30	Break	
3:30 – 5:00	Hands-on	

http://www.alcf.anl.gov/esp-workshop-april-2012

Tools & Libraries Mini-Presentations

Tuesday May 1 – Day Two

Time	Subject	Presenter
10:00 – 10:15	PAPI	Heike Jagode, *University of Tennessee Knoxville*
11:00 – 11:15	Tau	Wyatt Spear, *University of Oregon*
1:15 – 1:30	HPCToolkit	Mark Krentel, *Rice University*
2:15 –	Open|SpeedShop	James Galarowicz, *Krell Institute*

Wednesday May 2 – Day Three

Time	Subject	Presenter
10:00 –	Scalasca	Wolfgang Frings, *Jülich Supercomputing Center*
1:15 – 1:30	LLVM Compilers	Hal Finkel, *ANL*

Workshop Goals

- **Understanding of BG/Q hardware**
- **Survey of BG/Q compilers, libraries, tools**
- **Learn from optimization examples**
- **Get help from ALCF and Tools/Libraries teams**
- **Work on early BG/Q hardware**
  - Get codes on VEAS
  - Compile dependencies (including some Tools/Libraries projects)
  - Compile code
  - Run tests
  - Benchmark
  - Analyze performance
  - Engage BG/Q features such as increased thread parallelism

Who's Here?

- **Representatives of 11 of 16 Early Science Program projects**
  - Work toward Early Science run campaigns on Mira
- **Representatives of Tools & Libraries project teams**
  - Port tools and libraries to BG/Q
  - Help ESP developers use tools and libraries
- **ALCF Staff**
  - Help everybody with everything

Logistics

- **People**
  - Joan Stover – gate pass, Guest House, shuttle, registration, conference rooms
  - ALCF Staff – yellow badges
    - Staff info page (PDF)
  - Lalitha Mantrala, Robert Scott – Cryptocards, login problems
- **Workshop physical amenities**
  - Flip chart at back of room
    - Questions
    - Requests for special topic discussions
    - Arrange private conferences
    - Find an expert on ….
  - Smaller rooms in B240 reserved for use
  - Shuttle to Guest House
    - Wednesday afternoon: *no shuttle*
      - Arrange departure from TCS

Wifi

ANLTCSG-guest *-or-* ANLTCSA-guest

One-time acknowledgement web page

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What is the duration of this reservation?	( ) Today only. (•) This week only. ( ) A month. ( ) A year.

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October 31, 2000

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Evolving timeline for Mira availability

ESP access to Mira likely soon

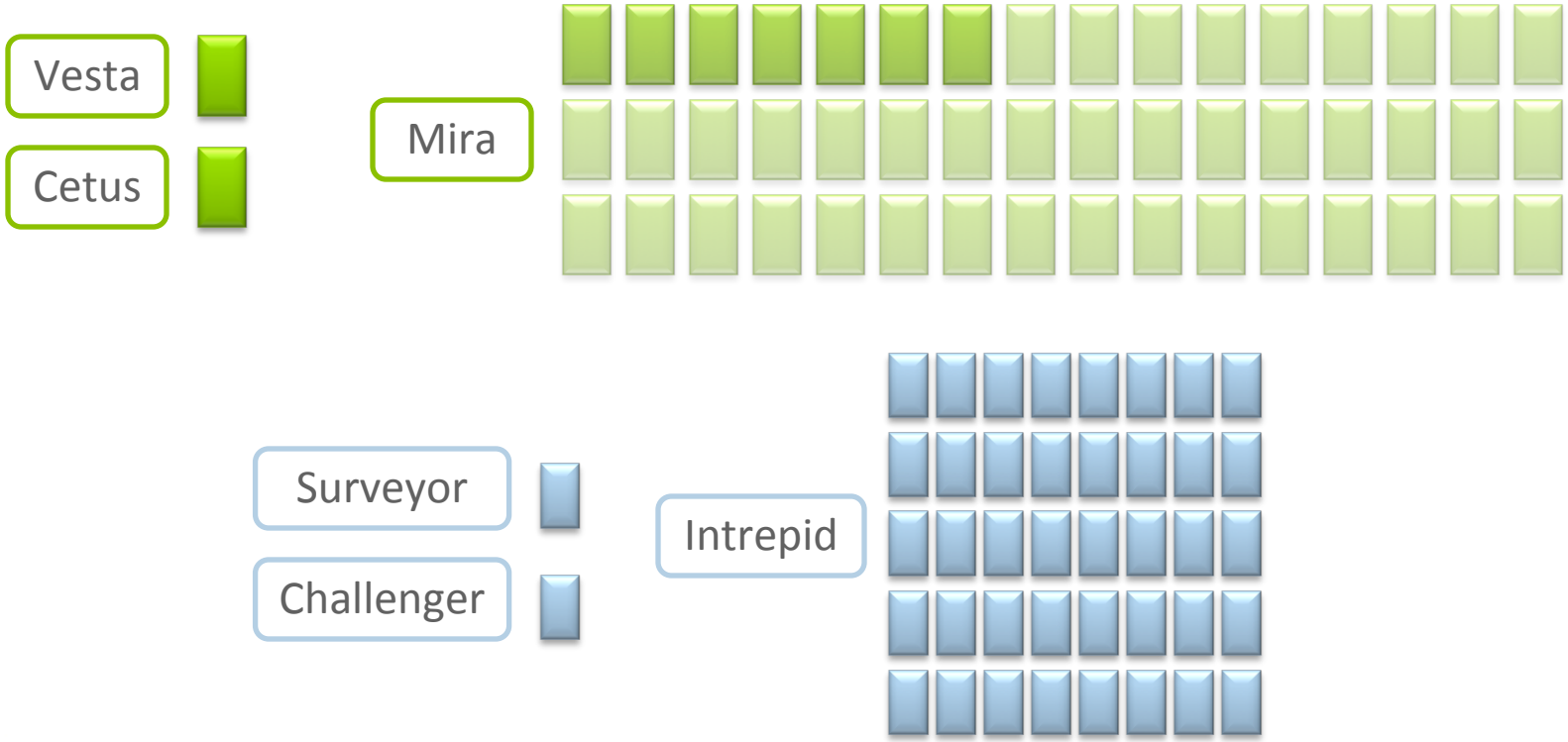
- **ESP projects *may* have access to Mira as early as summer 2012**
- **Time for Early Science runs is likely to be earlier than expected**
  - Possibly second half of CY2012
- **Get on the T&D *now***
  - ESP is currently a top priority but there are many pressures on the hardware
  - Important for INCITE proposal preparation, especially computational readiness on BG/Q

Plan for a 2013 INCITE proposal on Mira

- **Mira is committed to go live for INCITE on October 1, 2013 with 768M core-hours for allocation**
- **Start date of production INCITE time is likely to happen earlier in CY 2013**
- **Guidance for INCITE 2013**
  - Propose science based on a 3B core-hour pool, 100-300M per project
  - 2013 INCITE Allocation scenarios

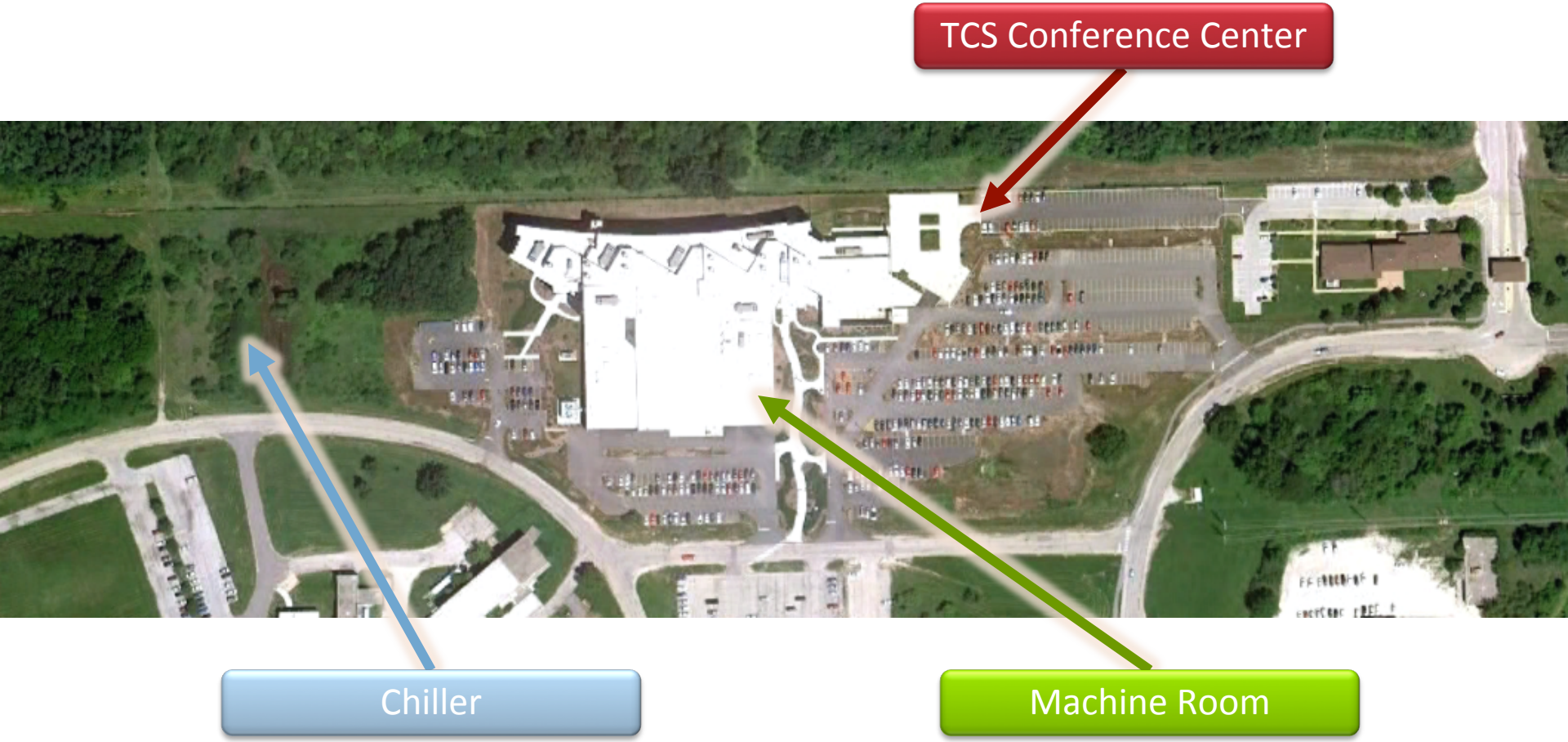
Actual Q Hardware

- **First two racks delivered 1/14/2012**
- **Test & Development (T&D) machines**
  - One rack: Very Early Access System (VEAS)
- **Six *Mira* racks delivered**



Actual Photos of Actual Hardware

Big Picture



Water Chiller Plant

Water Chiller Plant

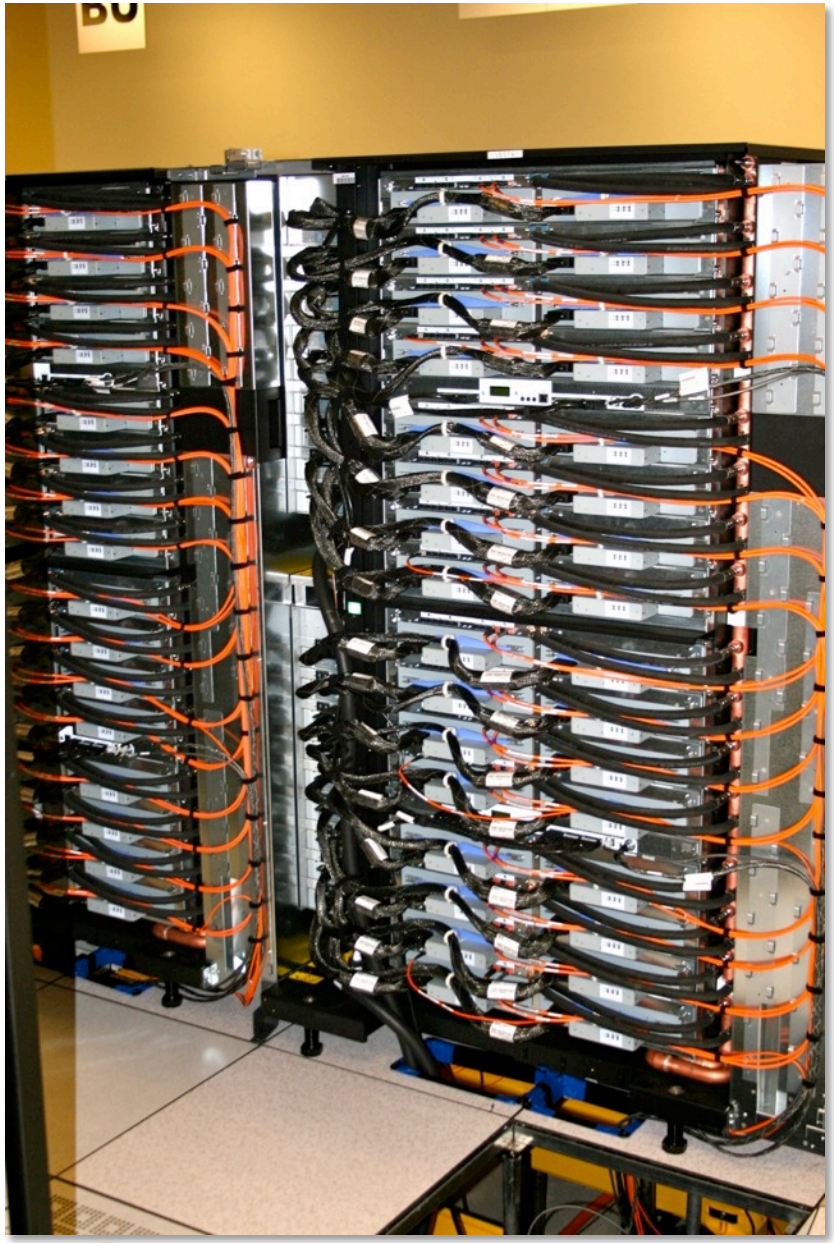
Water

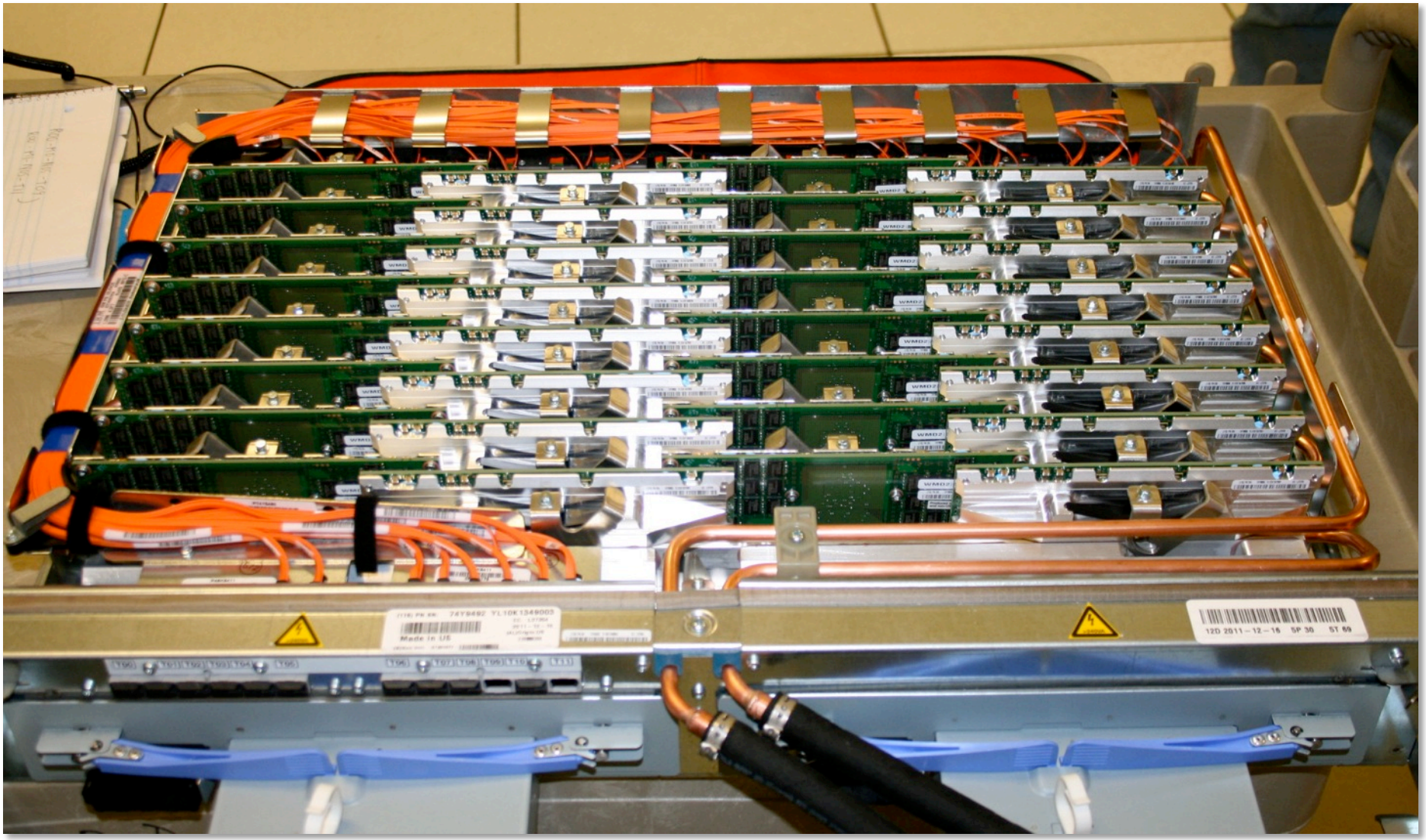
Water

BGO COOLING
RETURN
BGO COOLING
SUPPLY
CHW
RETURN
CHW
SUPPLY

Machine Room – “The Core”

Vesta & Cetus




Made in US

DataDirect

BU
IBM
Blue Gene/Q supercomputer

Mira Racks

Mira Racks

VEAS – Very Early Access System

Help With Using VEAS

- **Wiki**
  - https://wiki.alcf.anl.gov/bgq-earlyaccess
- **early-users-discuss@alcf.anl.gov**
  - Help thy brethren
  - Continues through early Mira use
- **td-support@alcf.anl.gov**
  - Hardware/system problems

There will be hardware and system problems.