

# Nanoscience Opportunities for the High Tech Industry

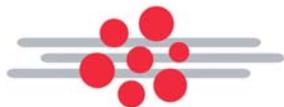
November 13, 2007

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## The Center for Functional Nanomaterials: A User-oriented Research Center

Emilio Mendez



Center for Functional Nanomaterials  
Brookhaven National Laboratory



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# Nanoscience Opportunities for the High Tech Industry

November 13, 2007

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## Workshop's Goal

that its participants

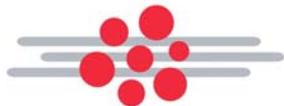
- learn about the CFN's research program and its advanced instruments;
- establish links with the CFN's technical staff to solve nanotech problems;
- tell us how the CFN and BNL can help the nanotech industry.

## Program

Morning: Nanoscience at the CFN (facilities/research, the Users' Program  
The view from the industry (nanotech firms, venture capital)

Afternoon: Tour of the CFN facilities  
Small-group meetings with CFN staff  
General discussion and participants' feedback

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# The DOE's Nanoscience Research Centers

**Center for Nanoscale Materials**  
Argonne National Laboratory



**Molecular Foundry**  
Lawrence Berkeley  
National Laboratory



**Center for Functional  
Nanomaterials**  
Brookhaven National Laboratory



**Center for Integrated Nanotechnologies**  
Los Alamos National Laboratory and  
Sandia National Laboratory

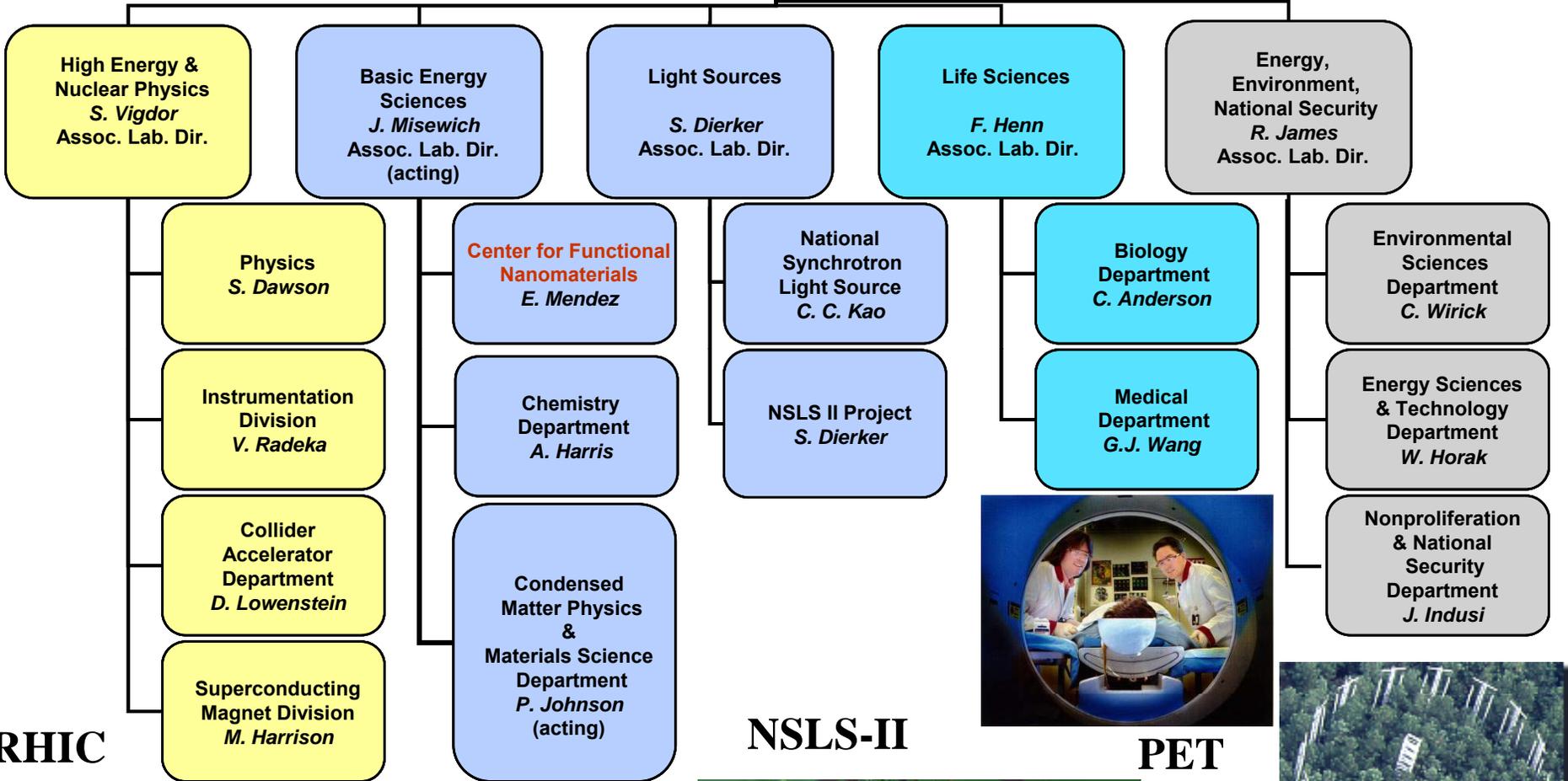


**Center for Nanophase Materials Sciences**  
Oak Ridge National Laboratory



# BNL Organization

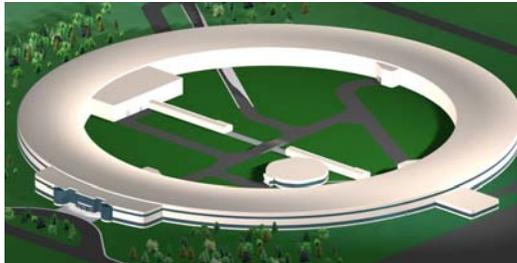
**Brookhaven National Laboratory**  
*S. Aronson, Director*  
*D. Gibbs, Deputy Director*



**RHIC**



**NSLS-II**

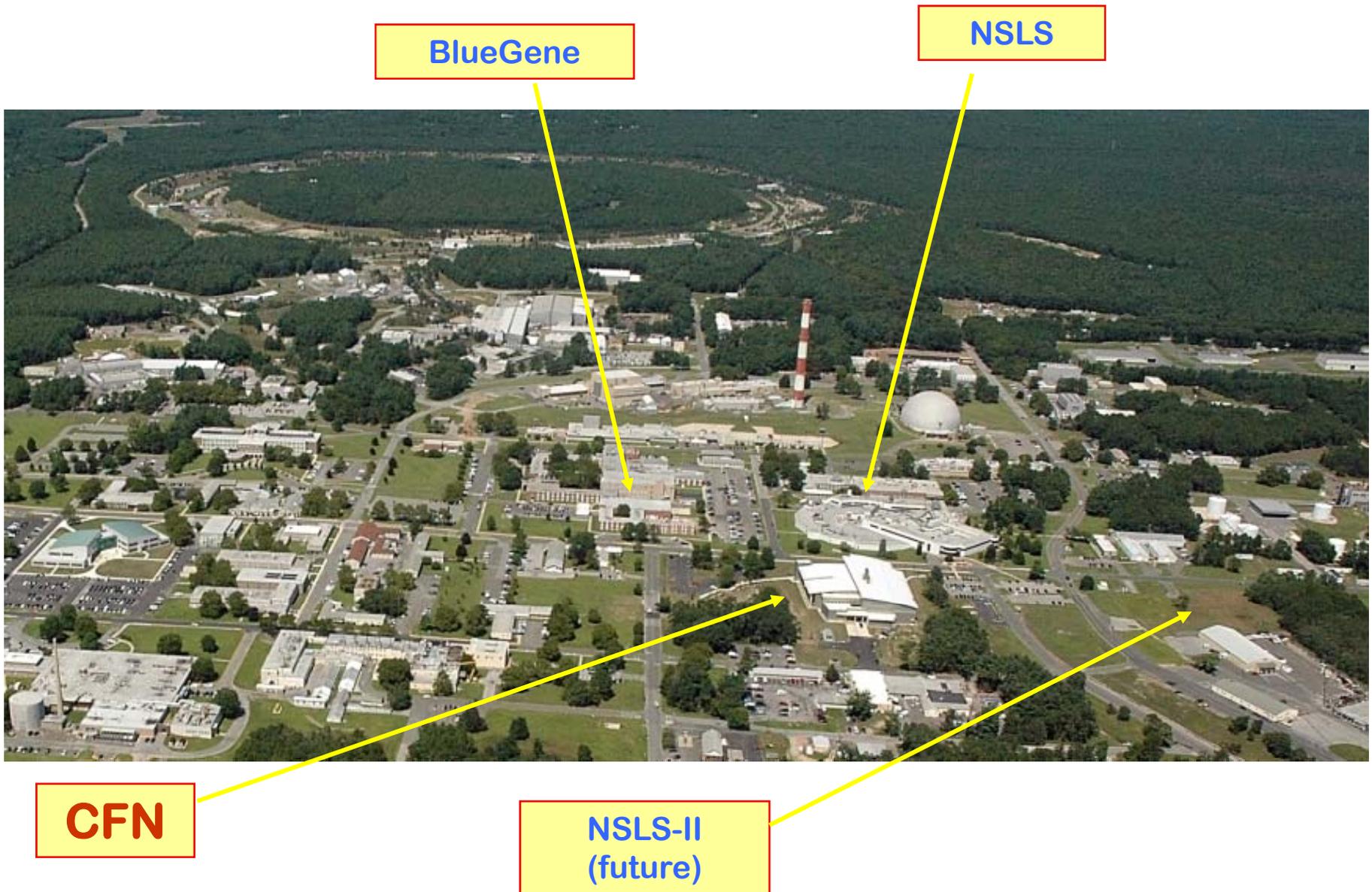


**PET**



**FACE**

# Major Facilities for Nanoscience at BNL



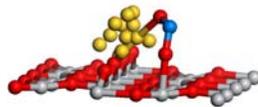
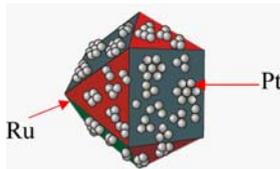
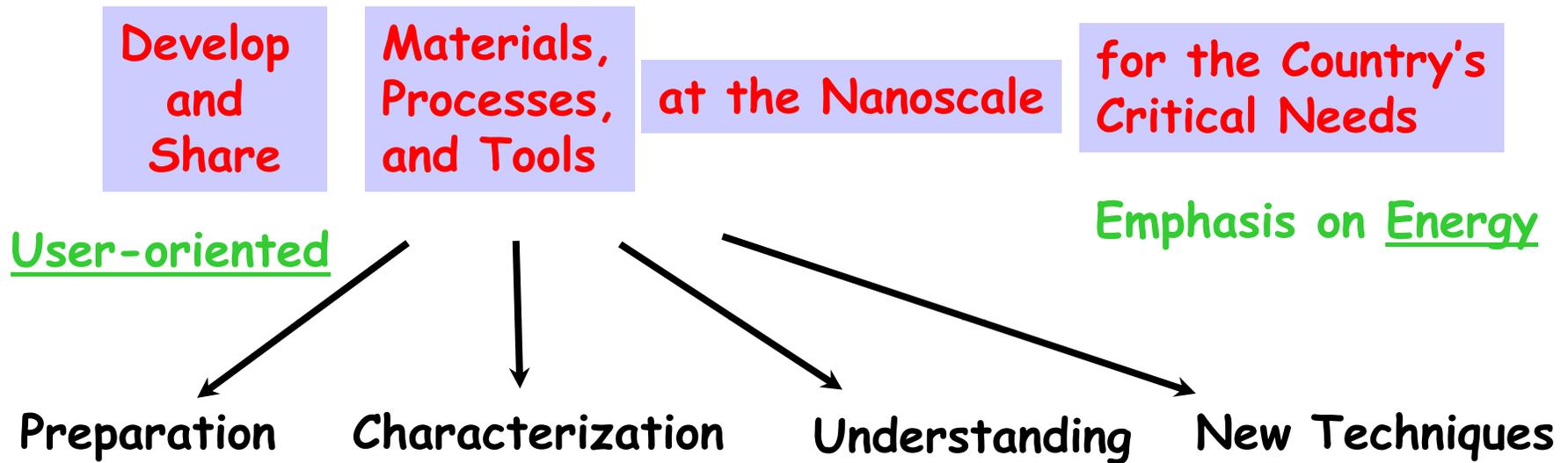
BlueGene

NSLS

CFN

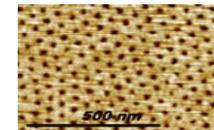
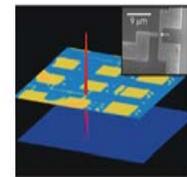
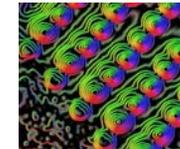
NSLS-II  
(future)

# The CFN Mission



## Themes

- Electronic Nanomaterials
- Soft/Bio Nanomaterials
- Nanocatalysis/Interfaces

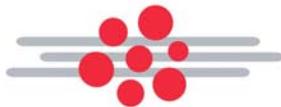
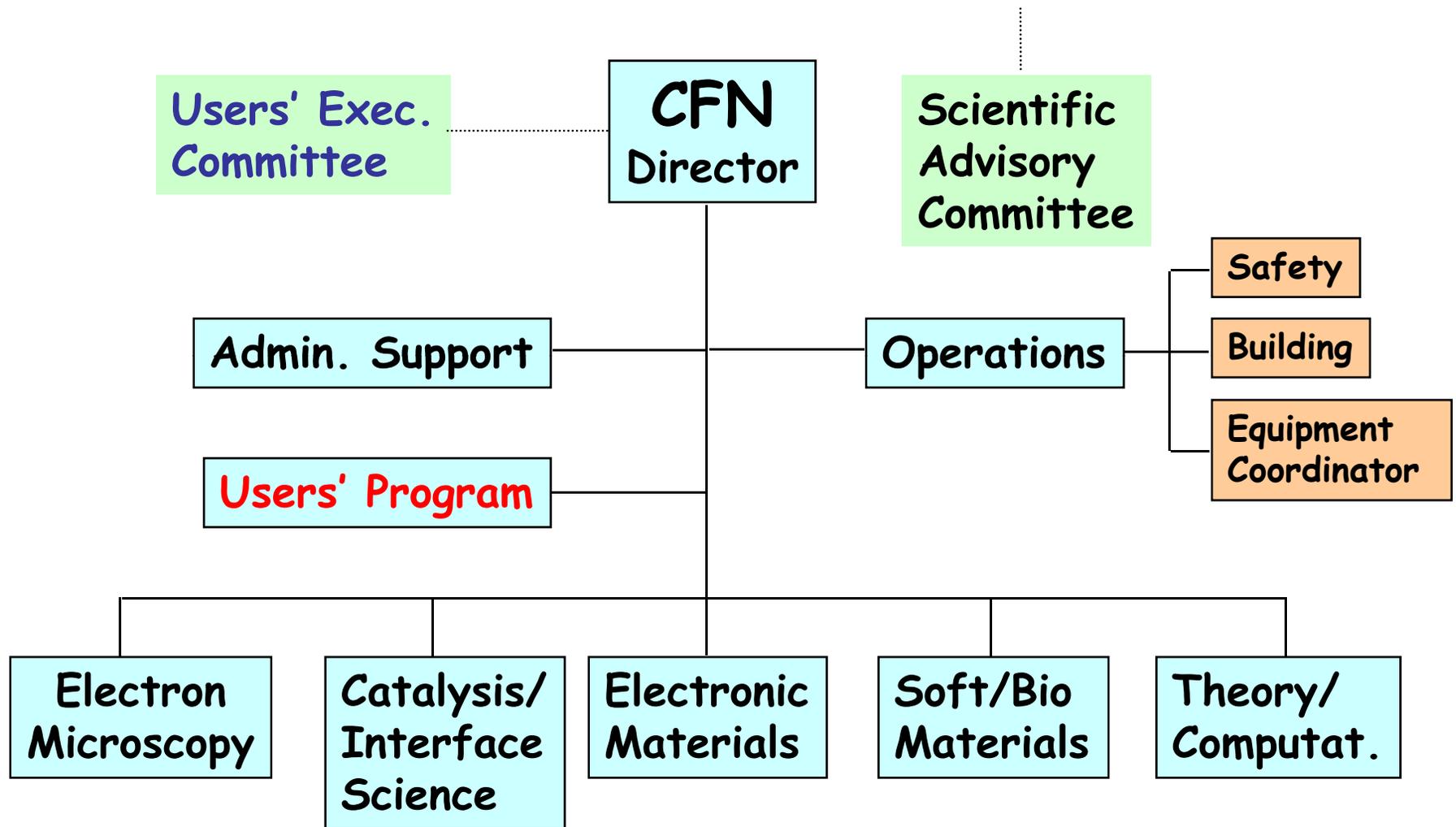


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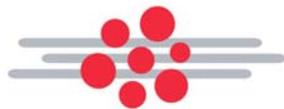
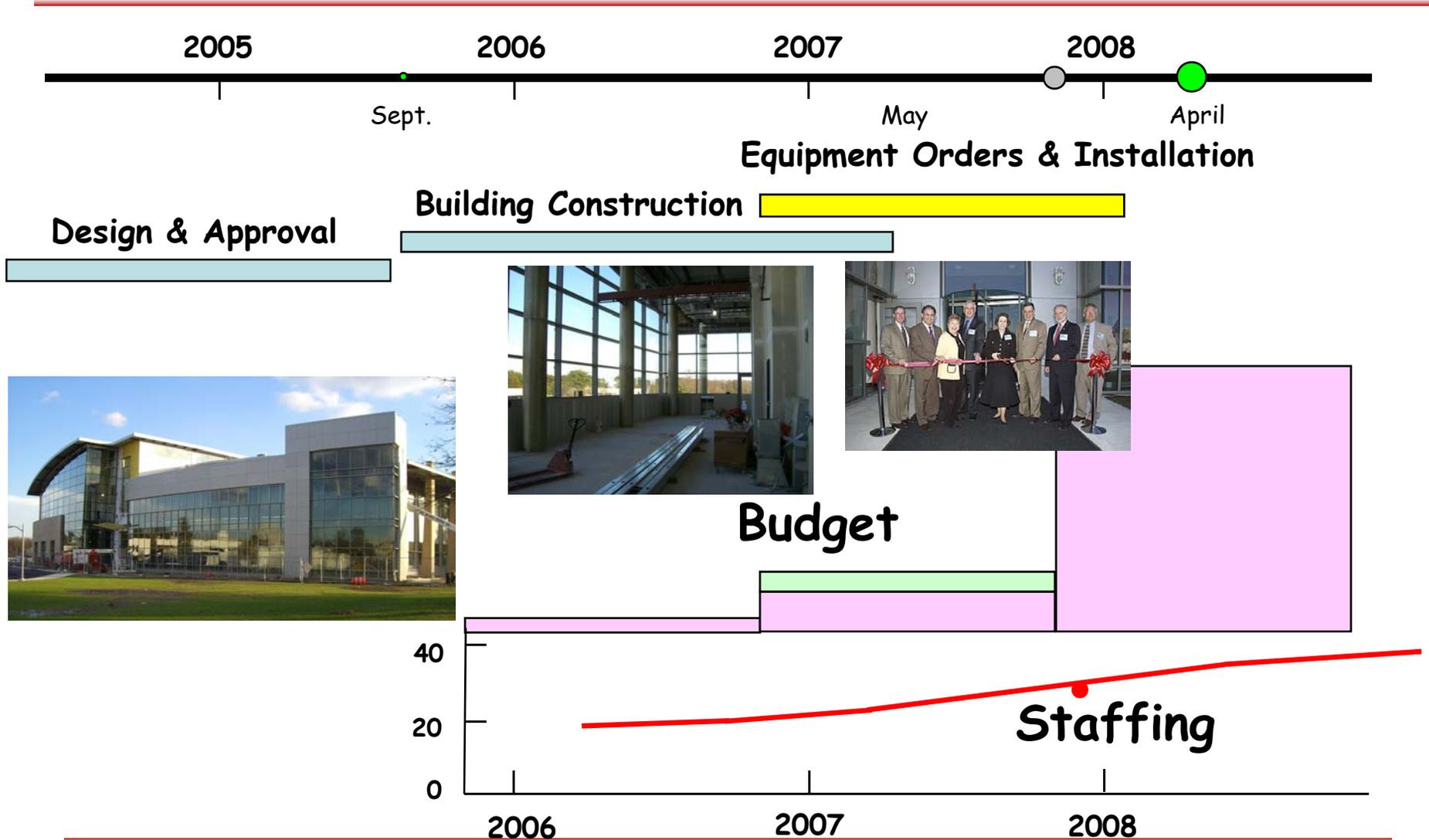


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# Organization



# The Center for Functional Nanomaterials



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# A Year Ago, and Six Months Later

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## Nanofabrication

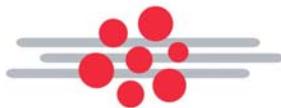


November 2006



April 2007

## Open-office Area



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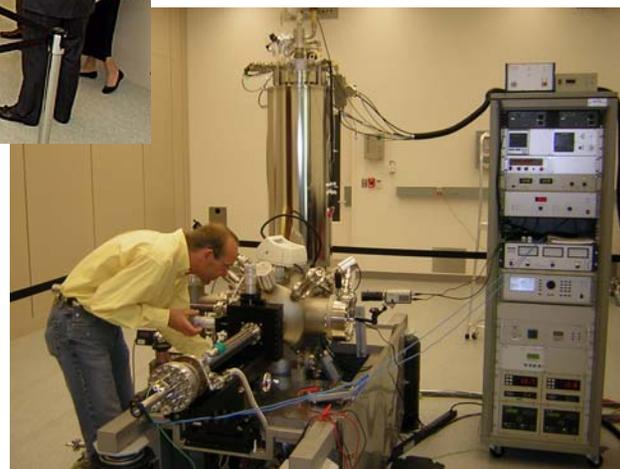
# Surface Science Laboratory

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April 07



May 07



June 07



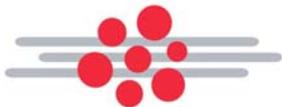
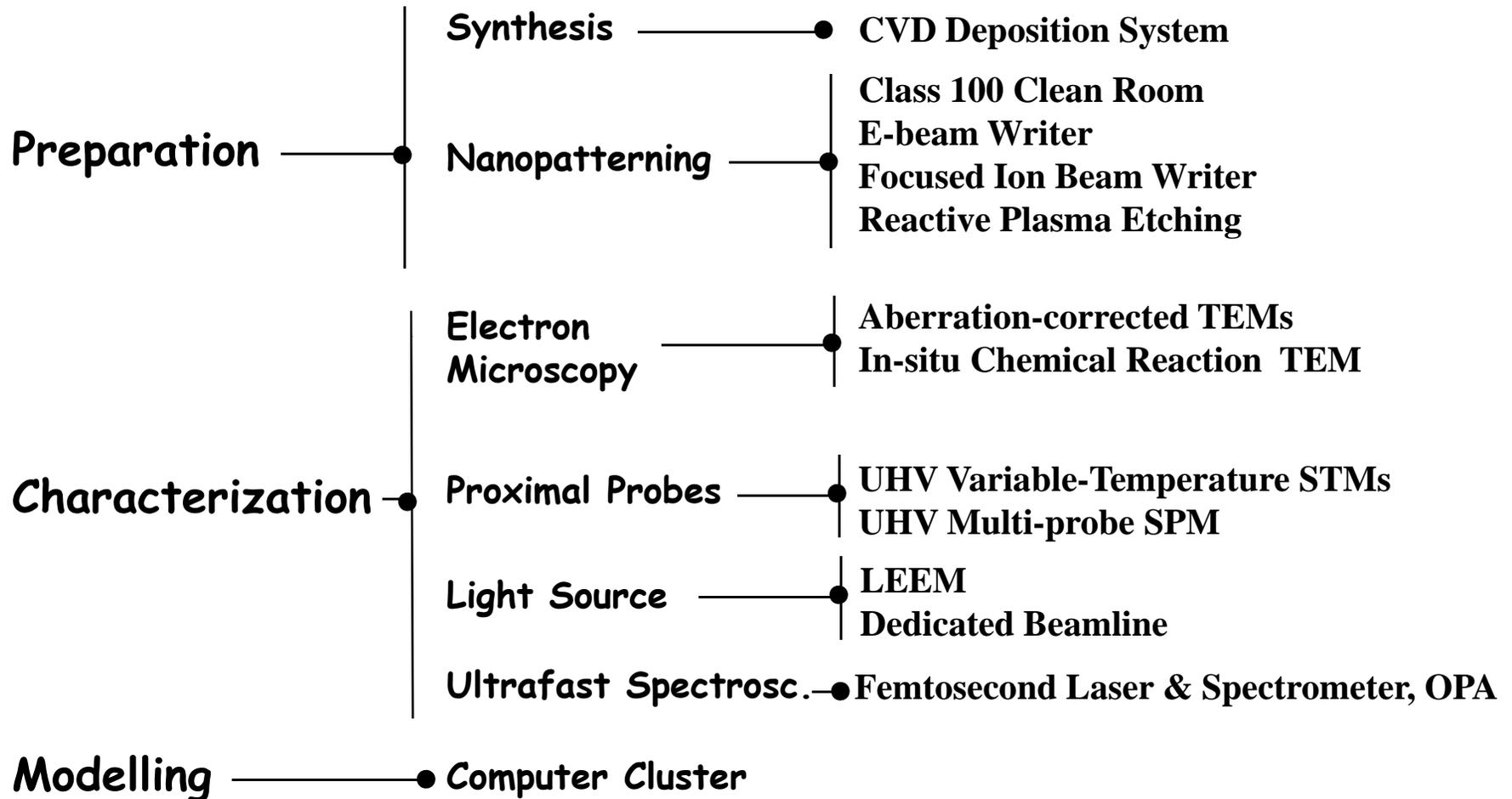
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# Major Facilities

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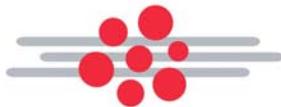
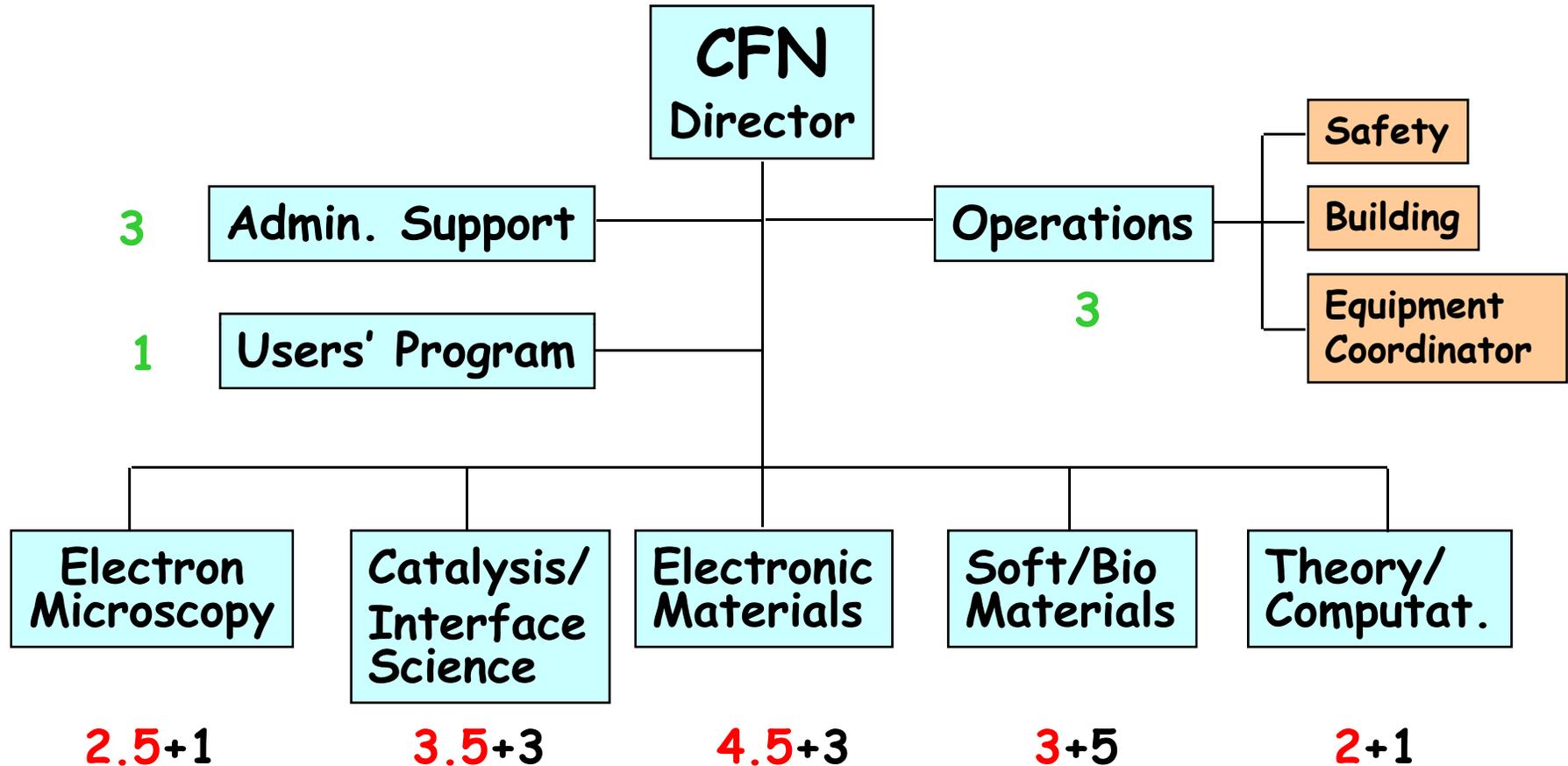
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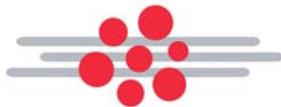
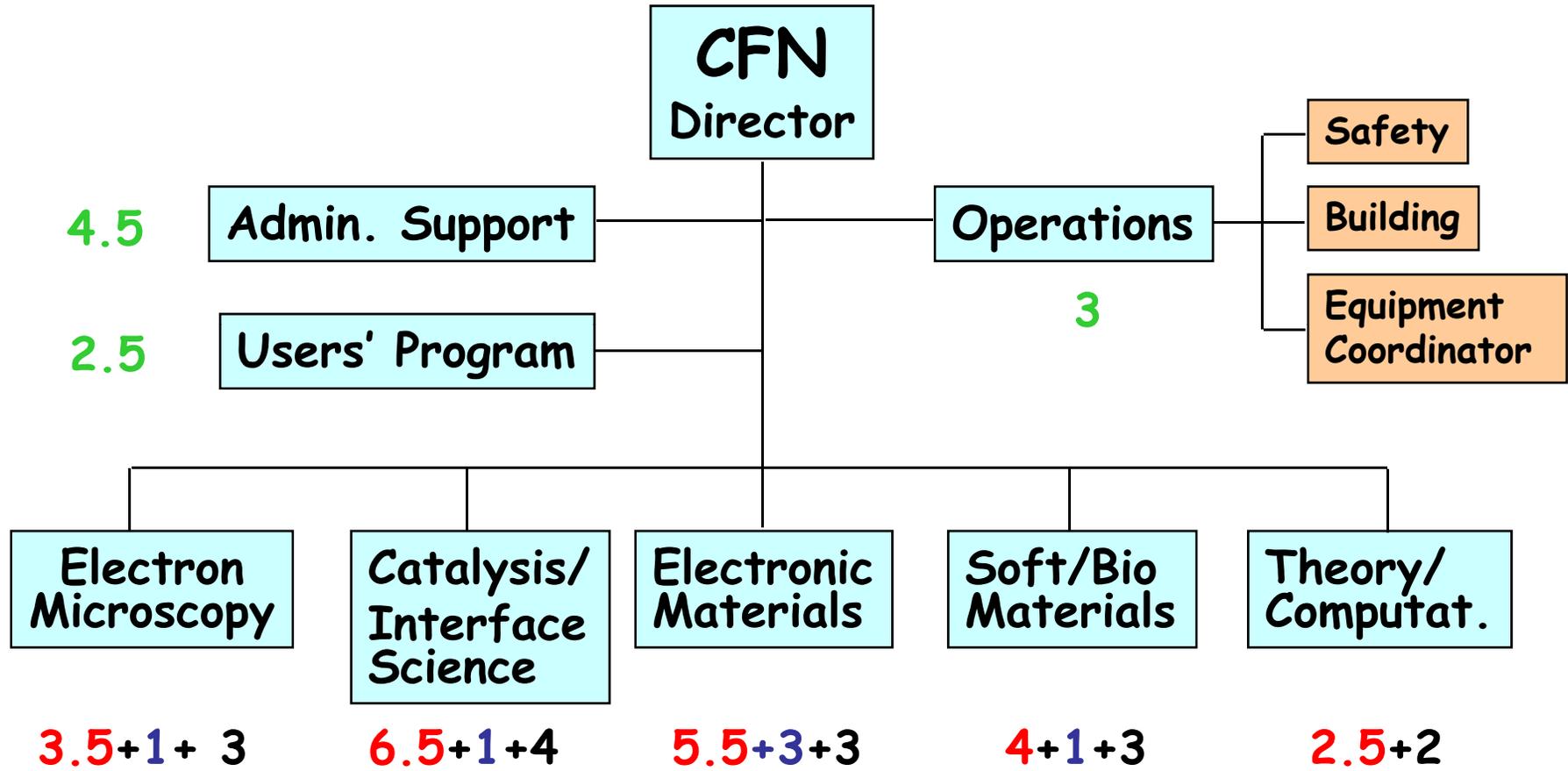
# Current Staff

$$7 + 16.5 + 0 + 13$$



# (Estimated) Staff, End of FY 2008

$$10 + 23 + 6 + 15$$



## Who Is a User of the CFN?

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Someone outside the CFN whose research proposal is peer-reviewed favorably and ...

- Performs a **standard measurement** or process in a CFN facility, typically for **one or two days**, and interacts mostly with professional or technical staff.
- Performs a **complex experiment** that requires elaborate preparation and **lasts one to two weeks** (possibly repeated), and interacts with technical and scientific staff.
- Performs **complex experiment during long period** (e.g., summer or sabbatical) and interacts extensively with scientific staff.
- **Collaborates with scientific staff in joint scientific project** that uses the CFN facilities as well as complementary facilities in home institution.



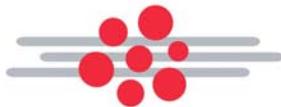
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**It is our mission to help you**

Let us tell you who we are  
and do tell us how can we do it



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