EARTH & ENVIRONMENTAL SCIENCES WORKSHOP

Synergy

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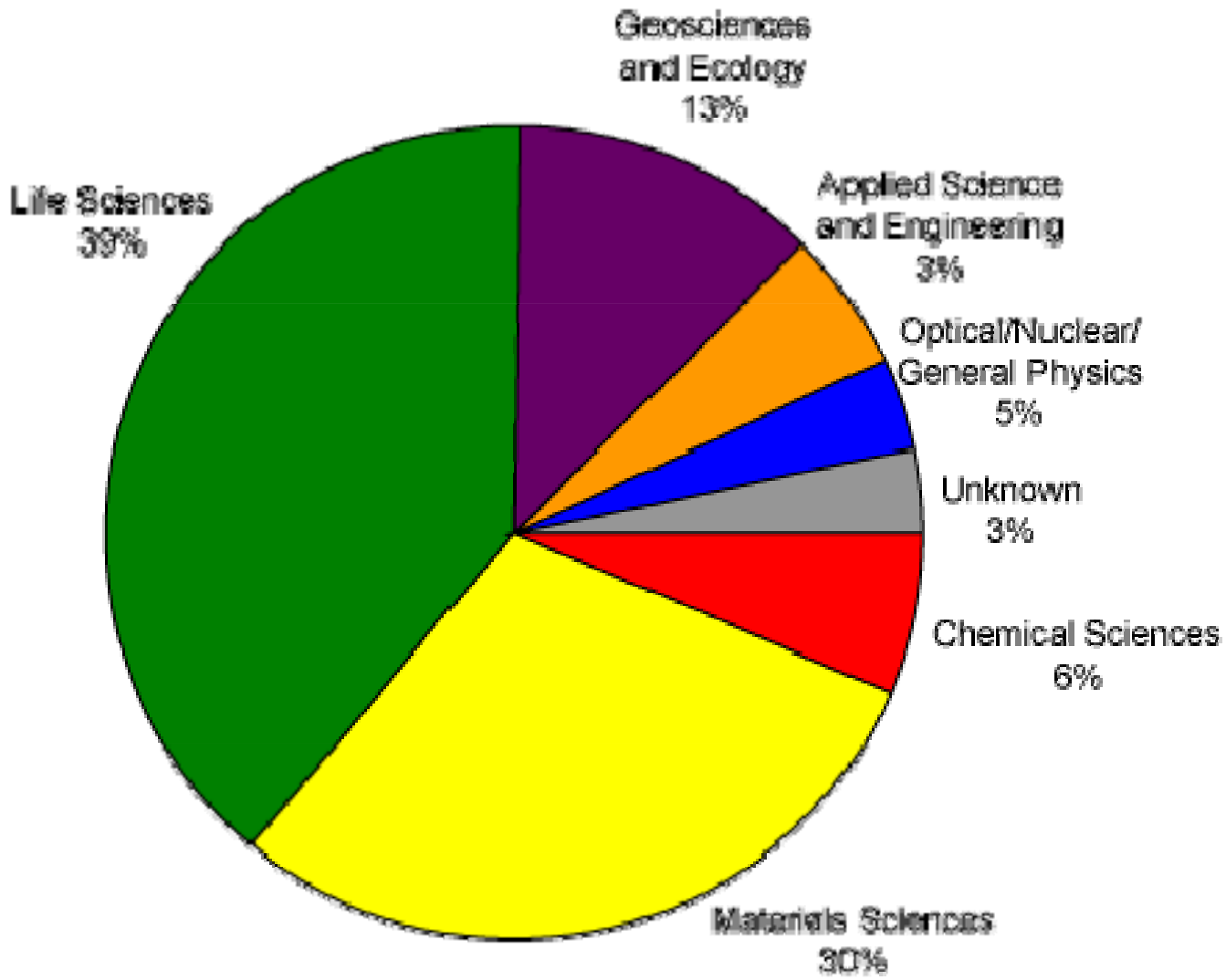
BNL-NSLS

Scientific Strategic Planning Workshops

Workshop	Dates
Life Sciences	Jan. 15-16
Materials Science and Engineering	Jan. 17-18
Earth and Environmental Sciences	Jan. 22-23
Chemical and Energy Sciences	Feb. 1
Hard Condensed Matter and Materials Physics	Feb. 5-6
Soft and Biomolecular Materials	Feb. 11-12

2007 NSLS User Distribution



Building a Life and environmental Sciences Village Environment

Multidisciplinary Research

- Include related synchrotron disciplines: enviro, soft matter, biophysics
- Include non-synchrotron techniques: Vertically integrated research laboratory with facilities for cell growth, macromolecule purification, crystal growth, and characterization by other methods than light-based ones – NMR, mass spectrometry, and electron microscopy.

Building a Life and environmental Sciences Village Environment

Adjacent Sectors and a Laboratory-Office Building (LOB)

- Align life and environmental sciences beamlines on adjacent sectors for strong scientific interactions
- Identify funding and construct a laboratory-office building (LOB) for life and environmental sciences staff and users

Building a Life Sciences Village Environment

Structural Biology & Imaging Research Center

Something like the Partnership for Structural Biology at ESRF

http://psb.esrf.fr/

Building a Life and environmental Sciences Village Environment

Development Research

- Create long-term funding for personnel in Joint Photon Science Institute (J-PSI) building.
- Could improve x-ray detectors, x-ray optical systems, and automated systems for specimen manipulation.

Synergy

- Beamlines
  - Not every community needs 100% beam time
  - Share techniques or share scientific interests?
- Sample environment (working group?)
  - High pressure, in situ reactions, cryogenic
- Laboratory space
- Funding?

Suites of Beamlines

Earth & Environmental Sciences	Life Sciences
4 XRF microprobe	3 XRF microprobe
4 XAS	2 XAS
1 STXM + CDI	1 STXM; 1 CDI
3 IR	3 IR
1 SAXS/WAXS	1 SAXS/WAXS
4 XRD	
3 IXS	
	1 TXM
	1 CD
	1 FP
	1 DEI / MRT
	5 MX

- 3-pole Wiggler
- Damping Wiggler
- Undulator
- SC Wiggler
- Bending magnet

Laboratory Facilities

Life Sciences Facilities:

- Cryogenic sample prep
- Sample manipulation
- Microscope room
- Cell culture
- Crystallization
- Spectroscopy room
- Dishwasher, autoclaves
- Cold room, hoods, etc.