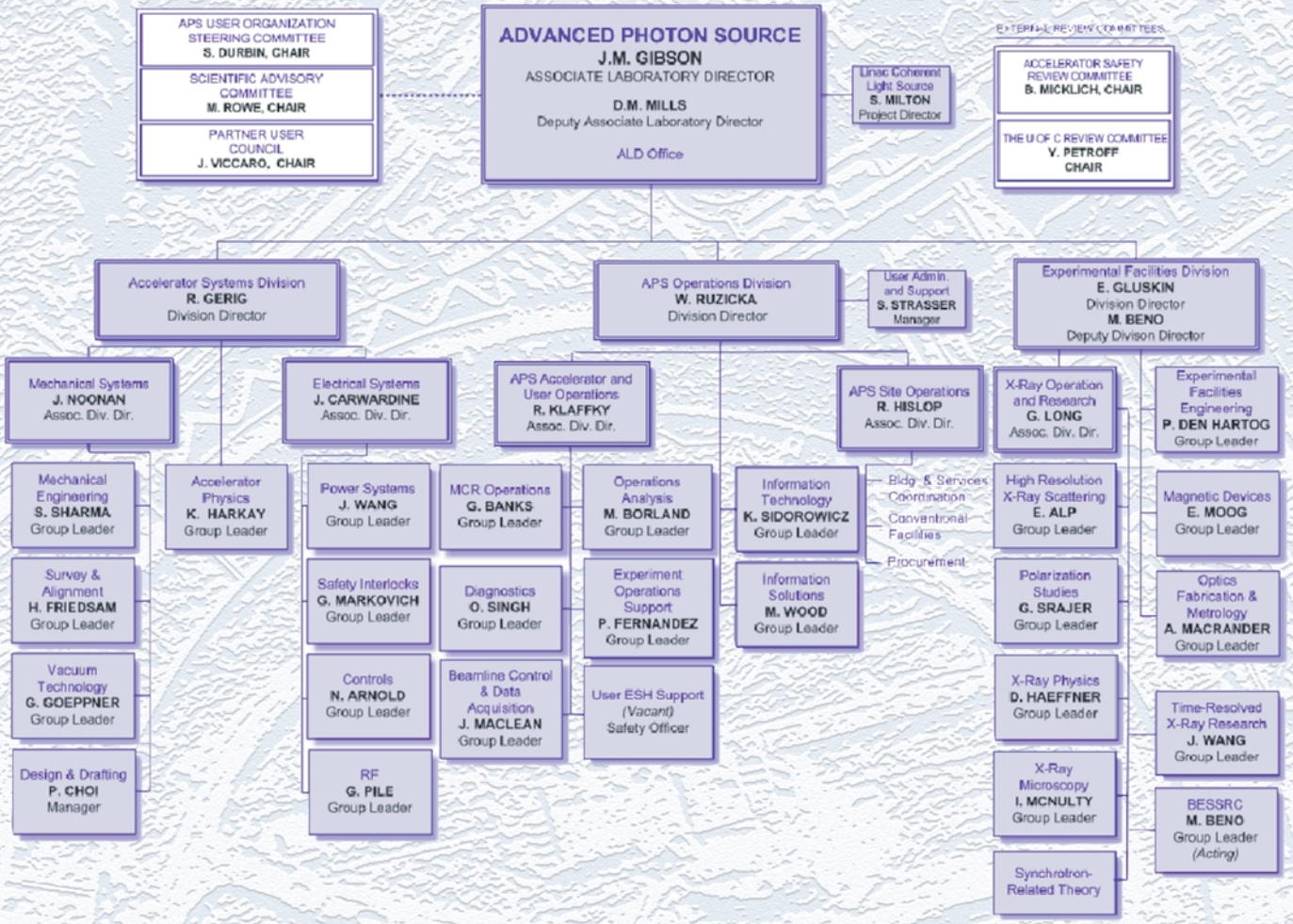
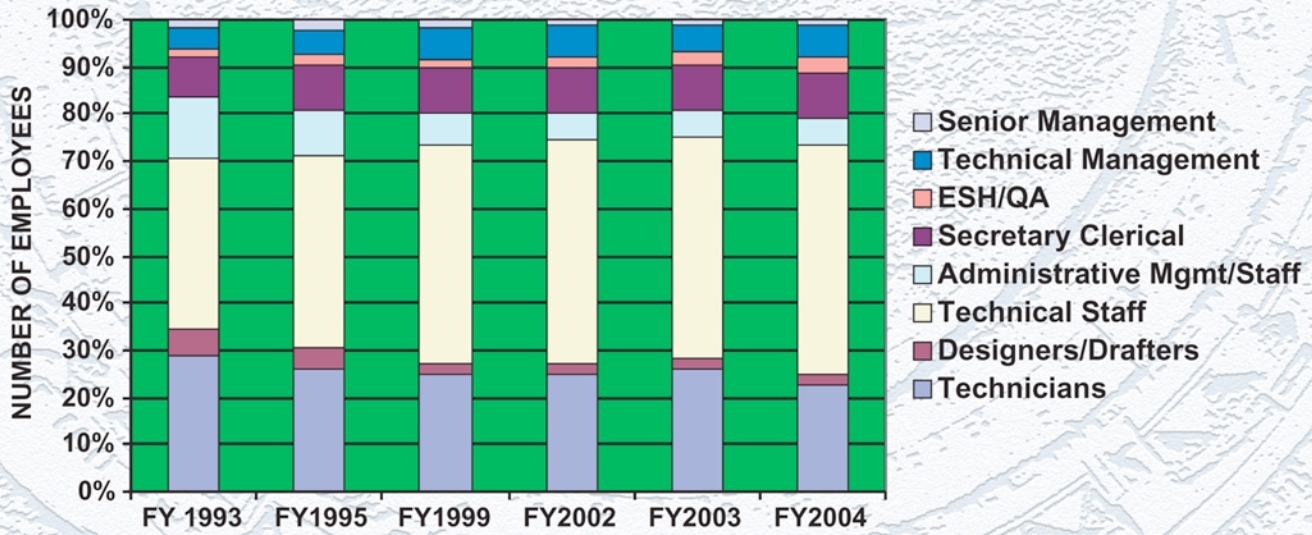
APS Organization
(3.31.04)



APS Staffing Profile



APS Source Parameters

Undulator A
Period: 3.30 cm
Length: 2.4 m
K_{max}: 2.74 (effective; at minimum gap)
Minimum gap: 10.5 mm
Tuning range: 3.0-13.0 keV (1st harmonic)
3.0-45.0 keV (1st-5th harmonic)
On-axis peak brilliance:
4.6 x 10^{19} ph/s/mrad^2/mm^2/0.1%bw at 7 keV
Source size and divergence at 8.0 keV:
Σ_x: 273 µm Σ_y: 10 µm
$\Sigma_{x'}$: 12.6 µrad $\Sigma_{y'}$: 6.6 µrad

2.70-cm Undulator (sector 3)
Period: 2.70 cm
Length: 2.4 m
K_{max}: 2.18 (effective; at minimum gap)
Minimum gap: 8.5 mm
Tuning range: 5.1-16.0 keV (1st harmonic)
5.1-60.0 keV (1st-5th harmonic)
On-axis peak brilliance:
6.4 x 10^{19} ph/s/mrad^2/mm^2/0.1%bw at 8 keV
Source size and divergence at 8.0 keV:
Σ_x: 273 µm Σ_y: 10 µm
$\Sigma_{x'}$: 12.6 µrad $\Sigma_{y'}$: 6.6 µrad

5.50-cm Undulator (sector 2)
Period length: 5.50 cm
Length: 2.4 m
K_{max}: 6.57 (effective; at minimum gap)
Minimum gap: 10.5 mm
Tuning range: 0.4-7.0 keV (1st harmonic)
0.4-25.0 keV (1st-5th harmonic)
On-axis peak brilliance:
1.9 x 10^{19} ph/s/mrad^2/mm^2/0.1%bw at 4 keV
Source size and divergence at 4.0 keV:
Σ_x: 273 µm Σ_y: 10 µm
$\Sigma_{x'}$: 13.8 µrad $\Sigma_{y'}$: 8.7µrad

APS Bending Magnet
Critical energy: 19.51 keV
Energy range: 1-100 keV
On-axis peak brilliance:
5.6 x 10^{15} ph/s/mrad^2/mm^2/0.1%bw at 16.3 keV
On-axis peak angular flux:
9.6 x 10^{13} ph/s/mrad^2/0.1%bw at 16.3 keV
On-axis peak horizontal angular flux:
1.6 x 10^{13} ph/s/mradh/0.1%bw at 5.6 keV
Source size and divergence at the critical energy:
Σ_x: 91 µm Σ_y: 30 µm
$\Sigma_{x'}$: 6 mrad $\Sigma_{y'}$: 47 µrad

Circularly Polarized Undulator (sector 4)
Period: 12.8 cm
Length: 2.1 m
Circular mode:
K_{max}: 2.65 (effective; for both horizontal and vertical fields at maximum currents 1.2 kA horizontal and 0.34 kA vertical)
B_{max}: 0.26 T (peak fields)
Tuning range: 0.5-3.0 keV (1st harmonic)
On-axis peak circular brilliance:
3.4 x 10^{18} ph/s/mrad^2/mm^2/0.1%bw at 1.8 keV
Linear mode:
K_{max}: 2.80 (effective; for both horizontal and vertical fields at maximum currents 1.4 kA horizontal and 0.40 kA vertical)
B_{max}: 0.29 T (peak fields)
Tuning range: 0.8-3.0 keV (1st harmonic)
0.8-10.0 keV (1st-5th harmonic)
On-axis peak linear brilliance:
2.5 x 10^{18} ph/s/mrad^2/mm^2/0.1%bw at 2.1 keV
Switching frequency: 0-5 Hz
Switching rise time: 20 ms
Source size and divergence at 1.5 keV:
Σ_x: 273 µm Σ_y: 10µm
$\Sigma_{x'}$: 17.9 µrad $\Sigma_{y'}$: 14.4 µrad

Elliptical Multipole Wiggler (sector 11)
Period length: 16.0 cm
Number of poles: 34 permanent magnets,
36 electromagnets
Length: 2.8 m
$K_{x\text{-}max}$: 1.3 (effective; at maximum current 1.15 kA)
$K_{y\text{-}max}$: 14.4 (peak; at minimum gap 24.0 mm)
Switching frequency: 0-10 Hz
Critical energy: 31.4 keV (at minimum gap)
Energy range: 5-200 keV
Source size and divergence at the critical energy:
Σ_x: 273 µm Σ_y: 10 µm
$\Sigma_{x'}$: 820 µrad (FWHM 1.9 mrad; non-Gaussian; linear mode)
$\Sigma_{y'}$: 47 µrad (linear mode)