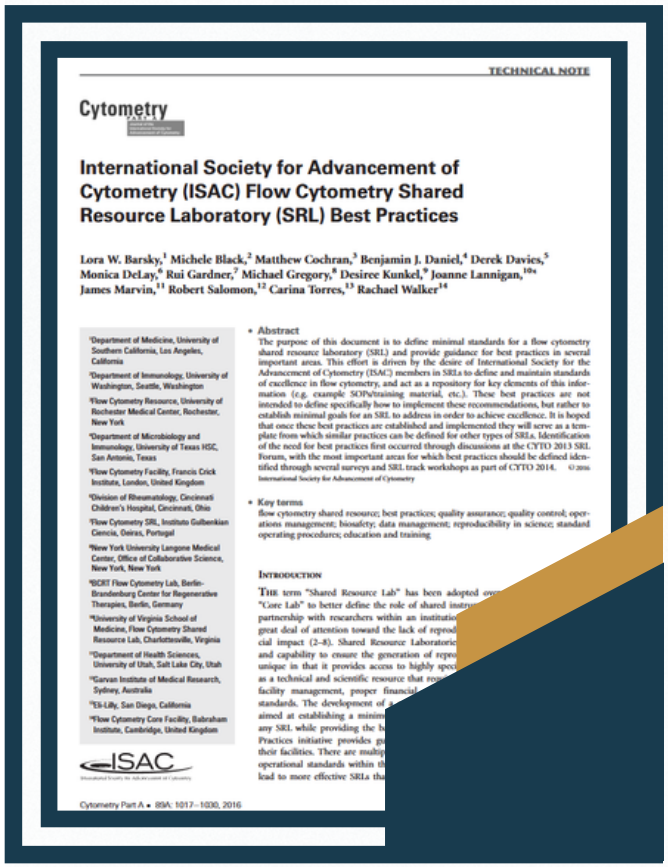
2016 ISAC SRL BEST PRACTICES

A QUICK GUIDE


TECHNICAL NOTE

Cytometry

International Society for Advancement of Cytometry (ISAC) Flow Cytometry Shared Resource Laboratory (SRL) Best Practices

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Abstract

Key terms

Introduction

ISAC

Cytometry Part A • 89A: 1017–1030, 2016

A concise reference to the foundational areas covered in the original Best Practices paper for flow cytometry Shared Resource Laboratories.

CORE SECTIONS COVERED IN THE 2016 PAPER

- SOPs
- Training & Education
- Quality Assurance
- Laboratory Safety
- Data Management
- Staffing
- Operations

SOPs

Define → Standardize → Monitor → Revise

- SOPs are written directives that support integrity, quality, consistency, reproducibility, and reconstruction of outcomes.
- The paper recommends a common SOP structure: title page, revision/date, purpose, detailed procedure, monitoring, corrective actions, and regular review.
- Recommended SRL SOP areas include training, maintenance, QC, biosafety, lab policies, emergency preparedness, sample prep, instrument setup, and data management.

Training & Education

Teach → Practice → Assess → Refresh

- Training should combine theory and hands-on instruction and be tailored to staff and users.
- All training activities should be documented and linked back to SOPs.
- The paper covers training in instrumentation, experimental design, reagents, lab safety, data analysis, facility policies, and continuing education.

Quality Assurance

Standardize → Check → Record → Correct

- QA is presented as a multilayered system, not just instrument QC.
- The main components are quality control, preventive/corrective maintenance, record keeping, and data reporting, supported by audits and external assessment.
- The paper emphasizes documented calibration, performance tracking, staff training, and traceable maintenance history.

Laboratory Safety

Assess → Protect → Contain → Respond

- Safety is a core SRL responsibility because many users may work in shared spaces with varied biological materials and differing levels of supervision.
- The paper covers training, risk assessment, exposure plans, physical environment, and administrative support.
- Key areas include biosafety, chemical and laser safety, incident response, aerosol containment, PPE, decontamination, access control, signage, and institutional support for compliance.

Staffing

Plan → Match → Support → Retain

- Staffing is not just a matter of instrument count; it should reflect the strategic goals, services, complexity, and user needs of the facility.
- The paper recommends defining facility and individual goals, determining staffing levels based on workload and service model, and identifying the right mix of technical and broader professional skills.
- It also highlights SMART task definition, ongoing reassessment, and proactive planning for recruitment and retention.

Data Management

Collect → Document → Verify → Preserve

- Data management is treated as essential for long-term identification, integrity, preservation, and reuse of data.
- Key elements include data collection, metadata/annotation, documentation, QA of data files, long-term storage, backup, and computer maintenance.
- The paper also addresses file naming, repository deposition, de-identification, retention practices, and secure computer use.

Operations

Lead → Measure → Budget → Communicate

- Includes management structure, advisory oversight, performance assessment, annual reporting, budget development, facility policies, and communication.
- The SRL should have qualified leadership with appropriate authority, regular oversight, documented assessment processes, and clear communication channels for users and stakeholders.
- The paper also emphasizes annual review, financial planning, fair use policies, and visible communication through websites, email, newsletters, or similar tools.

WHY THIS PAPER HAS MATTERED

Established a common framework for quality and operational standards in SRLs

Supported more reproducible, consistent, and high-quality cytometry practice

Provided the foundation for criteria guiding the ISAC SRL Recognition Program

SCAN QR CODE

To read the full paper

A foundational reference for SRL quality, reproducibility, and professional standards.