

Nano-Safety Approach at Universidad de los Andes

Seguridad en actividades nano en la Universidad de los Andes

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Panama City, Panama

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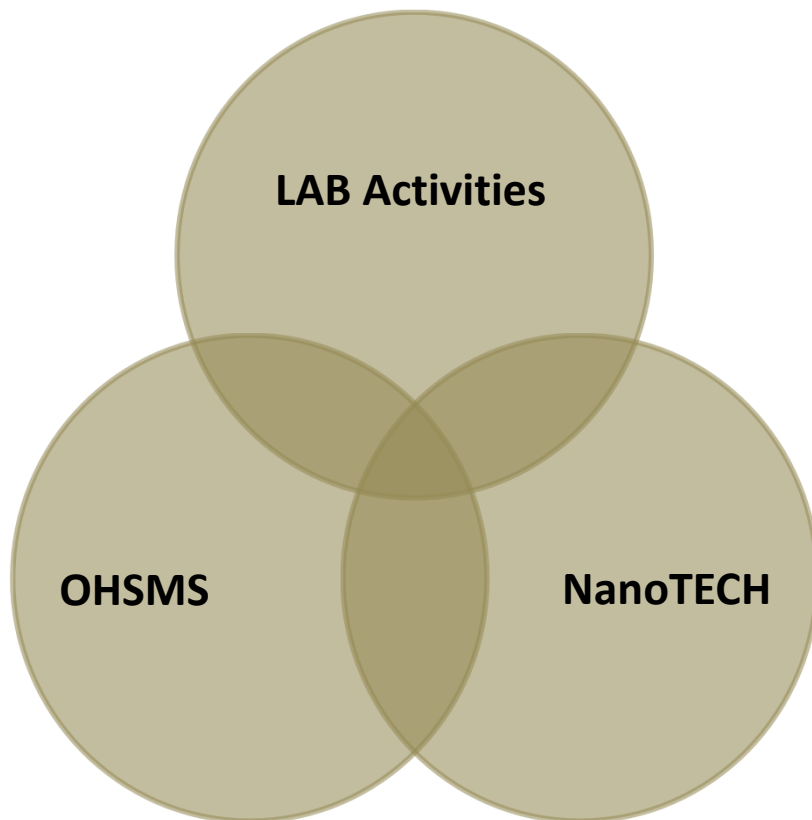
OUTLINE

Temas

1. Uniandes Nano-Safety
2. Timeline and description of activities
3. From ISO 17025 to GLP

Uniandes Nano-Safety

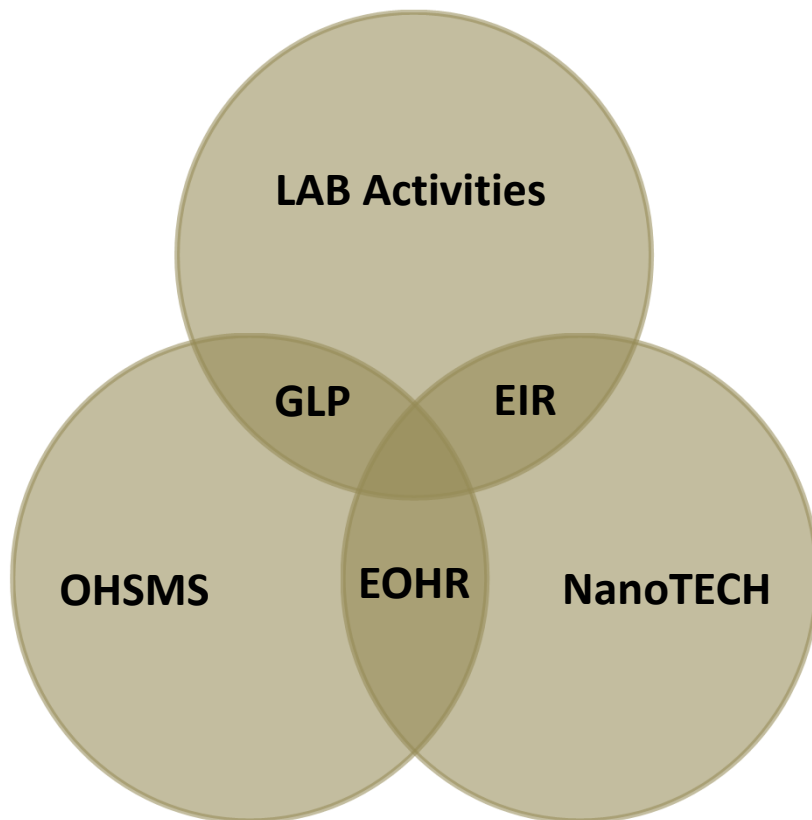
Nanoseguridad en Uniandes (Colombia)



1. **Nanotechnology**
2. **LAB Activities**
3. **OHSMS:** Occupational Health and Safety Management System

Uniandes Nano-Safety

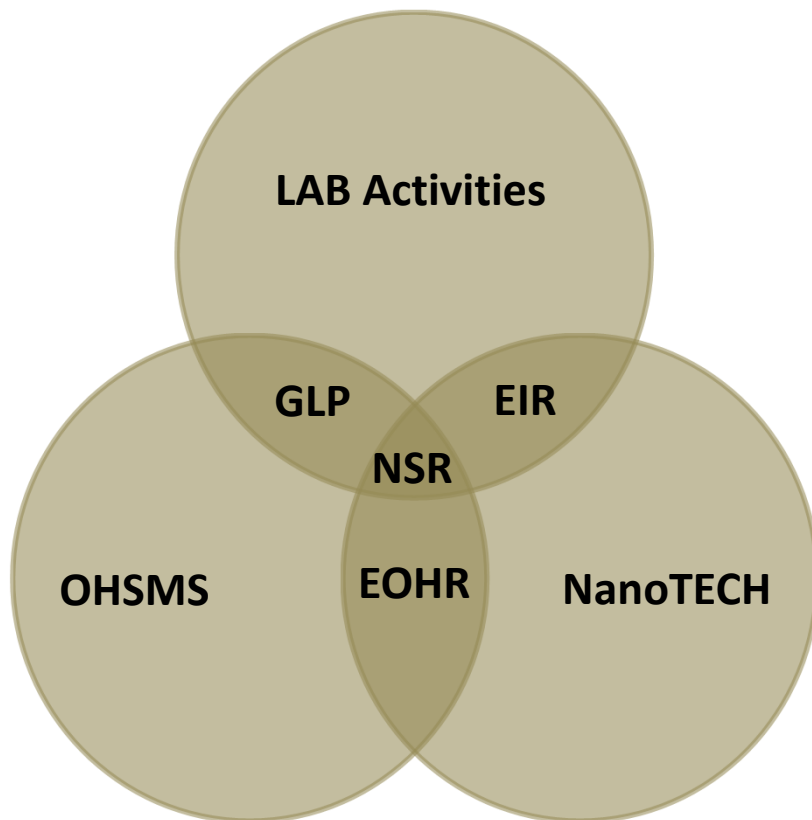
Nanoseguridad en Uniandes (Colombia)



- i. **GLP:** Good Laboratory Practice
- ii. **EOHR:** Emerging Occupational Health Risk
- iii. **EIR:** Emerging Infrastructure Risk

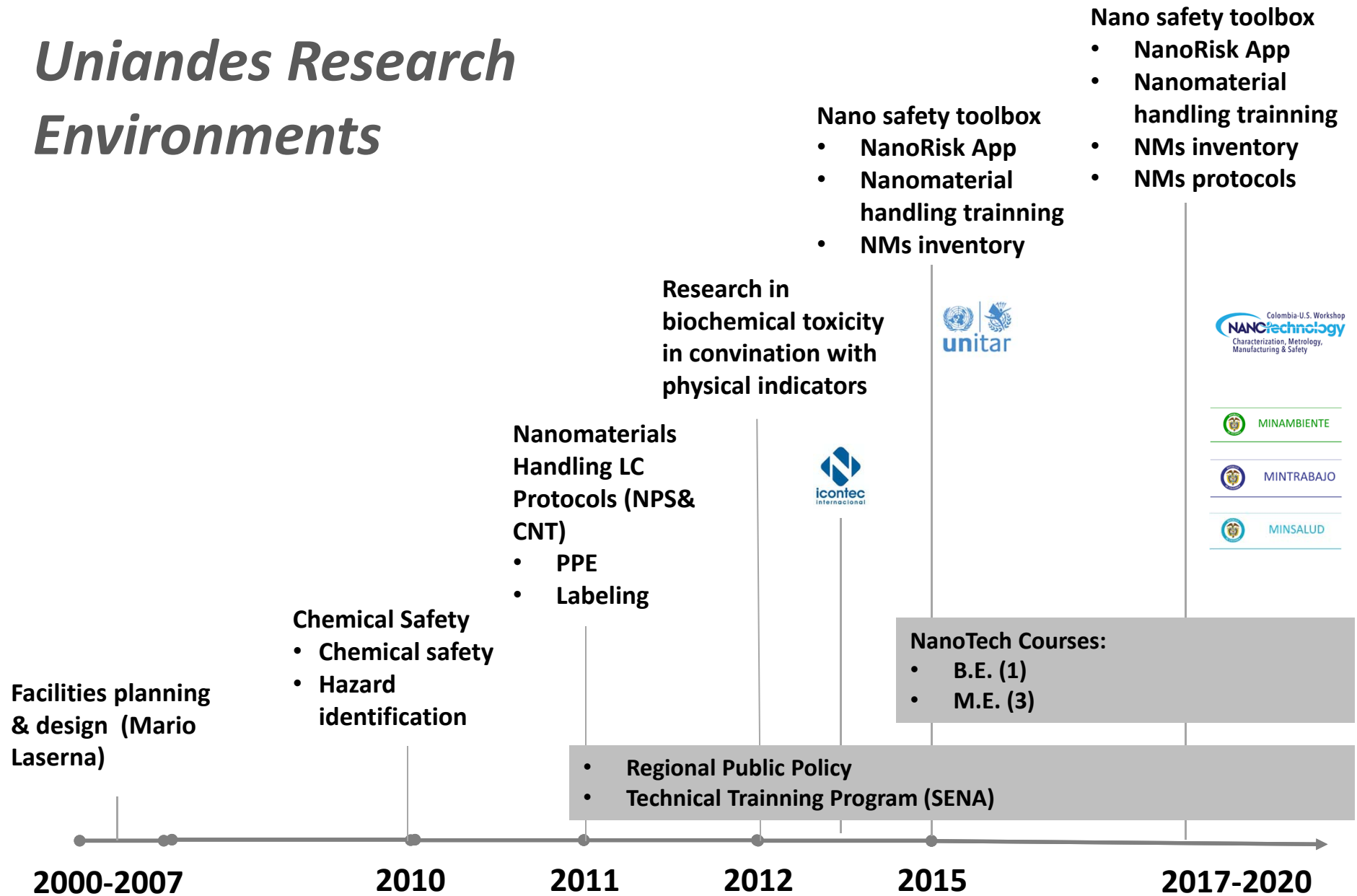
Uniandes Nano-Safety

Nanoseguridad en Uniandes (Colombia)



NSR: Nano-Safety in Research & Development + Innovation

Uniandes Research Environments



NanoRisk App

Country ?	Sessions ? ↓	% New Sessions ?	New Users ?
	2,242 % of Total: 100.00% (2,242)	78.28% Avg for View: 78.23% (0.06%)	1,755 % of Total: 100.06% (1,754)
1.  Colombia	480 (21.41%)	60.62%	291 (16.58%)
2.  United Kingdom	361 (16.10%)	99.72%	360 (20.51%)
3.  United States	353 (15.74%)	97.73%	345 (19.66%)
4. (not set)	286 (12.76%)	100.00%	286 (16.30%)
5.  Russia	225 (10.04%)	6.67%	15 (0.85%)
6.  China	57 (2.54%)	92.98%	53 (3.02%)
7.  Chile	48 (2.14%)	37.50%	18 (1.03%)
8.  Brazil	41 (1.83%)	78.05%	32 (1.82%)
9.  Netherlands	38 (1.69%)	89.47%	34 (1.94%)
10.  Japan	32 (1.43%)	100.00%	32 (1.82%)

NTC & GTC

NTC / GTC	TITULO	REFERENCIA
NTC 6148	NANOTECNOLOGÍA. TERMINOLOGÍA Y DEFINICIONES PARA NANOOBJETOS, NANOPARTÍCULA, NANOFIBRA Y NANOPLACA	ISO/TS 27687:2009
NTC 6149	NANOTECNOLOGÍA. VOCABULARIO. PARTE 1: TÉRMINOS FUNDAMENTALES	ISO/TS 80004-1:2010
NTC 6152	NANOTECNOLOGÍAS. VOCABULARIO. PARTE 3: NANOOBJETOS DE CARBONO	ISO/TS 80004-3:2010
NTC 6157	NANOTECNOLOGÍA. VOCABULARIO. PARTE 4: MATERIALES NANOESTRUCTURADOS	ISO/TS 80004-4:2011
GTC 267	NANOTECNOLOGÍA. METODOLOGÍA PARA LA CLASIFICACIÓN Y CATEGORIZACIÓN DE NANOMATERIALES	ISO/TR 11360:2010
GTC-ISO 13014	NANOTECNOLOGÍA. GUÍA PARA LA CARACTERIZACIÓN FÍSICO QUÍMICA DE MATERIALES DE INGENIERÍA A NANOESCALA PARA EVALUACIÓN TOXICOLÓGICA	ISO/TR 13014:2012
GTC-ISO 13329	NANOTECNOLOGÍA. PREPARACIÓN DE LAS HOJAS DE DATOS DE SEGURIDAD DE LOS MATERIALES (HDSM)	ISO/TR 13329:2012
NTC-ISO 80004-6	NANOTECNOLOGÍA. VOCABULARIO. CARACTERIZACIÓN DE NANOOBJETOS	ISO/TS 80004-6:2013

ISO Current Efforts

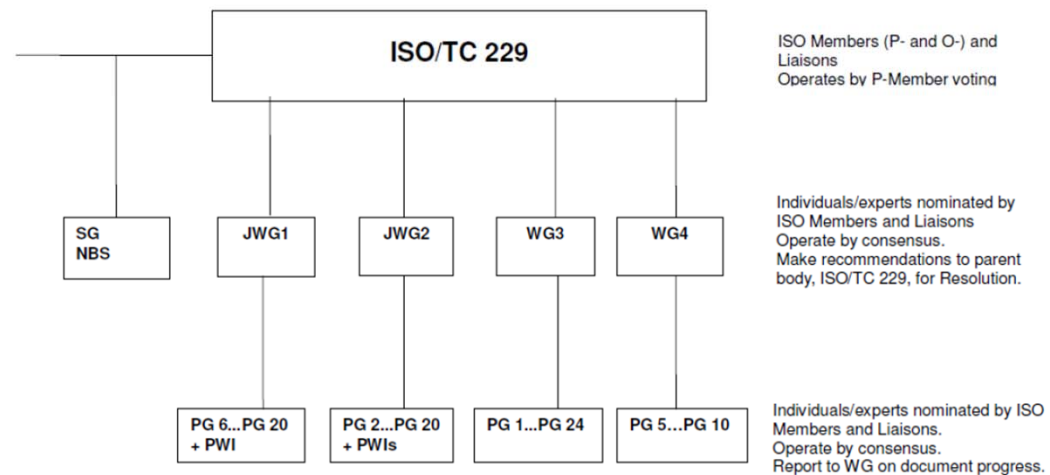


Standards Council of Canada
Conseil canadien des normes

Nanotechnologies: 3-D Tomography in a Transmission Electron Microscope (TEM)

PROPOSAL

Committee Structure



Planning of Normalization 2018

ISO/TR 16197:2014

Nanotechnologies -- Compilation and description of toxicological screening methods for manufactured nanomaterials

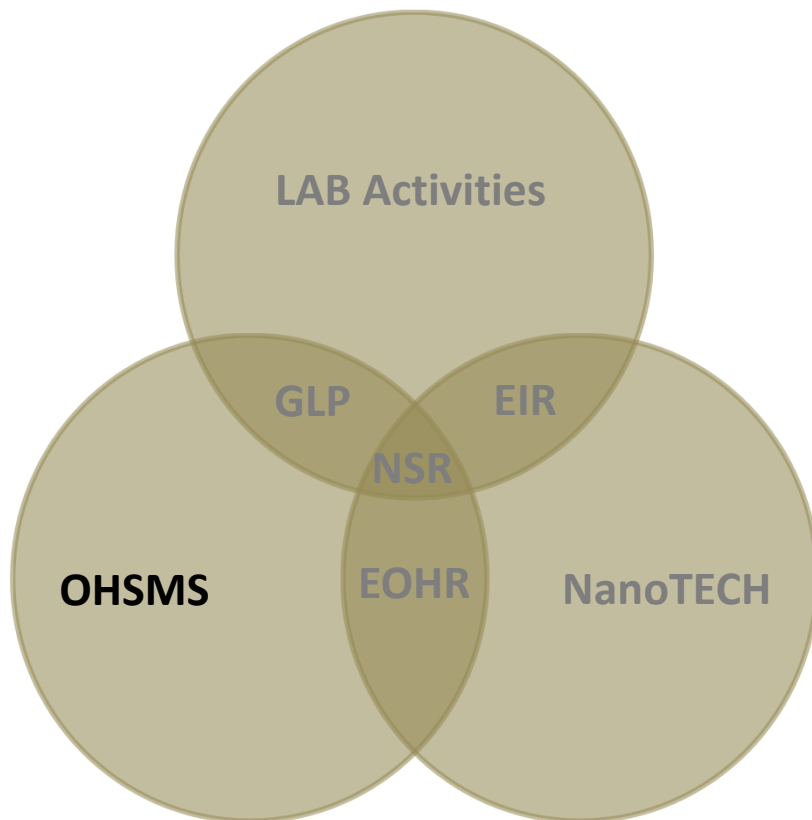
ISO 10801:2010

Nanotechnologies -- Generation of metal nanoparticles for inhalation toxicity testing using the evaporation/condensation method

ISO/TR 17302:2015

Nanotechnologies -- Framework for identifying vocabulary development for nanotechnology applications in human healthcare

Occupational Health and Safety Management System (OHSMS)



Decreto único del sector trabajo 1072 (2015)

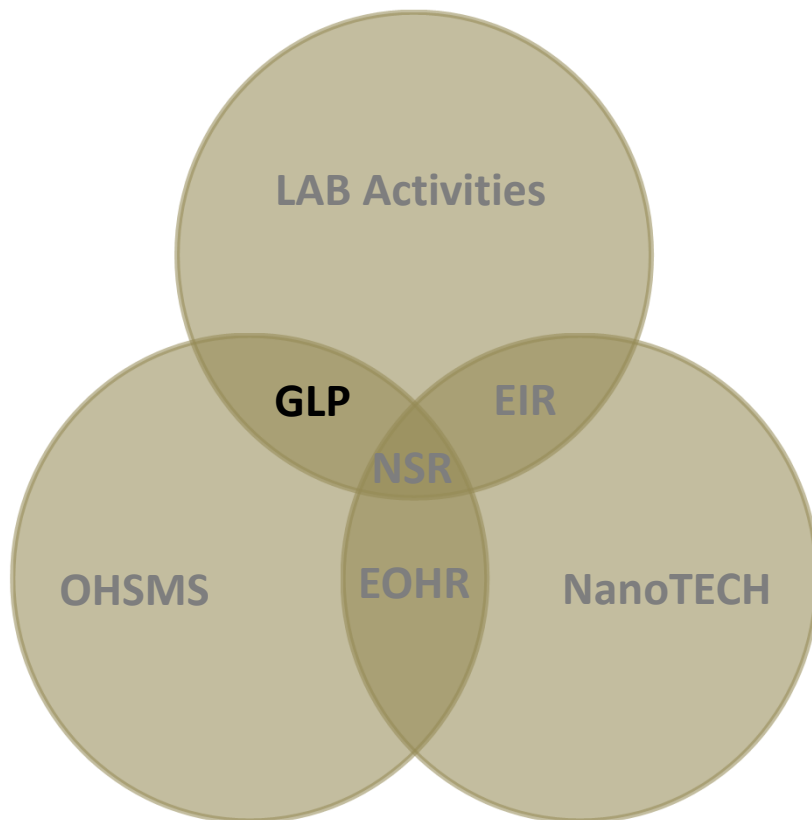
1. Occupational Health and Safety Management System (OHSMS)

Sistema de Gestión en Seguridad y Salud en el Trabajo (SG-SST)

2. Joint Health & Safety Committees (JHSC)

Comité Paritario de Seguridad y Salud en el Trabajo (COPASST)

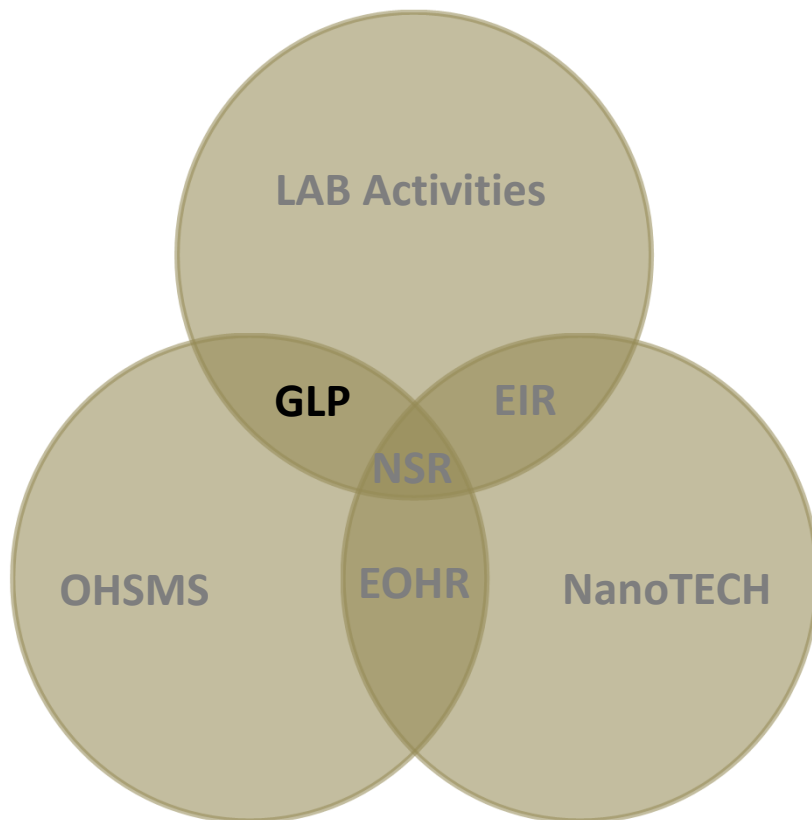
GLP & ISO 17025



Good Laboratory Practice (Definition)

*A **Quality System** concerned with the organisational process and the conditions under which **non-clinical** health and environmental **safety studies** are planned, performed, monitored, recorded, archived and reported.*

Source: European Commission, 2010

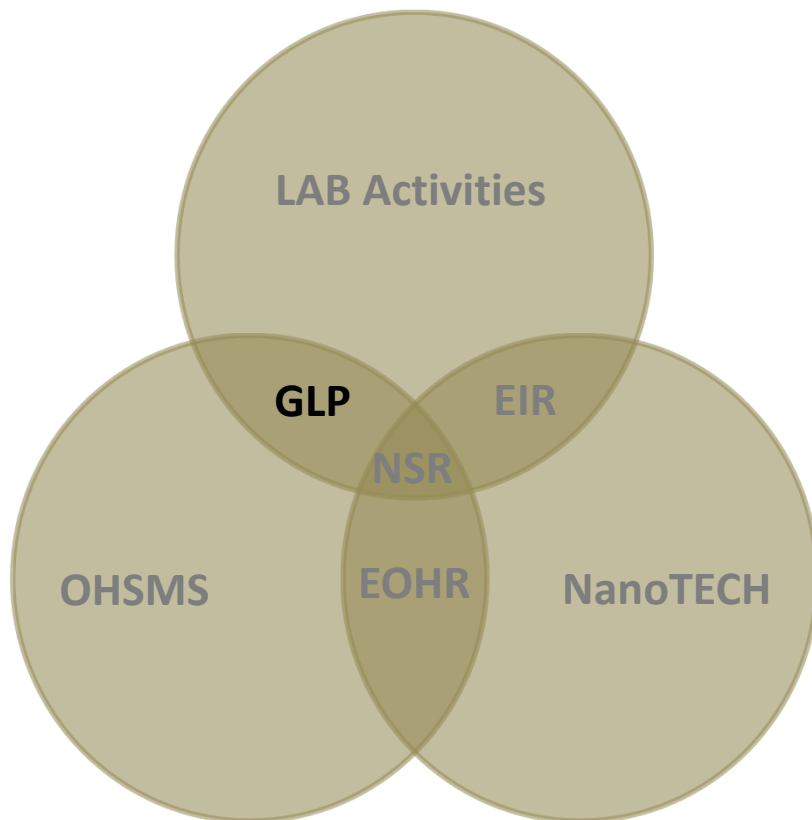


Good Laboratory Practice (Objectives)

- *Promote the quality and validity of data generated in the testing of chemicals*
- *Protect human health and the environment*
- *Facilitate data recognition*
- *Avoidance of duplicative testing*
- *Animal welfare*
- *Time and resource efficiency*
- *Avoidance of non-tariff barriers to trade*

Source: European Commission, 2010

GLP & ISO 17025

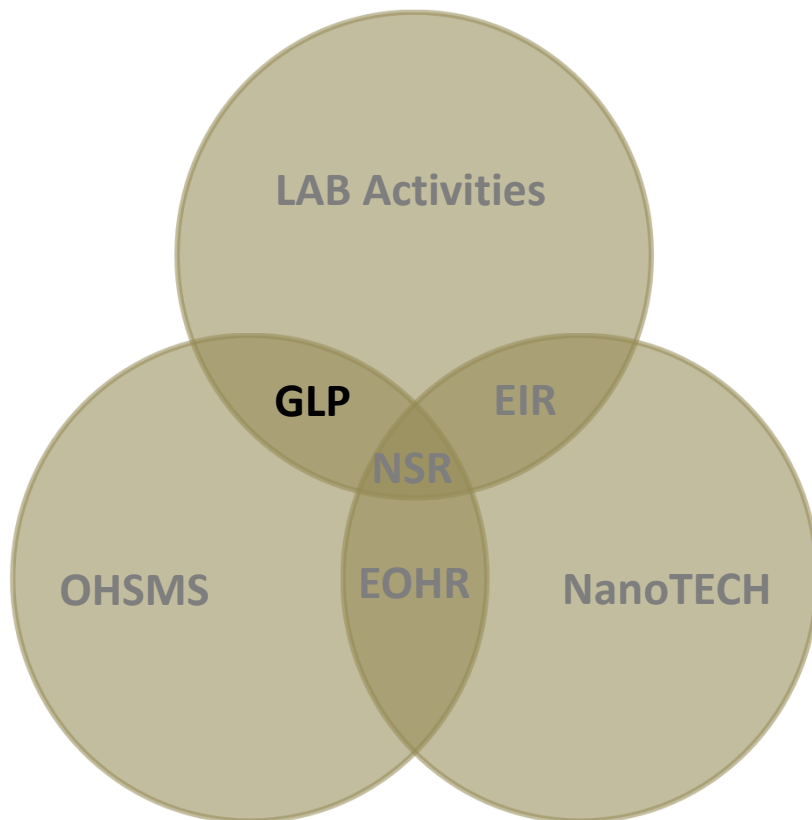


Good Laboratory Practice (GLP & ISO 17025)

- *A laboratory accredited according to **ISO 17025** can be considered to have satisfied many of the **GLP** requirements*

Source: European Commission, 2010

GLP & ISO 17025



Good Laboratory Practice (ISO 17025 at Uniandes)

- *National Accreditation Body of Colombia (ONAC)*
- *International Accreditation Forum (IAF) Accreditation Body Member*
- *International Laboratory Accreditation Cooperation (ILAC)*



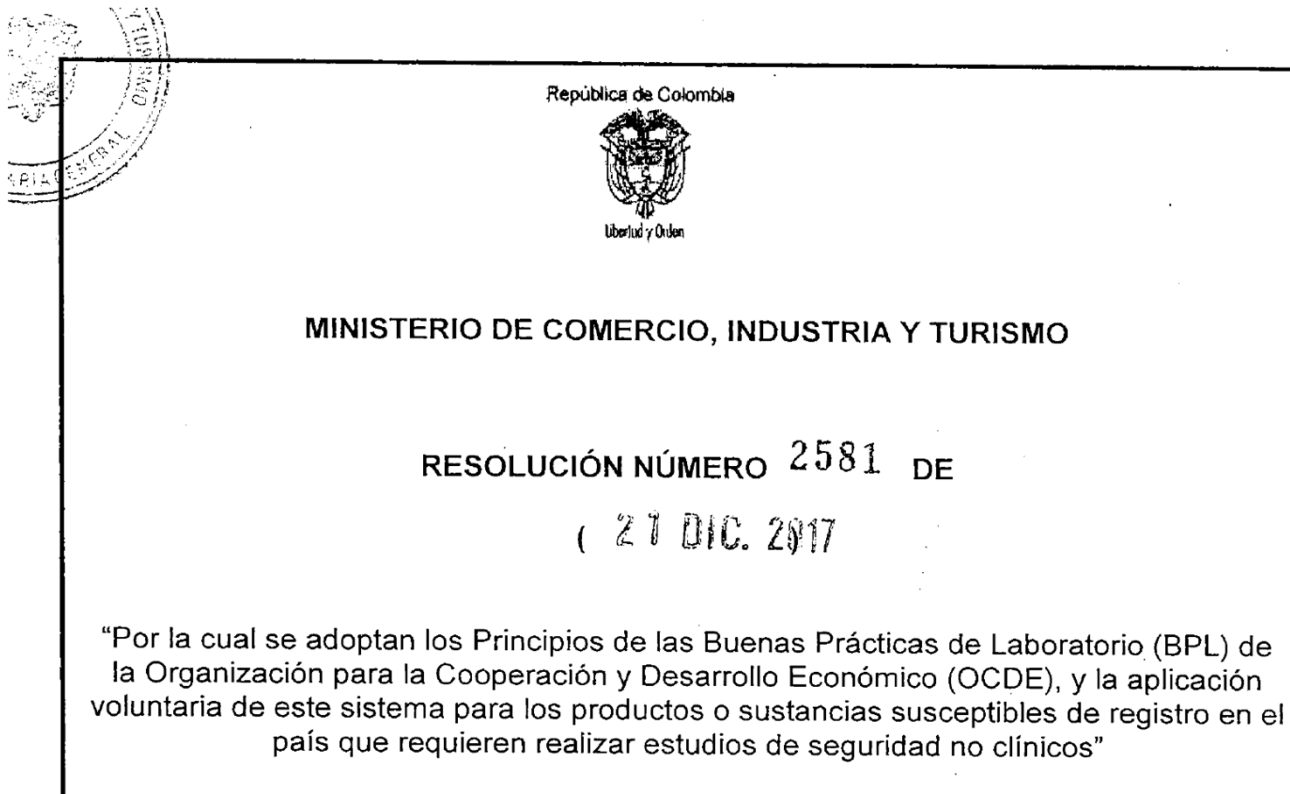
ISO/IEC 17025:2005

Good Laboratory Practice (ISO 17025 at Uniandes)

- One Uniandes LAB is accredited by ONAC (17025:2005)
- Civil Engineering Laboratory
- 2012 – 2015 – 2017 – 2020

GLP & ISO 17025

National Accreditation Body of Colombia (ONAC)



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