

Shaping Public Policy on Nanoparticles

ULTRAFINE PARTICLES CONFERENCE

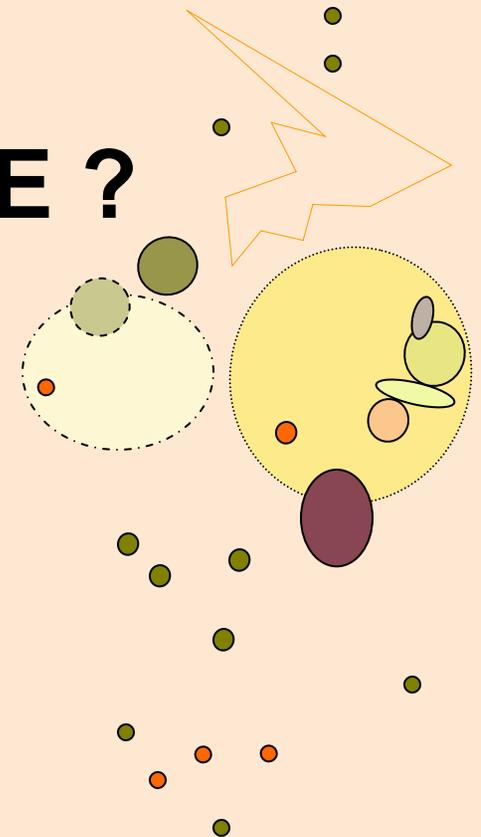


Bea LaPisto-Kirtley
Mayor, City of Bradbury
Governing Board Member
South Coast AQMD

FINE PARTICULATE?

ULTRAFINES?

NANOPARTICLES?



FINE PARTICULATE

PM_{2.5}: less than 2.5 μm (microns[★])

ULTRAFINES

PM less than 0.1 μm (microns[★])

NANOPARTICLES

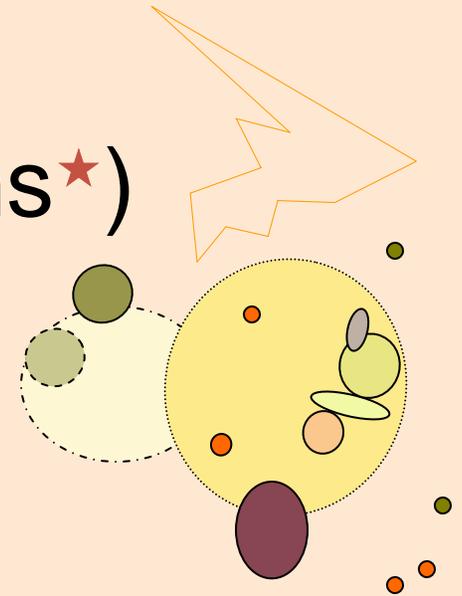
less than 50nm (nanometers[✧])

★ micron, micrometer = one millionth of a meter

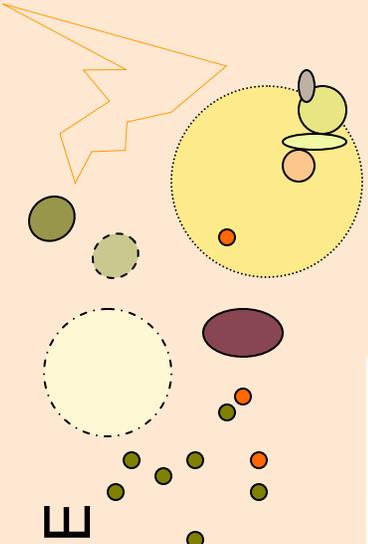
✧ nanometer = one billionth of a meter

1 micron, 1 μm = 1,000 nanometers (nm)

1 centimeter = 10,000,000 nanometers (nm)



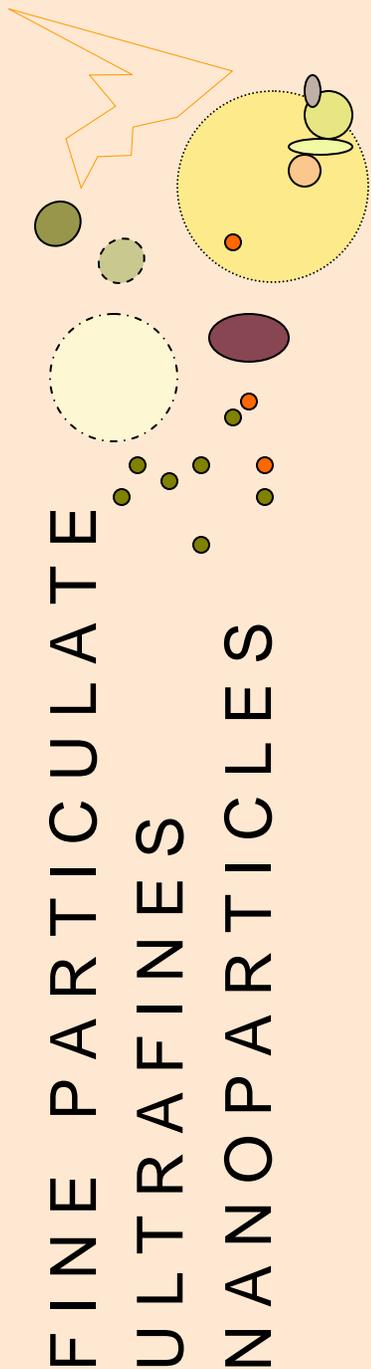
FINE PARTICULATE
ULTRAFINES
NANOPARTICLES



Southern California Context



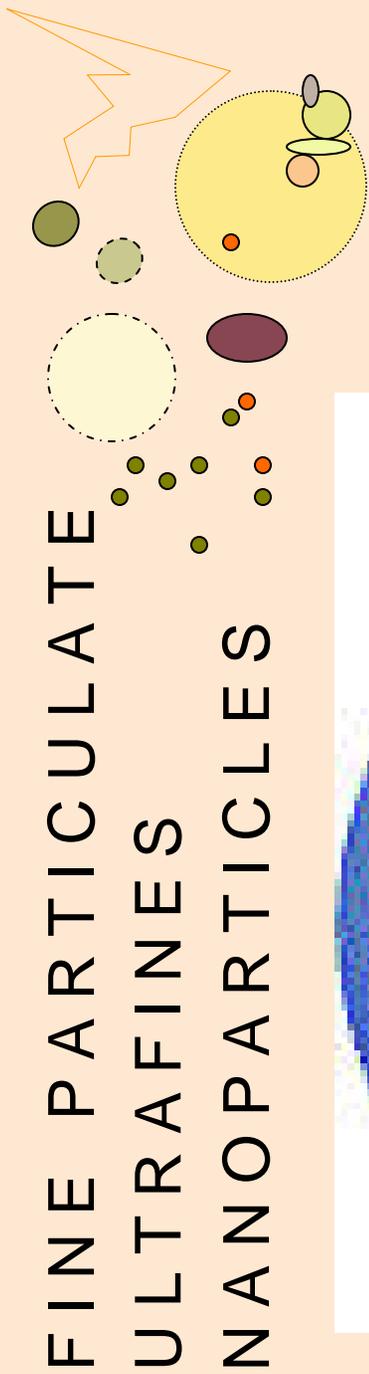
*Not Shown: San Clemente Island



Personal Context

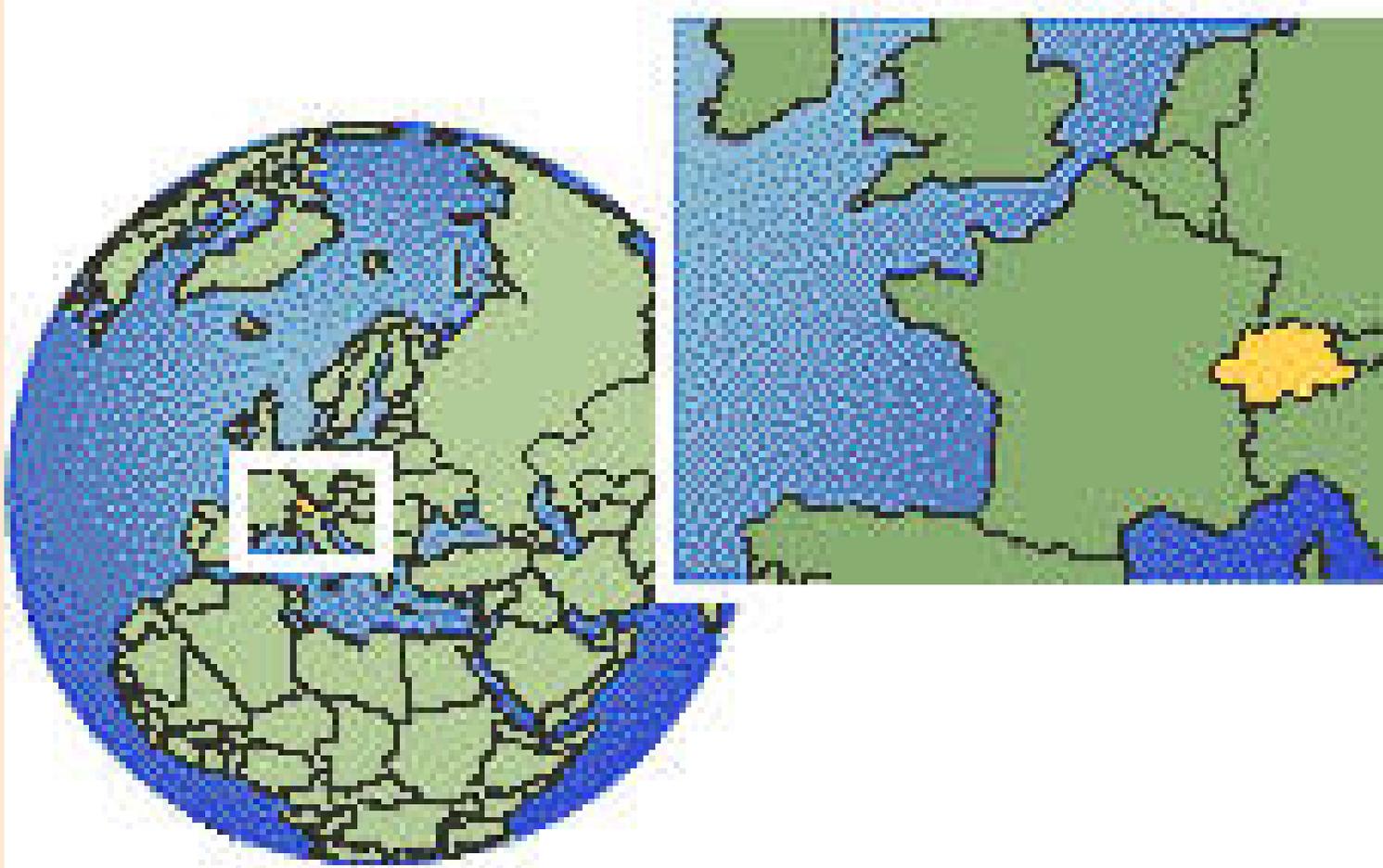
Listened to:

- Data from USC's "Children's Health Study" on lung damage
- News of vigorous European actions on particulate matter

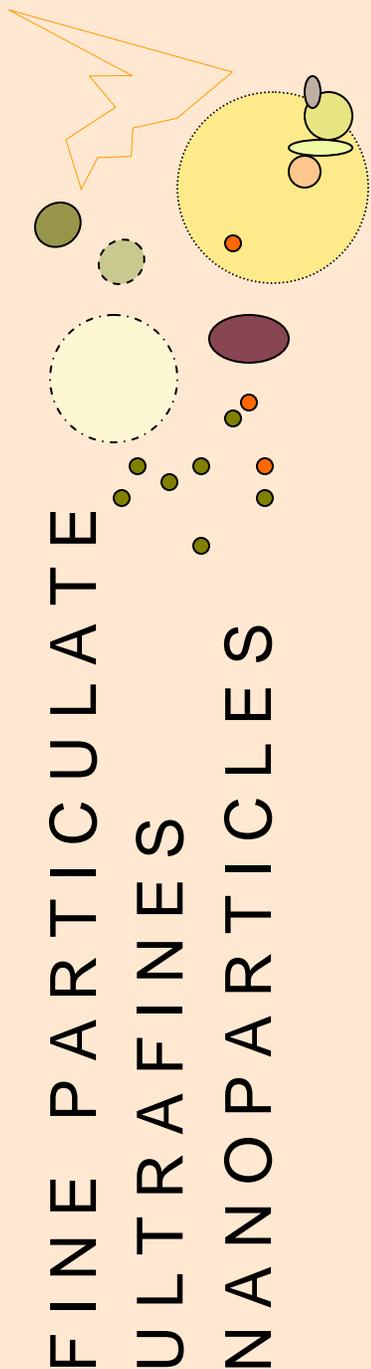


1. A Validation

2. A Challenge



Particle Mass vs. Particle Number?

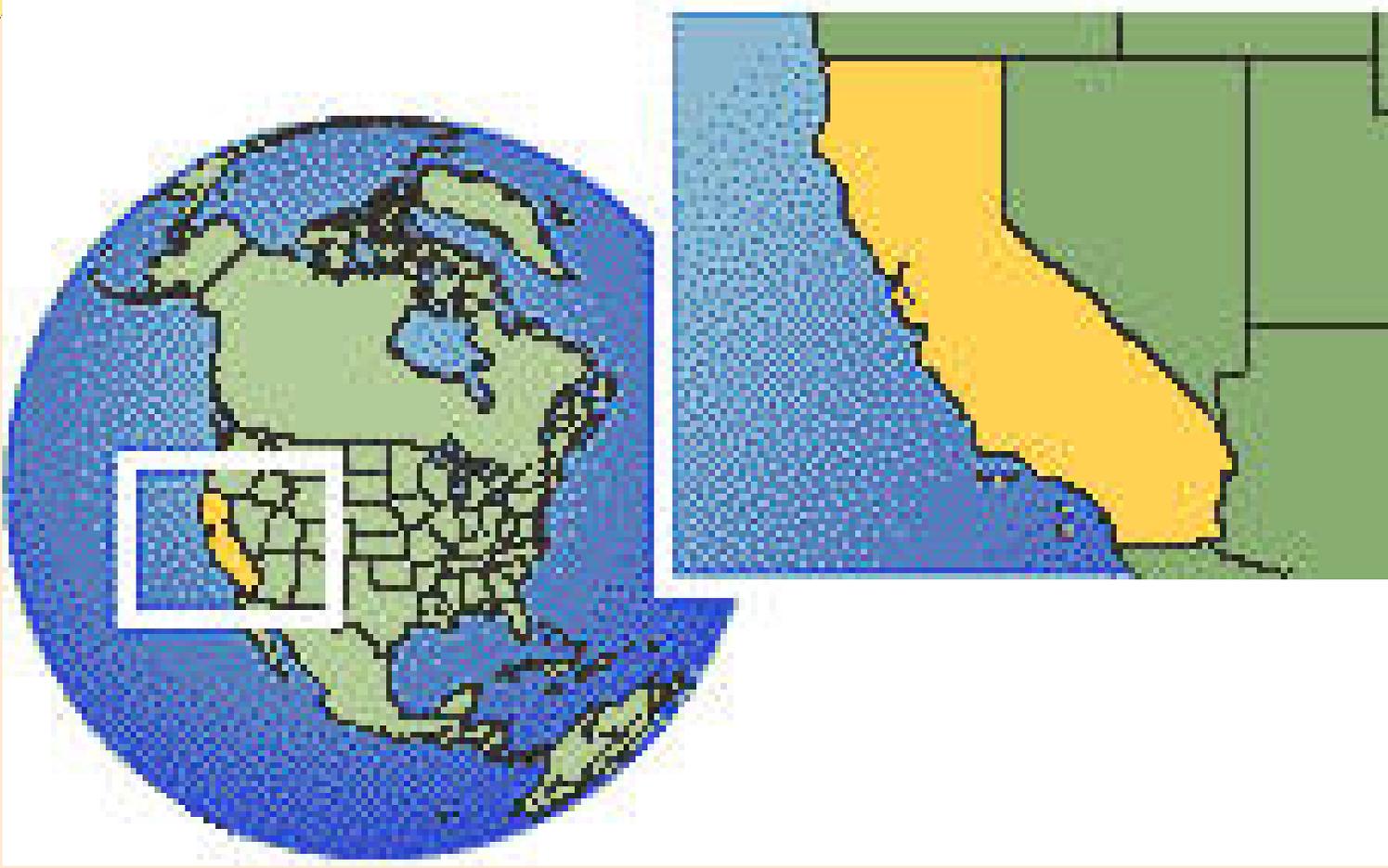
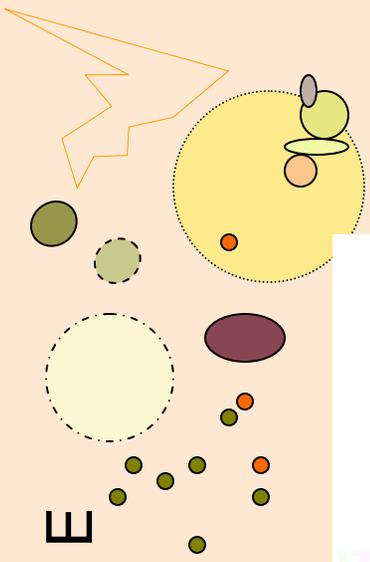


- Current regulations =
mass concentration limits
- *Example:*
Federal PM_{2.5} Std. = 65 $\mu\text{g}/\text{m}^3$
- Ultrafine particles have little mass,
yet their large numbers may pose
greater health risk than PM_{2.5}

FINE PARTICULATE

ULTRAFINES

NANOPARTICLES



Conference Agenda

YESTERDAY'S WARM-UP SESSIONS

- 1 Particles (Dr. Sioutas)
- 2 Ultrafine PM Health Effects (Dr. Froines)
- 3 Ultrafine Emission & Control Strategies (Dr. Kittleson)

DAY ONE

- Session 1 Ultrafine Particle Formation and Composition
Luncheon Speaker: Dr. Robert Sawyer, CARB
- Session 2 Formation, Exposure to Ambient Ultrafines
- Session 3 Sampling and Measurement of Ultrafines

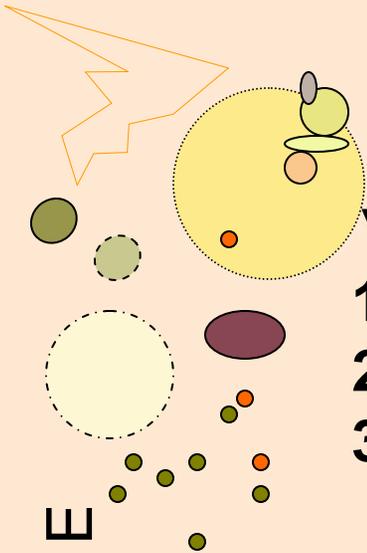
DAY TWO

- Session 4 Health Effects
- Session 5 Technology I – Engines
Luncheon Speaker: Dr. Barry Wallerstein, SCAQMD
- Session 6 Technology II – Fuels / Aftertreatment
- Session 7 Policy Issues

FINE PARTICULATE

ULTRAFINES

NANOPARTICLES



Technology and Public Health



- ✦ South Coast AQMD
- ✦ Air Quality
- ✦ **Advanced Particulate Control Technologies**

Advanced Technologies

Near-Term

- Aftertreatment
- Emulsified Diesel
- HD Natural Gas Engines
- Natural Gas Fueling Infrastructure
- Advanced Diesel Engines
- Hybrid Vehicles (Plug-in & Hydraulic)
- Gas-to-Liquid Fuel
- H2 Technologies & Refueling
- Renewables
- Fuel Cell Vehicles

Longer-Term

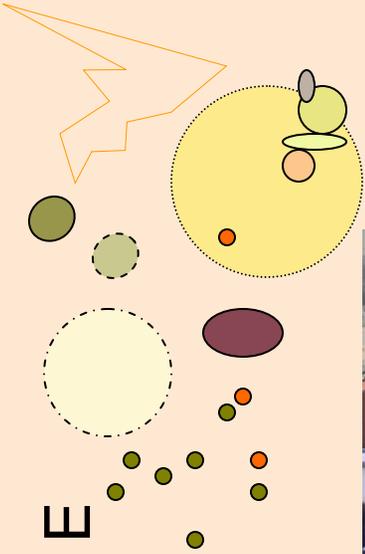


Particulate Picture

FINE PARTICULATE

ULTRAFINES

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"Can Southern California learn from other countries' efforts?"

- *Definitely.*
- South Coast AQMD Governing Board pushes to introduce **globally-best-available** clean energy technologies into Southern California market as soon as possible.





Policy actions should reflect what we care about.

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