

US EPA ARCHIVE DOCUMENT

Research Challenges

Specific Components and Toxicologic Models

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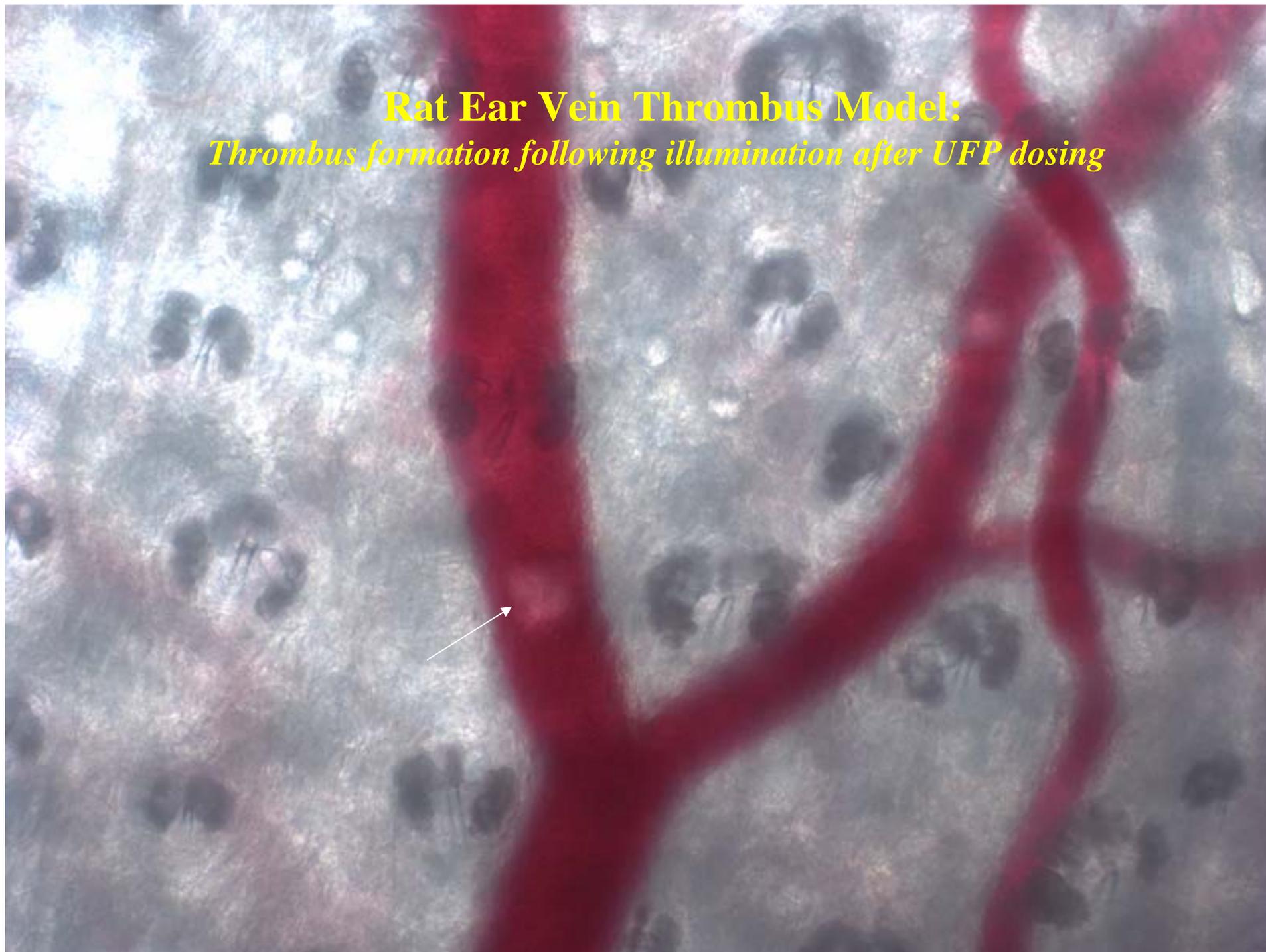
The Major Health Hypotheses

- PM mass
- PM particle size, surface area
- Ultra fine PM
- Reactive transition metals
- Organic compounds (e.g. on diesel PM)
- Acids
- Biogenic particles
- Sulfates and nitrates
- Peroxides
- Soot (e.g. elemental carbon)
- Co-pollutants - SO₂, CO, etc.

Rat Ear Vein Thrombus Model:
Placement of green laser for 30 sec



Rat Ear Vein Thrombus Model:
Thrombus formation following illumination after UFP dosing



Research Approaches

- End-point: thrombus formation, non-invasively, *in vivo*, in various organs
- Animal-models: compare normal vs diabetic rats
- Pollutants: examine components vs mixture
- Interaction of environment and genes: look for polymorphisms