



QUANTIFYING CASUALTY CAT RISK

**Innovative Development &
Application of Forward Looking Models**

Prepared for CAS Spring Meeting
May 2016

Praedicat is building technology for “data-driven foresight”



Praedicat is an
“insure-tech”
company based in
L.A.

We use technology and data to solve
fundamental problems of liability
insurance so that our clients can
grow and be sustainably profitable
**and the world can be cleaner, safer
and healthier**

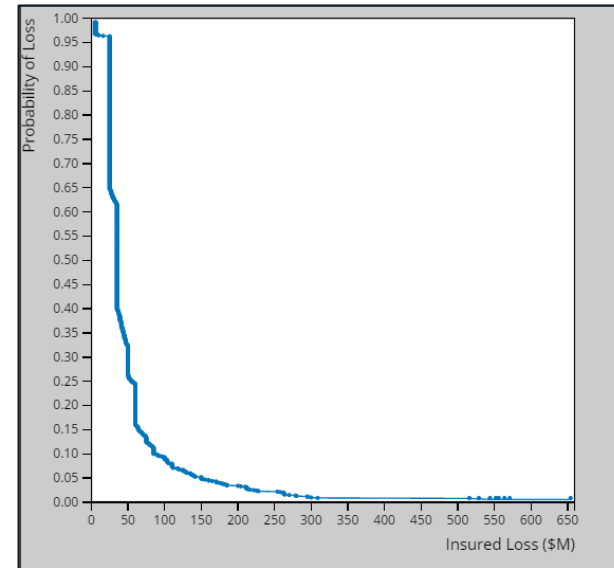


Our Target:
*The Golden Age of
Casualty*

Casualty catastrophes are complex events



Praedicat is dedicated to developing a common platform to quantify their risk



A comprehensive approach to understanding casualty catastrophes drives opportunity and growth

Liability accumulation management using “big data analytics”

- Big data
 - Text-mining of peer-reviewed science to scale emerging risk
- Probabilistic characterization of future scientific literatures
- Forward-looking modeling
 - Microsimulation of litigation given future science
- Scalable, data-driven, forward-looking casualty cat models put the focus where it belongs: **smart** growth and diversification



The problem is scale

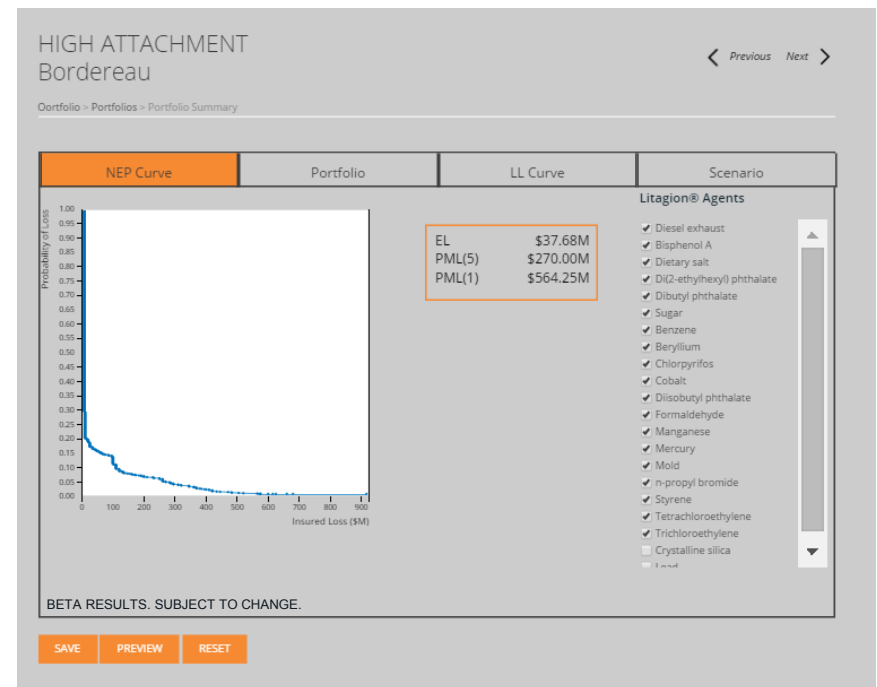


The world's scientific community is our emerging risk group

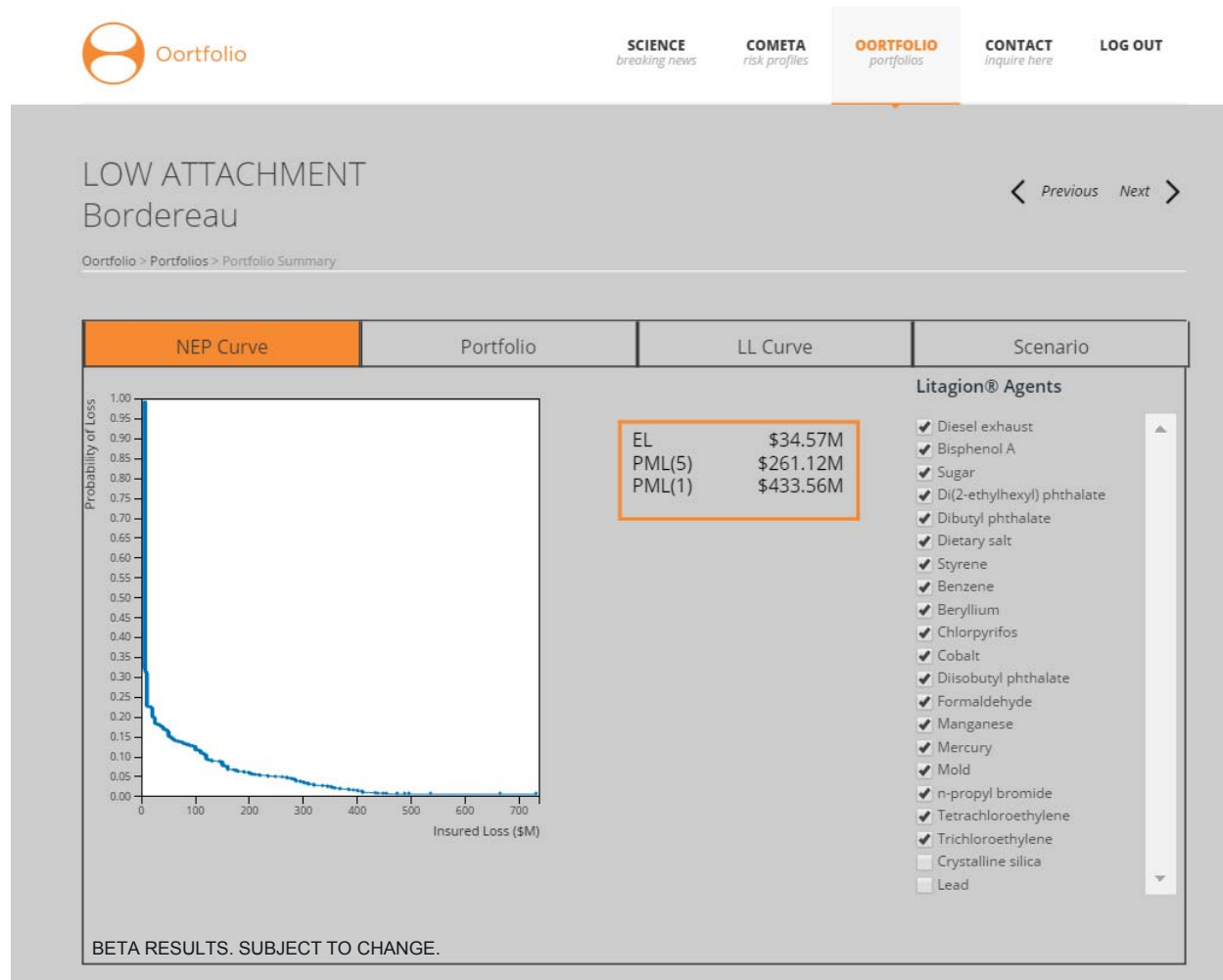
Quantification makes the data actionable

A “Big-Data” Liability Cat Model

- Hypotheses identified algorithmically from scientific literatures
- **Frequency** of future events based upon empirical model of how scientific understanding evolves
- **Severity** estimated using information on populations exposed, case strength and claims value
- **Latency** estimated using a microsimulation of exposure and claiming behavior conditional on future science
- Portfolios exposures estimated to facilitate **aggregation management** and **risk transfer**



Portfolio loss estimates provide unprecedented insights into liability risk

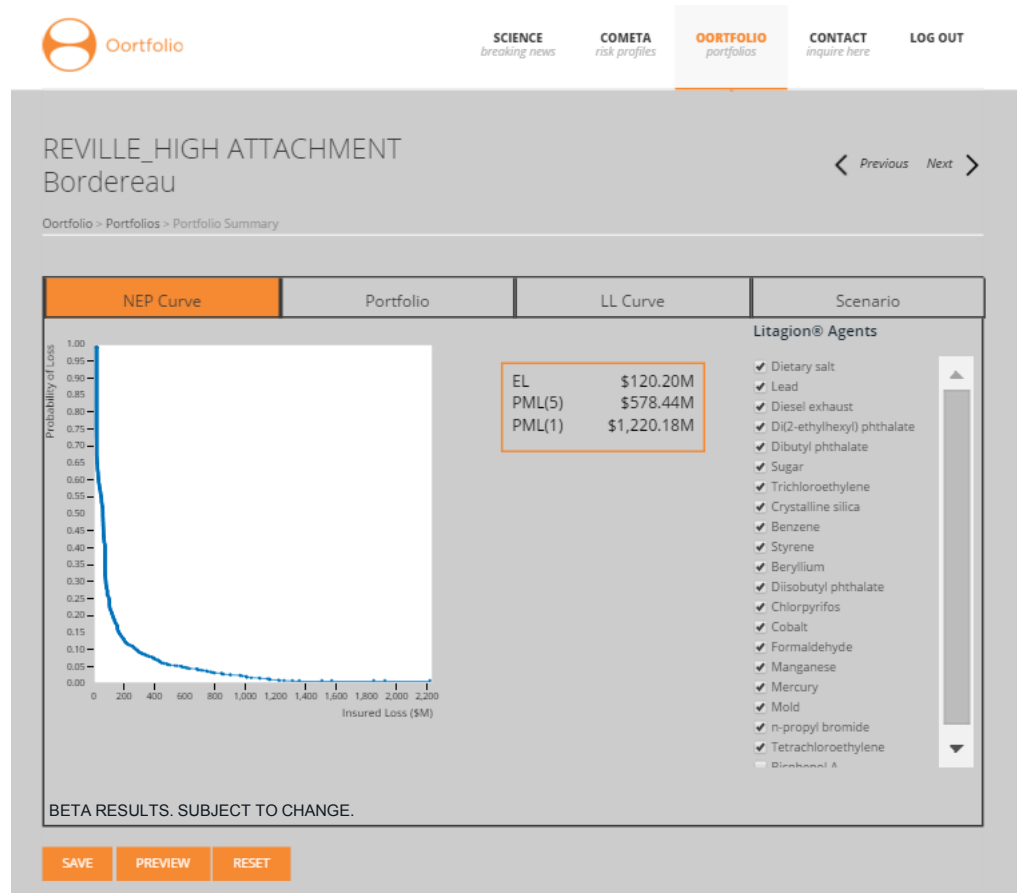


Key Applications & Opportunities

- ***Emerging Risk and Enterprise Risk Management***
 - Building the emerging risk list
 - Prioritizing emerging risks for the development of underwriting strategies
 - Researching the science around emerging risks
 - Developing emerging risk exposure maps
 - Keeping underwriting strategies current with the science
 - Adding or removing exclusions
 - Stress testing
- ***Underwriting***
 - Guiding discussions with risk managers
 - Negotiating exclusions
 - Risk selection
 - Prospecting
 - Attachment point strategy

What opportunities are coming?

- Realistic disaster scenarios
- Accumulation management
- Portfolio optimization
- Casualty Cat Loads
- Reserving
- New products



Our Target: The Golden Age of Casualty

- Liability catastrophe modeling is widely adopted
- Company or industry risk can be comprehensively described as a composite of named perils
 - Coverage can be designed accordingly
 - Aggregation can be managed efficiently
 - The end of unknown-unknowns
- A robust liability catastrophe market exists
- The time tail can be quantified and optimized

The casualty market is significantly larger and sustainably profitable



www.colleague.pepperdine.edu

The world is cleaner, safer and healthier

Praedicat®