

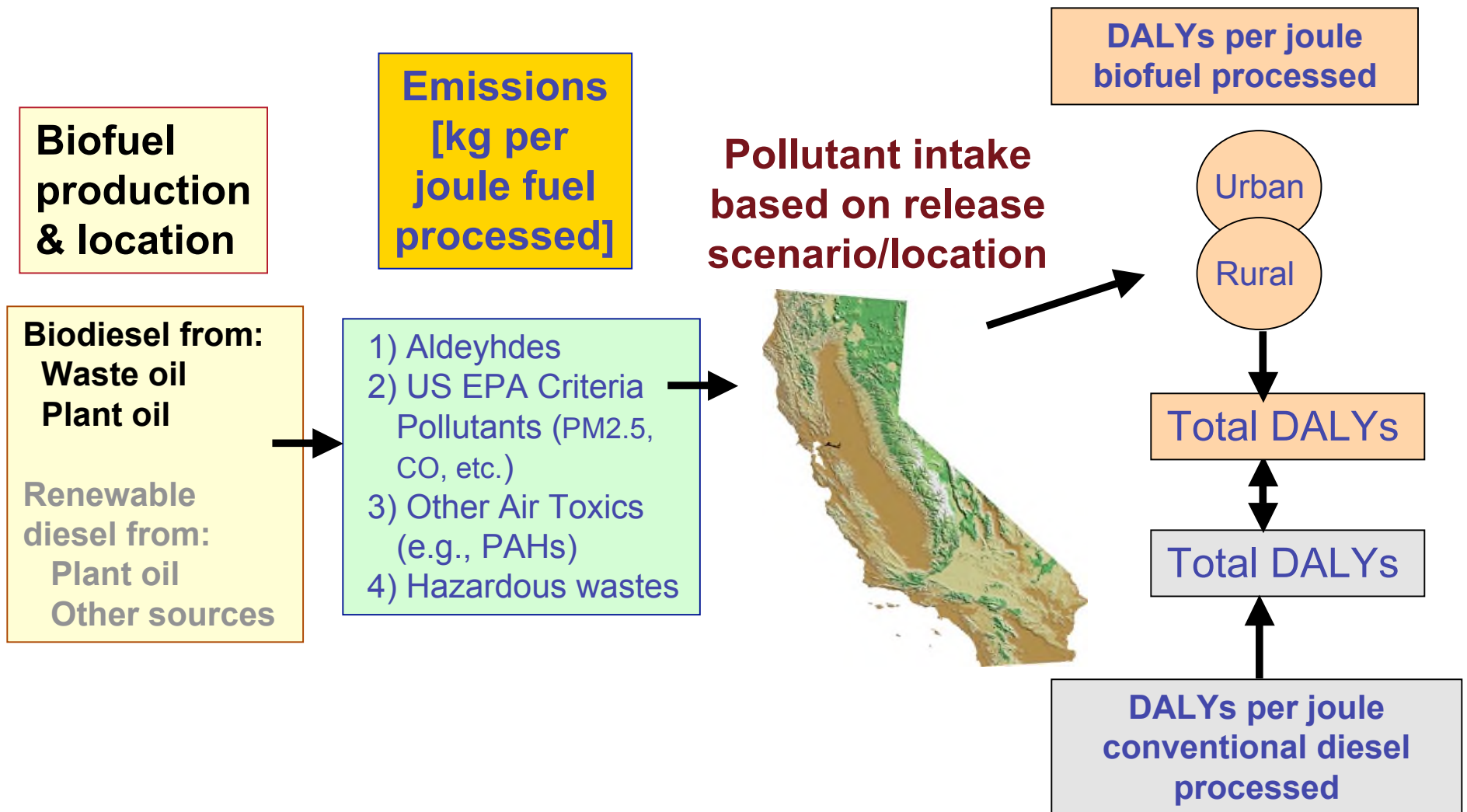
emissions → concentration → exposure → health effects → damage

Graphic courtesy of
Julian Marshall
University of Minnesota

Life Cycle Impact

Disability adjusted life years (DALYs)

Potential disease burden



Conclusions About Key Information Gaps

- **Additives composition, use, and impact**
 - How biocides and anti-oxidants impact biodegradation
 - How priority additive impact human and ecosystem health
 - How cold flow property controllers impact multiphase transport
 - *toxicity*
- **Subsurface fate and transport properties**
- **Releases - Material Compatibility**
- **Biodegradation of all biodiesel components in soils and aquifers**
- **More information on air emissions**
- **Missing toxicological data**

