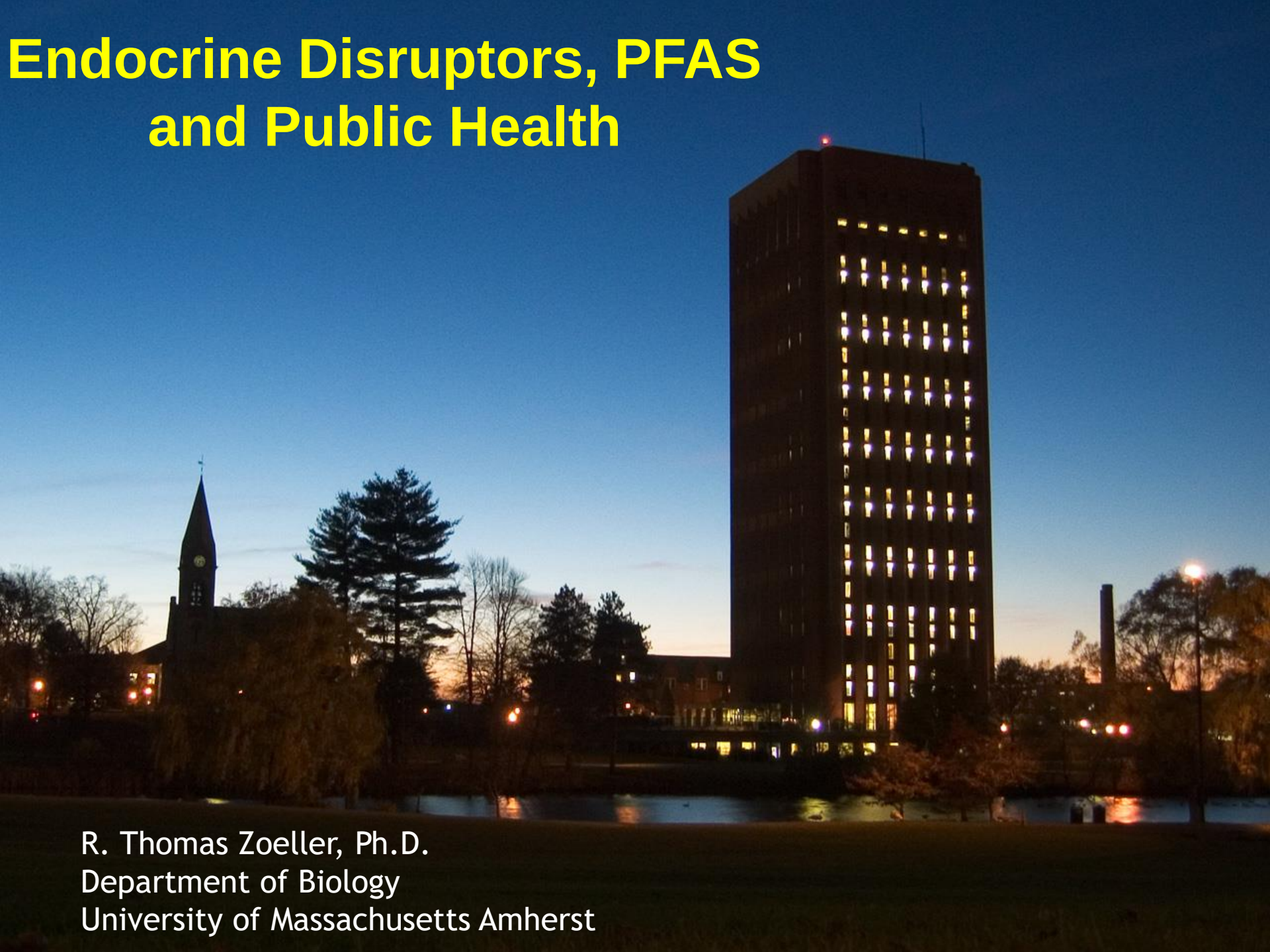
Endocrine Disruptors, PFAS and Public Health



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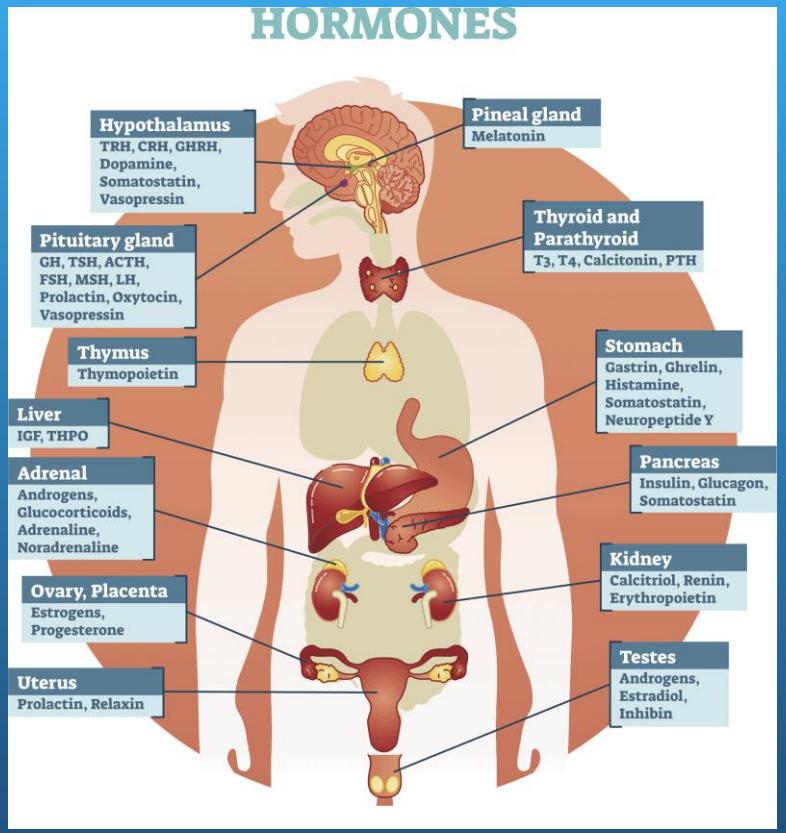
Hormone System

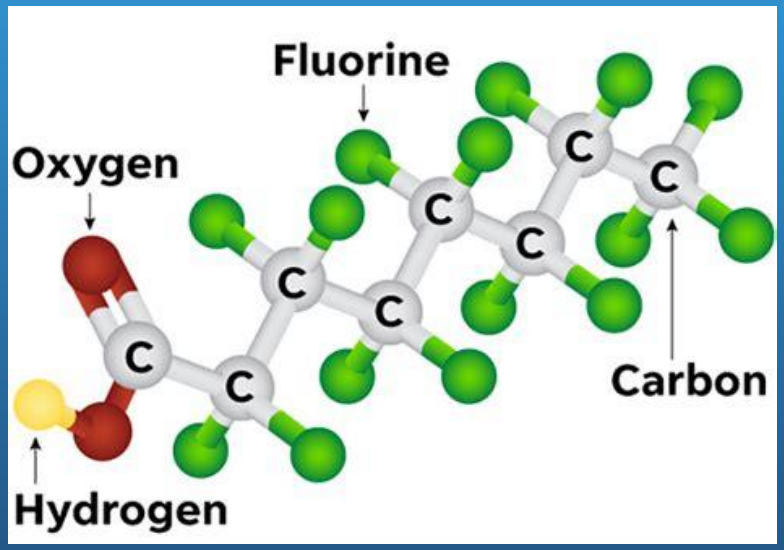


- Hormones are small molecules that are essential for human:
- Development
- Puberty and reproduction
- Metabolism, body weight regulation
- General health

Endocrine Disrupting Chemicals (EDCs)

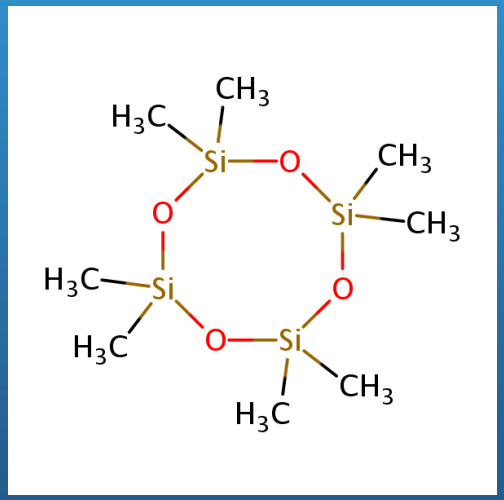
- EDCs are NOT like “traditional toxicants”
  - EDCs interfere with hormone **action**.
  - Because hormones act in a “non linear” way, EDCs (and drugs that affect hormone systems) also act in a non linear way where a low dose can produce a stronger effect than a high dose.
- Traditional toxicity studies focus on short-term toxicity (body/organ weight, reproductive success, etc). These acute effects are not very sensitive to EDCs.

PFAS as an EDC



- PFOA & PFOS both are linked to cases of thyroid cancer (”Dark Waters”).
- But they also reduce thyroid hormone levels.
- Low thyroid hormone during pregnancy affects children’s brain development including lower IQ and links to ADHD and Autistic Spectrum.

D4 as an EDC



Octamethylcyclotetrasiloxane
"D4"

- D4 is one of the most abundant siloxanes in hair care products.
- Researchers at NIEHS have shown that the use of these products are strongly linked to uterine and ovarian cancer.
- D4 is also linked to endocrine disruption. There is evidence that D4 is estrogenic and it affects the female cycle in rodent studies.

Thank You