Panel 2

Engineering, Justice, And Human Rights

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# ENGINEERING CHALLENGES

BYRON NEWBERRY

# from THE TIMES-PICAYUNE of NEW ORLEANS, 11/13/2012

*"During a meeting [with USACE engineers] on Hurricane Isaac's storm surge flooding, Plaquemines Parish residents on Tuesday complained that they don't want to know what happened, they want to know what to do now: how to get personal financial help, and how to get inside the post-Hurricane Katrina levee system so that, next time..."*

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# SOME OBSERVATIONS

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# ENGINEERING VIEW VS. PUBLIC VIEW

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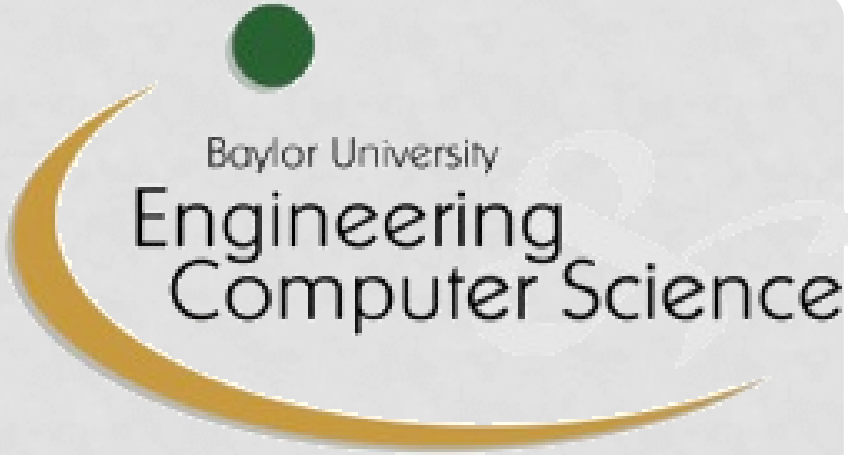
# LOVE-HATE RELATIONSHIP WITH TECHNOLOGICAL FIXES




# HAVES AND HAVE-NOTS?

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# ADDITIONAL OBSERVATIONS

# DIFFICULTY IN INTEGRATING DIVERSE SOCIAL AIMS (GILBERT WHITE)

- Structural flood protection
- Non-structural flood mitigation
- Systems and processes that serve the entire social spectrum, included the most vulnerable.
- Navigable waterways
- Healthy, sustainable ecosystems
  - Wetlands
  - Fisheries
  - Forests

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# LONG TIME FRAMES

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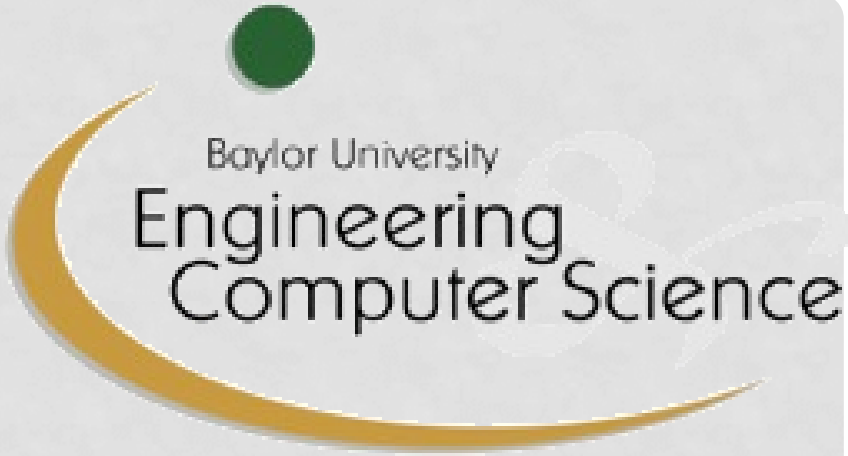
# SHORT VS. LONG TERM RISK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# PITFALLS OF ENGINEERING COMPLEX RISK REDUCTION INFRASTRUCTURE

- Unanticipated failure modes
- Poor communication of information
- Faulty assumptions
- Incomplete knowledge
- Lack of conservatism & redundancy
- Physical interfaces and transitions
- Long time frames
- Risk psychology
- Organizational interfaces and transitions
- Competing interests
- Organizational inertia
- Historical contingency & lock-in