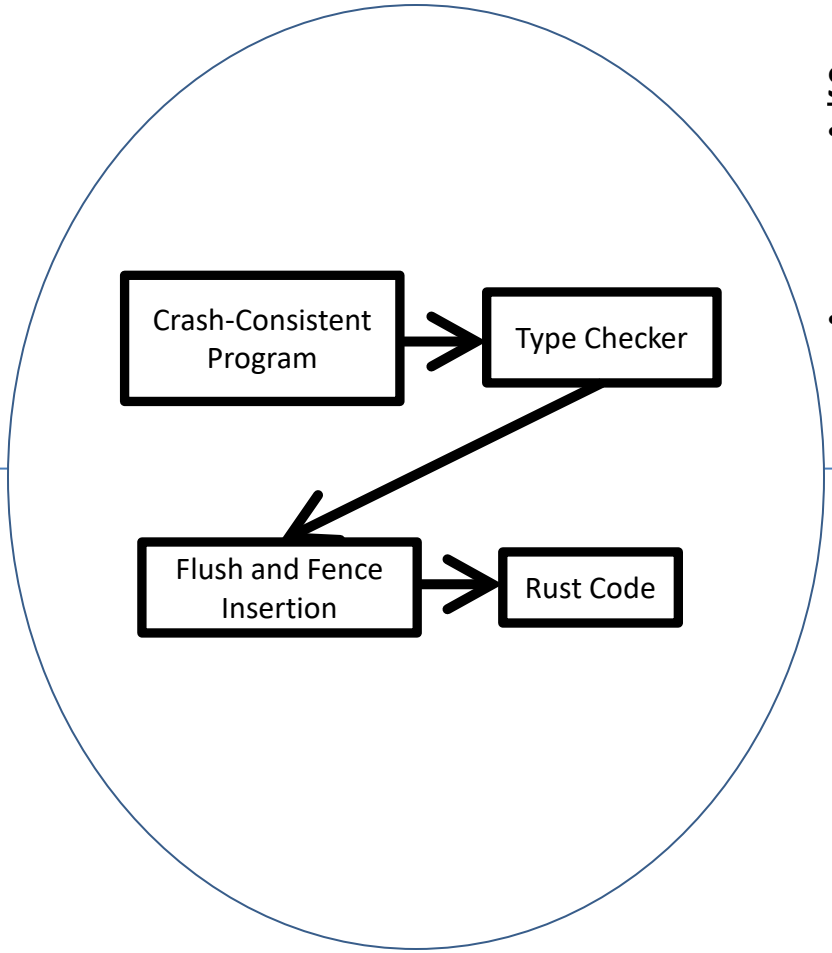
FMitF: Track I: Safe, Efficient Persistent Memory Systems

Challenge:

- Persistent memory and CXL shared memory can retain data across crashes, but crashes can leave data in inconsistent state.



Scientific Impact:

- New type-system based approach for taking care of checking persistent memory and inserting flush/fence operations.
- If it compiles, it is crash consistent.

Solution:

- Many crash consistent data structures follow common pattern.
- Design type system to check this pattern.

Project info (2220410 UCI & Univ. of Utah, Demsky, Burtsev)

Broader Impact and Broader Participation:

- Crash consistency emerging as problem in many different new memory technologies.
- Building verification tools.
- Covered ideas in graduate classes.