A East, “Modeling Independent Study,” Fall 2023.

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| Sep | Meet 1 |  | Data Introduction |
| Model Introduction | Parameterization Intro |
| Meet 2 | Prediction Strategies | Confidence Intervals |
| Evaluate Above | Make changes? |
| Oct | Meet 3 | Measures of “Fit” | Rejection Strategies |
| Statistical/Resampling Comparison brainstorm | -> |
| Meet 4 | Statistical/Resampling Comparison run | -> |
| Statistical/Resampling Comparison run2 | -> |
| Nov | Meet 5 | Parameter Prior Comparison brainstorm | -> |
| Parameter Prior Comparison run | -> |
| Meet 6 | Sensitivity Analysis brainstorm | -> |
| Sensitivity Analysis run | -> |
| Dec | Meet 7 | Writing! | -> |
| Writing! | -> |

The major objective is to (1) identify a handful of reasonable methods to compare models that are quite different and (2) incorporate comparison methods into toad paper.

Smaller objectives include (1) increasing awareness/understanding of relationship between tox models and other modeling realms, (2) increase R skills, (3) provide structure for collaborative work.

Significant reading:

Tarazona, J.V., Rodríguez, C., Alonso, E., Sáez, M., González, F., San Andrés, M.D., Jiménez, B. and San Andrés, M.I., 2016. Toxicokinetics of perfluorooctane sulfonate in rabbits under environmentally realistic exposure conditions and comparative assessment between mammals and birds. Toxicology Letters, 241, pp.200-206.

Tarazona, J.V., Rodríguez, C., Alonso, E., Sáez, M., González, F., San Andrés, M.D., Jiménez, B. and San Andrés, M.I., 2015. Toxicokinetics of perfluorooctane sulfonate in birds under environmentally realistic exposure conditions and development of a kinetic predictive model. Toxicology Letters, 232(2), pp.363-368.

OECD (2012), Test No. 305: Bioaccumulation in Fish: Aqueous and Dietary Exposure, OECD Guidelines for the Testing of Chemicals, Section 3, OECD Publishing, Paris, https://doi.org/10.1787/9789264185296-en.

Fisher J.W., Gearhart, J.M., Lin, Z. 2020. Physiologically Based Pharmacokinetic (PBPK) Modeling Methods and Applications in Toxicology and Risk Assessment. https://doi.org/10.1016/C2018-0-03297-1