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Request for Information on the National Digital Twins R&D Strategic Plan

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Via FDMS

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I'm surprised that the NSF is considering this request for developing digital twins since it requires a highly disciplined approach and not the cottage industry like approach we now use for model development in the biological sciences. NSF has never championed data or model standards or funded advanced modeling of biological systems at the sub cellular or multi scale level. The NSF has not funded the required theoretical underpinnings for this work either. The workforce is also woefully inadequate and there are few high quality research groups in the US with the requisite skills or broad knowledge and understanding of what it might take. Europe, on the other hand has invested in these areas. In addition, the use of new AI needs to be carefully thought out since AI not only provides, black box solutions with unknown failure modes, but without proper validation, AI responses can be unreliable. Unleashing this in a clinical situation could be problematic. The key to this is building a model credibility assessment system without which there's no way to determine quality of a given digital twin. I'm sorry to sound so negative but this is the landscape I see.