

## **Molecular Determinants and Consequences of Specificity in Histone 2A Ubiquitination**

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### **Propositions**

1. To improve precision targeting of the ubiquitin system, the lysine specificity of E3 ligases and DUBs can be leveraged. (this thesis)
2. USP48 specifically counteracts BRCA1-induced H2A ubiquitination and guides the length of DNA end-resection. (this thesis)
3. The nucleosome facilitates RNF168 catalyzed ubiquitination through substrate assisted catalysis. (this thesis)
4. The DNA damage response is guided through integration over the three H2A ubiquitination sites in crosstalk with other post-translational modifications. (this thesis)
5. Transient, low affinity multi-protein complexes are notoriously hard to study with current methods of structural biology (this thesis)
6. To understand a biological system it is necessary to understand the molecular machines at work
7. We are limited in what we can comprehend by what evolution allows us to perceive. Put simply: We can never fully understand.
8. It's as much about embracing the fall as it is about getting up and trying again.
9. The view is better from the giants' shoulders than from a stack of high impact journals.
10. "Everything new is on the rim of our view, in the darkness, below the horizon, so that nothing new is visible but in the light of what we know." - Zia Haider Rahman
11. Dogmatic adherence to some preconceived idea has its place in organized religion, not scientific discourse.