

# Special Analytical Seminar



## Ariel Alperstein

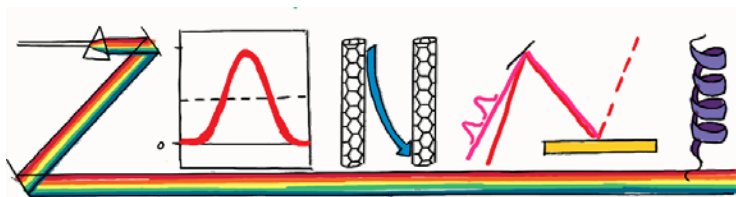
*University of Wisconsin*

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*“Are cataracts an amyloid disease?  
A 2D IR investigation into protein aggregation  
and treatment of cataracts”*

Age-related cataract disease prevents clear sight in more than 50% of people over the age of 75. Cataracts are caused by the aggregation of crystallin proteins in the eye lens that leads to blurred vision. Many *in vitro* experiments on UV-irradiated crystallins result in amyloid fiber formation; however, there is little evidence that cataracts in human lens tissue contain amyloid deposits.

We measured cataractous, native, and UV-irradiated human lens tissue using 2D IR spectroscopy. We have also measured the interaction of small molecule drugs with cataract lens tissue. These molecules were shown to partially restore transparency in cataract lenses, but the actual secondary structures of proteins in lens tissue have not been investigated until now.



Thursday  
April 20<sup>th</sup>  
12:15 pm  
1315  
Chemistry