Conclusions

1. Structure (interface and bulk) reflects the information relevant to a food system (Martin Leser), nanometer to millimeter scale important.
2. Neutrons add to the information in a complementary way
3. Most relevant is the evolution of the structure as a function of temperature, external stresses (flow, high pressure), ingredient concentrations (including digestive circumstances), mass transfer, and time
4. If you have a question on structure that you cannot answer ask one of the neutron persons you met here

Wishlist:

Instrumental:

Incorporate flow set-ups (bulk and interfacial shear/elongational/dilatational)
Incorporate simultaneously complementary structural measurement equipment
Use small system sizes
Be able to incorporate equipment like microwave, shear devices, flexibility, optical techniques
Chemistry lab next to experiments/storage space for longer time samples
Deuterating facilities/metal isotopes

Wishlist ways of working:

- Facilitate flexibility, have short experiments, try first and come back later, refine plans before planning for longer measurement times
- Shorter term planning (express SANS), maximal few months between idea and action
  Educate via workshops and training, online courses, simulators
- Indicate desired level of support

System aspects ...

- Morphology of separate structures (fibril, platelet, finer topological details) from molecular assembly
- Morphology of mixtures of morphologies and according phases (phase behaviour)
- Water effects (hydrogen bonds, protein structure, dynamics of exchange, syneresis
- Take into account dirty systems, i.e. many components
- Packaging and food as 1 system (laminates, porosity)
- Dairy: investigate caseins in 4D; calcium balance in milk; interactions surfactants; water dynamics and fusion of micelles in cheeses, protein-polysaccharides;