Allergen Databases and Structural Biology

1. What are the determining factors for including a protein in an 'allergen database'? Should inclusion criteria be developed for allergens that are included in each database, and stated upfront in a transparent way? Is there a need to try to standardize inclusion criteria? Should a list of proteins excluded from the database be maintained, particularly after each update of the database?

2. How often should databases be updated—annually, semi-annually?

3. What other information besides sequence data should be included in a database [e.g., published or publicly available references providing the evidence that the protein is an allergen (IgE binding, clinical data, sequence, etc.)]?

4. What are the appropriate search tools and criteria that should be associated with an allergen database?

5. What kind of data quality control should be expected from database developers? Should there be requirements for archival and documentation of data for these databases? For only those databases being used for regulatory submissions?

6. What is the 'state of the science' in regard to structural databases of allergenic proteins? Have any new quantitative criteria for potential allergenicity, using amino acid sequences, 3D structures and epitopes of known allergens been investigated/developed?

IgE Cross-reactivity

1. Does a protein exist that has less than 35% identity with a known allergen but still exhibits IgE cross-reactivity with that allergen?

2. What is the molecular basis for IgE cross-reactivity?
3. How informative is evidence of in vitro IgE cross-reactivity in predicting clinical reactions?

4. What are the best methods for assessing whether IgE cross-reactivity occurs with a novel protein?

5. In in vitro assays, how do you distinguish between IgE cross-reactivity and non-specific IgE-binding?

**Allergen Specific IgE Testing in the Diagnosis of Food Allergy**

1. How important is the matrix when diagnosing food allergy - use of purified protein(s) vs. crude extracts of food?

2. Do multiple allergens cause synergistic, competitive, additive, etc. responses when tested together?

3. What is the frequency of obtaining allergen specific IgEs without having biological significance (that is, without having symptoms)? In other words, how predictive of a food allergic response is the detection of allergen specific IgEs.

4. Define allergen specific - of what importance is cross-reactivity?

5. What is the preferred method of allergen specific IgE testing and why?

**Serum IgE Testing**

1. How do you assess the biological or clinical relevance of apparently specific IgE?

2. Are immunoblots and ELISA/RAST or similar methods complimentary or redundant?

3. What is the predictive value of histamine release and is there a way to standardize that for specific proteins using small numbers of specifically allergic donors?

4. Can "quantitative" serum IgE values be meaningfully compared across allergens?

5. How might you assess the importance of in vitro IgE binding data to pure proteins that may be present in a food at 10 ppm, compared to those that are present at 1,000 ppm?