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## Professor Walter Kauzmann's group in the late 1960s

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Professor Kauzmann's group was at first glance quite diverse, students and post docs working on a theory of solutions, protein structure, single crystal optics, the structure of water, reactions in density and centrifugal force fields, and solutions at high pressures. But, all were aspects at understanding the underlying nature for the structure and functions of the life's essential proteins.

### 1. The Climate

The atmosphere was one of both an easy, casual approach to learning, typical of much of the Princeton Chemistry Department, and the panic of realizing that working for Prof. Kauzmann had committed one to working on a problem that few people in the Chemistry Department were willing to tackle. We also felt that our meager knowledge was dwarfed by Prof. Kauzmann's breadth of knowledge and sheer brilliance. Our lives revolved around three axes: passing monthly exams (cumulative exams known as cumes), figuring out how we were going to solve our thesis problem, and that minor component, the rest of everything.

### 2. Asking a question of Prof. Kauzmann

Often, in our discussions over coffee in the lab,

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some question of P Chem would come up that we knew we had to ask Prof. Kauzmann about. The scenario was often played out by one or more of us going into Prof. Kauzmann's office asking the question and having him say something like 'Scheraga wrote a paper on that a few years ago. Let's take a look at it.' Then he would walk to the wall of journals in his office, reach up, and pluck a specific issue, and, turning around, flip open to the page where the Scheraga article was—clearly the article he intended and right on subject. We never really figured out how he did it.

Another response to asking a question would be a trip to the white board. Here, usually several of us would watch while Prof. Kauzmann derived some property of matter, or solutions or structure—anything we had asked—in crystal clear fashion, from first principles. We all would nod knowingly, understanding every nuance—our questions answered. Then, somewhere approximately 10 or 15 feet outside the office, on the way back to the coffee pot across the hall, our newfound knowledge would evaporate. Yes, we remembered the answer, usually, but had no idea how Prof. Kauzmann had taken us to it. The more audacious would go back and look at the board again, get the 'Ahah' feeling again, but have it evaporate again on crossing the hall. It would be a long time before we understood anything as well as Prof. Kauzmann seemed to understand everything.

### 3. The challenge

With his reputation for encyclopedic knowledge, Prof. Kauzmann was often the subject of subtle, but direct challenges by faculty and post docs. These challenges took place in Prof. Kauzmann's office with interested listeners posted just outside the door in the adjoining small conference room. One poor soul, who knew about geography and aerial mapping, and who was familiar with the USGS maps of the US, went into discuss the subject, hoping to show he knew more about mapping than Prof. Kauzmann. On this day, just after the challenger revealed that he got the US survey maps every year and examined them in detail, Prof. Kauzmann revealed that he got the North America issue and studied them for errors. The crushing blow was delivered when Prof. Kauzmann brought out a letter from the USGS commending him for finding a significant error in the maps. We later learned that Prof. Kauzmann's interest probably stemmed from his purchase of a farm at the tip of

Cape Breton Island. Prof. Kauzmann discovered his property was not described properly on the official maps of the area, and he was instrumental in getting it corrected. Perhaps that started the hobby and the quest for other errors in the official maps.

### 4. Dinner at the Graduate College

Somehow we invited Prof. Kauzmann to dinner at the Grad College. I think we got a bottle of wine with dinner because we had faculty at our table. Someone mentioned that Prof. Kauzmann had gone to grad school with a well-known P Chem textbook author, Walter Moore, I believe. Then Prof. Kauzmann rattled off a long list of other well-known authors he went to school with. Of course some said, 'I didn't know you went to school with all those famous people.' Prof. Kauzmann answered, 'Don't you all expect to be famous, too?' I do not think we made the list of famous authors. Most of us went into industrial research at places like Polaroid, Western Electric, Mobil and DuPont.