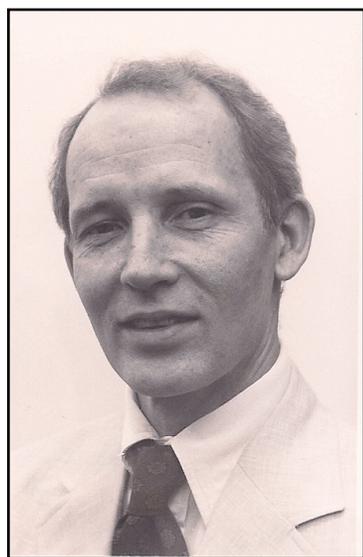


# In Memory of Frank R. Meeks

1928-2006



Frank Robert Meeks was born on 05 December 1928 in Fort Worth, Texas, the second of three siblings, and grew up on his parents' cattle ranch. Though his father's ancestors had moved to Texas from New England in the 19th century, his mother was a first generation Russian immigrant. As a consequence, Frank was proficient in both English and Russian and, during his early years as a faculty member, occasionally did translation work for *Chemical Abstracts*, as well as administering the proficiency test for graduate students electing to use Russian to

fulfill their foreign language requirement for the Ph.D. degree.

Frank received his elementary and secondary education in the public schools of Texas (where, he always claimed, his teachers consisted mostly of geographically displaced New England school-marms). In 1949 he received a B.S. degree in chemistry and mathematics from Texas Christian University. He began graduate school at Vanderbilt University the next year, but transferred to the Polytechnic Institute of Brooklyn in 1951, where in 1956 he completed a Ph.D. in physical chemistry under the supervision of Rudy Marcus (Nobel Prize 1992).

Following a postdoctoral appointment with Oscar Rice at the University of North Carolina, Frank joined the faculty of the Department of Chemistry of the University of Cincinnati in 1957, where he gradually worked his way through the ranks, becoming

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an Associate Professor in 1960 and full Professor in 1977. He retired in the summer of 2002 after nearly 45 years of service. During that time he published more than 30 papers dealing largely with the thermodynamics of diffusion and, in more recent years, with the statistical mechanics of plasmas, and also supervised the doctoral and master's theses of more than 35 graduate students. In addition to his research and teaching, Frank also served for many years as Chair of the Physical Division and of the Departmental Promotion and Tenure Committee. At the university level, he also served as Chair of The Faculty Grievance Committee and was, for many years, active in the Krouse Club, an informal inter-departmental social group designed to foster interdisciplinary contacts between university faculty.

For most of his 45 years at the University of Cincinnati, Frank taught the course in chemical thermodynamics, a subject which is seldom a favorite among students because of its overly formal mathematical structure. Yet, in spite of this, Frank was quite successful as a teacher. Thus the 1972 issue of *Insight* (a product of the student activism of the 1960s whose purpose was to evaluate courses and professors), though complaining, as expected, of the course's heavy emphasis on math, nevertheless noted that "Dr Meeks is an excellent professor who knows his subject thoroughly" and whose "unique approach aided in the learning of an extremely difficult subject."

More personal was an anonymous note from an undergraduate chemistry major which was slipped under the door to Frank's office:

*I thought before the year started that thermo was going to be a really dry course. I now find it my most interesting of all. I've had little background in thermo in other courses, and I disliked them very much. You manage to keep me so involved that I can't believe it is for real. It makes me feel better that I am going through college and at least enjoying some of the courses in my major. So I thank you for the effort which you put into the course and into*

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*teaching. Signed: A no-longer desperate chemistry major.*

Such responses were not unexpected, given Frank's personal philosophy of teaching:

*Teaching, in my opinion, is not limited to the classroom; much of it occurs in the office or in the hallway or in a few cases, I can recall, over the telephone. Nor has it been limited to interaction with students, as I have a steady - and welcome - procession of faculty of this department and others past my desk in search of guidance in physicochemical problems. We all consider ourselves excellent, interesting, and interested teachers of our subject, else we would go immediately to another way of involving ourselves in chemistry ... It is regrettable that on-paper documentation of teaching effectiveness is in principle unobtainable, since the teaching process itself is an instant-to-instant interaction between teacher and student. One can only rely on hearsay, point to experience, and observe the achievements of students at a time far later than when the actual "teaching" was done.*

In keeping with this long-range point of view, many of Frank's better students kept in touch with him for years after taking his course and would often visit or write him in order to update him on the progress of their own careers.

In 1976 Frank expanded his course materials into the manuscript of a major textbook entitled *Classical, Statistical and Non-equilibrium Thermodynamics*, which he personally characterized "as a culmination of many years of thinking about, teaching about, and researching in areas which are of primarily thermodynamic aspect, so that much of the material will represent an unique approach to the use of the laws, potential functions, partition functions, and raw data of thermodynamics for chemists." The publisher and reviewers of the manuscript were equally enthusiastic, describing it as "well written," of "considerable merit," and as "a good marriage of classical, statistical, and nonequilibrium

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thermodynamics," but, in the end, for reasons that are not totally clear, it was unfortunately never published, thus depriving the pedagogical literature in this subject of a valuable contribution.

During his years as a graduate student at Brooklyn Polytechnic, Frank lived in a neighborhood favored by many Mideastern immigrants. As a result he became a lifelong devotee of many aspects of Mideastern culture, and especially the aesthetics of belly dancing and the beauties of oriental rugs. In later life he not only collected oriental rugs, he also learned to weave and repair them and sometimes lectured on the subject to various local organizations. In 1963 Frank spent a year in Montpellier as a Fulbright Research Fellow, where he added an appreciation of French art and antiques to his list of interests, as well as a proficiency in the French language (indeed, the late John Alexander used to say that Frank was the only person he knew who could pun in three languages). By 1981 Frank was financially able to build a modern, architecturally unique, multilevel home in Hyde Park which he filled with French antiques, paintings, and his beloved oriental rugs. Known for his impeccable manners and dress and his wry sense of humor, he also cultivated a taste for high end automobiles, being particularly fond of Cadillacs and Jaguars.

Frank was for many years a counterweight to that other stalwart of the Physical Chemistry Division - the late and fabled Hans Jaffé. Frank's measured and calm disposition contrasted sharply with the strong personality and blustery style of Hans, and the two frequently disagreed, a situation which proved very stressful to Frank. Feeling that his very substantial talents were not being properly acknowledged, he was initially embittered by these experiences, though, by the time I met him in the late 1980s, he had managed to take a more long-range philosophical view of what had occurred and, after Jaffé's death in 1989, even professed on occasion to miss his former antagonist. There was a large component of acceptance and resignation in this philosophy, which reminded me in many ways of the wisdom of Ecclesiastes:

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*What profit hath a man of all his labors he taketh under the sun? ...  
The thing that hath been, it is that which shall be; and that which  
is done is that which shall be done: and there is no new thing  
under the sun.*

Often, as new faculty members are wont to do, I would assail him with questions about departmental management, such as "Why do we do it this way? Why not try ...? etc, etc." These were always met with an indulgent smile and a story that began "We tried that back in 19\_\_ , but ..."

When Frank retired in the summer of 2002, he simply walked out of his office, leaving it to others to dispose of the contents, nor did he ever return to the department or make use of the retirement office that he was given on the fourth floor. However, he did make an effort to attend the weekly lunches that Fred Kaplan had organized for many of the emeritus faculty. Though his many non-chemical interests and large circle of friends and social contacts promised a long and contented retirement, it was not to be, as shortly after his departure became official he suffered a heart attack and was hospitalized. This was the beginning of a cycle of hospitalizations and rehabilitations driven by a seemingly endless series of ever more serious medical problems which came to an end only with his death four years later on 06 December 2006.

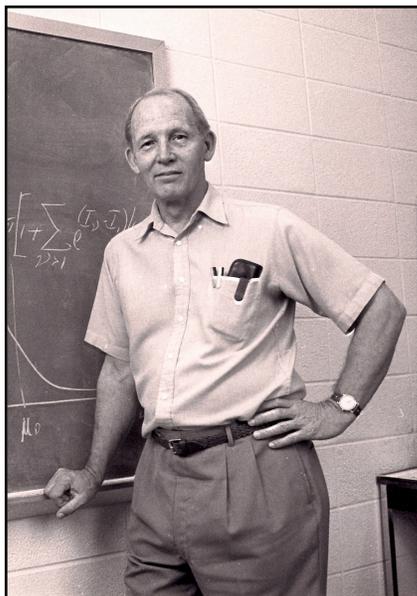
I know from personal conversations with Frank that, in matters of religion, he was a nonbeliever, though he never attempted to force his views on others or to openly criticize their religious beliefs. Despite the horrific medical problems he encountered during his brief retirement, he maintained his disbelief to the end, which probably accounts for the fact that, in keeping with his final wishes, there was no formal public funeral or memorial after his death. As a consequence, it would be inappropriate to sanctify his life and death with conventional religious platitudes. Though I never questioned Frank about his tastes in literature, I think, given his love of Persian rugs, that he would not object if instead we choose to use an appropriate quatrain from the 12th-century

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Persian poet, Omar Khayyam, which beautifully summarizes the agnostic view of life and death:

*Into this world, the why not knowing,  
Nor whence, like water willy-nilly flowing.  
And out again, like wind along the waste,  
I know not whither, willy-nilly blowing.*

Though uncertain whether Frank's view of life and death was quite so bleak, I am confident that, as a chemist who devoted his professional life to the study of statistical mechanics and the way in which order and direction evolve out of the willy-nilly motions of atoms and molecules, he would have thoroughly appreciated the underlying metaphor.



*William B. Jensen  
14 December 2006*

*A condensed version of this tribute was published on line by the McMicken College of Arts & Sciences in June of 2009.*