

# Personal and Scientific Reminiscences

Tributes to Ahmed Zewail



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## Preface

Apart from being a brilliant scientist, Ahmed Zewail possessed many other noteworthy qualities.

He was a highly successful and innovative educator, an outstanding lecturer, a creator of a new science city, a skilful negotiator, a successful fund-raiser, and an inspiring mentor and research supervisor.

He was an Ambassador for Science, a post he executed with distinction, and had the stature of a Statesman.

In addition to all these qualities, he possessed the gift of friendship: all those he came within his ambit were profoundly influenced by him.

He also had a great sense of humor and an infectious laugh that galvanized his colleagues and friends to undertake worthwhile initiatives.

He was also a loving husband and a devoted family man.

He was a faithful son of, and conferred great credit upon, his native country, Egypt.

These qualities and more are elaborated in this memorial volume, which we deem to be a worthy tribute to a unique human being.

Majed Chergui  
Rudolph A. Marcus  
John Meurig Thomas  
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## Chapter 3

# Stories from the Round Table

*Marshall Cohen\*, Charlie Campbell†  
and Rudolph A. Marcus‡*

Ahmed was a member of one of the famous round tables at Caltech's Athenaeum, where faculty would meet for lunch and discuss the events of the day, debate recent scientific results, and share an occasional joke. For his memorial on January 19, 2017 (appropriately held at the Athenaeum), his lunch companions were asked to speak about Ahmed and tell stories from his days at the table. The following are the texts of the speeches given that day.

*Marshall Cohen is Professor Emeritus of Astronomy at Caltech. He is a radio astronomer from the days when, to be a radio astronomer, you had to first be an electrical engineer. He was first from the table to speak:*

I am from the Astronomy Department at Caltech, not Chemistry, and did not know Ahmed from his work there. No, I knew Ahmed from the Round Table at the Athenaeum. Actually, as many of you know, there are several of these faculty tables, and there is a strong tendency for participants to sit at the same table day after day, and even to occupy the same seat. Ahmed

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and I usually sat at what is sometimes called the Old Folks Table, perhaps because the median age there is in the 80s. Currently it is around 86. I am close to the median, from above. Ahmed was below.

We used to have a lot of chemists at the Table. There was Jack Roberts, Jack Richards, Nelson Leonard, and Ahmed Zewail, and sometimes Aron Kupperman, and now only Rudolph A. Marcus is left. Of course, Rudolph counts for two, but we need more chemists.

The table was always livelier when Ahmed was there. Even when we were talking about soccer, or electric cars, or stellar evolution, his enthusiasm, and smile, and questions would keep us going. He was the center of attention. I remember very well several occasions when he came in, all smiles and evidently holding in a secret, and he let us in on some new result, and how it would be in *Nature* soon. He loved his work.

Ahmed was proud of his work in Egypt, of the fact that streets and schools there were named after him, of the stamps that carried his picture.

Ahmed needed to understand how things worked. He questioned me closely about radio interferometry, my own area, about the coherence and why the system was built in this way or that. He had an opinion about most things, or at least a question that usually needed a thoughtful answer. He did defer to Francis Clauser, an aerodynamicist, and for many years, the Elder of the Table, who had studied hieroglyphics and had a remarkable knowledge of Pharonic Egypt.

Ahmed and I would often walk back down the Olive walk, to our respective buildings; he to Noyes and I to Robinson (later, to Cahill across California Boulevard). We would continue the noon-time discussion, but, when it was just the two of us, we could be more intimate. Sometimes we talked about religion. I the secular Jew and he the secular Moslem agreed that religion was an important factor in the lives of many people, and should not be denigrated. He talked about his mother, a devout woman for whom religion was very important. I tried to describe some of the rules followed by orthodox Jews, and why they are important in that society.

Ahmed was a great scientist and teacher, and a good friend. We all miss him.

*Charlie Campbell is a Professor of Aerospace and Mechanical Engineering from down the road at USC, who joined the round table*

*during a long-term visiting appointment at Caltech and never left.  
He remembers:*

"A cappuccino...extra hot!"

This was how Ahmed would complete his lunch every day, shouting out the order while pointing to the ceiling. And he relished the coffee. I remember in particular that he used to take the raw sugar cubes that come with the coffee, dip them in the foam and then touch it to his lips and with a big smile suck out the juice. Now I can tell you, I've also ordered "A cappuccino...extra hot!" (I even tried pointing to the ceiling as I ordered) and, honestly, I don't think it was hotter than any other cappuccino, but I'm sure it made Ahmed feel like he was getting the special treatment he so justly deserved.

Along with Marshall, I had the privilege of eating lunch with Ahmed for nearly 10 years at the famous round table. Because of that, I was asked to say a few words about it. The table seats nine, easily expandable to ten, and occasionally to eleven, which is just about perfect for an inclusive discussion. The table was presided over by Francis Clauser and in the early days (or at least my early days) included as regulars or frequent visitors Ahmed, myself, Nelson Leonard, Ned Munger, Bob Christy, Charlie Barnes, Jack Roberts, Jack Richards, Lee Silver, Joe Kirschvink, Maarten Schmidt, Marshall Cohen, Rudolph A. Marcus, David Baltimore, Alice Huang, Ed Stopler, and Kerry Sieh (sadly too many of these people are no longer with us). And then there was the occasional outside visitor who could expect to be quizzed and hounded until every scrap of information had been drawn from him. This was a real Bloomsbury group. The attraction of the table was great conversation between intelligent well-informed friends. The topics were wide-ranging, from recent scientific advances (for which there was nearly always an expert available), history, and of course politics. An almost constant topic was foreign affairs, and Ahmed was our expert in the Middle East and the Muslim world, which after 9/11 became quite a job. Francis Clauser usually led the debate. Francis was quite a fellow and could argue both sides of almost any issue. He would weave the conversation around him like a tapestry. Often he would turn the conversation by pointing at one of us and shouting "You're dead wrong" — that is if you can imagine that being said in the friendliest

possible way. As Ahmed would sit directly across the table from Francis, he was by default the dead-wrongest of us all. But he would often respond with his wide smile and boisterous laugh.

Ahmed had other little quirks. He was fond of carefully scanning the menu while mumbling "Now what here has zero calories?" He was fond of reminding Bob Christy, who was President when Ahmed was promoted to Associate Professor with tenure, that his promotion did not come with an increase in pay. But that was all done in good humor (but as he told it over and over again — maybe not entirely in good humor). And finally he could make use of the resources at the table which were wide and varied. As Marshall mentioned, Francis Clauser, for the grand purpose of why-the-hell-not, had learned to read and write in hieroglyphs, and so it was Francis who translated Ahmed's Order of the Nile collar.

Over the years you learn a lot about a friend. There are things to be proud of: Ahmed deeply regretted that the Muslim world had fallen from the pinnacle of a thousand years ago when it lead the world in science and almost any other intellectual pursuit. At lunch, he pursued and debated the historical reasons behind the fall. He strongly desired to make it once again a center of science. You can hear this in numerous op-ed pieces that he wrote. In 2000, he laid the cornerstone for what was to become the Zewail City. When KAUST (the King Abdullah University for Science and Technology) opened in 2009, he was on the board. In 2011, he was in Cairo for the Tahrir Square protests during which he was alternately felt revered or feared for his life. Finally, first under Mubarak and then under Sisi, he was able to bring Zewail City into fruition.

And there are some that are not so good: Ahmed voted for George W. Bush in 2000 and quickly regretted it. I think he had too much faith that democracy would ultimately do the right thing and that he voted for Bush to free us from the scandals and sexual malfeasance of the Clinton administration. But he was soon appalled by Bush's fall off the cliff into war and failed international relations. Ahmed, of course, was vehemently against the Iraq war. I remember him spotting me following him on the path to the Athenaeum a few months before the start of the Iraq war, stopping and turning around, literally shaking his head and wringing his hands in frustration, saying "what are we going to do to stop this man?" Sadly we couldn't.



Ahmed attended the table nearly every day until 2010 when he just became too busy particularly after being appointed by President Obama to PCAST (Presidential Council of Advisors on Science and Technology), and his appointment to be the US Scientific Ambassador to the Middle East. That on top of KAUST, Tahrir Square, and Zewail City — and eventually his illness — left little time for us. For the last few years, we were lucky to see him once or twice a year (usually on a birthday, when there was cake).

And sadly that epitomizes the round table culture here at Caltech. Twenty years ago, there were four round tables and you had to show up early to get a seat at the Clauser/Zewail table. But for whatever reason, that culture is disappearing as the senior members that have passed are not replaced by younger faculty. Now it is easy to find five empty seats at the former Clauser table. But, if you talk to the those that grew up in that culture, they will tell you the advantages that come from being scientifically stimulated by lunch discussions, sometimes by direct scientific discussion, but more often by just being intellectually stimulated by non-scientific discussion. After all, science proceeds in incremental steps, but genius...genius comes from that rare out-of-the-box moment brought on by — who knows what? Wherever it comes from, it isn't from the next step in a derivation or, for that matter, from anything within whatever field you are studying. Sometimes it comes from an astrophysicist explaining astrophysics to an engineer, or an engineer explaining engineering to an astrophysicist, or maybe during an idle moment of a political discussion. But it ain't gonna happen if there have no outside stimulation and for this the round tables are invaluable. Ahmed certainly knew this. So young-folk, don't so easily pass up your opportunities and come join us.

Let me close by mentioning my favorite picture from his autobiography, one of Ahmed taking Hani and Nabeel trick-or-treating, with Ahmed wearing the sumptuous robes from his Oxford honorary degree. As Ahmed told the story, a neighbor asked him where he had bought his costume and Ahmed, always truthful, replied "Target."

*Rudolph A. Marcus is John G. Kirkwood and Arthur A. Noyes Professor of Chemistry at Caltech and is in sole possession of the 1992 Nobel Prize in Chemistry. He was in Singapore during Ahmed's memorial, but sent the following short message for Charlie Campbell to read in his stead.*

Dear Charlie,

I am sorry that I will miss your presentation today that perhaps will include life with Ahmed at the round table. I am here in Singapore, interacting with some 100+ high school students from a variety of countries (9th International Science Youth Forum). Had I been at the memorial in honor of Ahmed today, I certainly would have commented on the utter delight of our countless walks between Noyes and the Ath on our way to and from the round table lunches in those pre-Nobel halcyon days and on the influence on our research.

All good wishes and regards,

Rudolph

*For this submission Rudolph added the following "...some of the remarks I would have made had I been at the memorial:"*

I first met Ahmed when he visited the University of Illinois in 1975 and I was chairman of the Chemistry Staffing Committee. As kindred spirits, we enthusiastically "hit it off," our age difference of some 23 years notwithstanding. The department was looking for someone involved in molecular beams, lasers, and chemical reactions. It was almost a match. Ahmed's interests were in molecular beams, lasers, and dephasing of coherence. In any case, the department offered the position to someone else, and Ahmed returned to Berkeley for another year postdoctoral with Charles Harris, and in 1976 came to Caltech. Clearly, Ahmed did not bear a grudge. Harry Gray as the next department chairman and Ahmed as a vigorous young chemical physicist searching for new faculty were both influential in my coming to Caltech from Illinois in 1978.

Ahmed would not have minded my telling this story, since he was very fond of it himself and its irony. The next 25 years or so were ones of glorious camaraderie and discussions, many of them on our way to and from the Ath round table. Initially, in some of these discussions, he tried to persuade me to get back to theory involved with real experiments and

I tried to persuade him to move from coherence to reactions. In any case, both changes occurred and probably would have occurred without the discussions. Our offices at Caltech are next door to each other and often I would hear his booming and enthusiastic voice that radiated warmth. Sadly, the hall is now quiet.