JOEL ELKES

Interviewed by Fridolin Sulser

Kalamazoo, Michigan, October 14, 2008

FS: It is Tuesday October 14, 2008. We are in the main boardroom of the Fetzer Institute in Kalamazoo, Michigan. I am Fridolin Sulser and I have the great honor and privilege to interview, Joel Elkes for the fiftieth celebration of the ACNP in 2011. Joel has been the first president of the ACNP. He has been there at the inception of the College and he played a key role in the evolution of the two interrelated fields, basic neuropsychopharmacology and biological psychiatry. He made his mark with his visionary approach of linking basic research and clinical psychiatry. I’d like to start the interview, Joel, by asking you a few questions about your background and how you got involved with neuropsychopharmacology before we talk about the inception of the ACNP in 1961. You could start telling us a little bit about your background; where you came from, your education and your involvement with the field.

JE: Well Fridolin, it is a very special honor for me to talk to you about something which happened fifty years ago or longer. I, as you know, was born in Koenigsberg, in Eastern Prussia on the border of Lithuania, a Baltic Country on the border of Russia. I went to a school in Lithuania, where every subject, from trigonometry to Voltaire, was taught in modern-Hebrew. Teachers were masters of their subject, and wrote the textbooks as they taught. I literally remember stenciling their lectures into textbooks in the summer for reading in the autumn. How I got into Psychopharmacology is still a mystery to me. I do not really know. I know that it is the fulfillment of what the Germans call Weltanschauung, arising out of my preoccupation with modern physics. I remember staring in awe at the cloud-chamber photographs of the early physicists. It was extraordinary. They held the mystery of the forces of which held the universe together. I went from physics to physical chemistry, from physical chemistry to the study of monomolecular films and on to medical school at St. Mary’s in London where I was in the company of three giants. One was Alexander Fleming, the discoverer of penicillin, who taught me bacteriology; the other figure was my Dean, Sir Charles Wilson, also later Lord Moran physician to Churchill and the third was Sir Almroth-Wright the great neurobiologist, discoverer of the typhus vaccine. Somehow the bridge to psychopharmacology was molecular recognition in immunology. I became very interested in the immune system, and very early on began to regard the immune system as a sort of liquid brain, a tissue, which has memory, learns from experience very much like the tissue we carry in our skull. So I got from physical chemistry to immunology and to psychiatry, which became a deep interest. My father was a distinguished physician in Lithuania and directed my reading. He directed my reading towards the writings of Paul Ehrlich, towards psychiatry, psychoanalysis, Freud and so on. Somehow there seemed to be a way of linking the economy of the tissue of the body to the economy, which goes on between people; to link the society within the skin to the society outside the skin. So I began to consider deeply, from the beginning the linking of the systems within the body to the systems outside the body. I could not make the break because we had no real basis of the knowledge of the biological substrate of mental processes. There was no link available nor was I equipped to do that, because my mathematics was poor. So, I didn’t know what to do about it except to observe the phenomena. There, we were very fortunate at St. Mary’s hospital where I studied because we had wonderful lecture demonstrations on the psychoses. We had a wonderful collection of mental hospitals in which I visited frequently; and I became absolutely fascinated by the phenomena of mental disorder which I saw in mental hospitals.

**FS: Joel, Can I** interrupt you for a minute. You mentioned that you were at St. Marys’ Hospital in London. I assume this was before you became the head of the first Department of Experimental Psychiatry in Birmingham.

JE: That came later. I was in Pharmacology at the time. I had gone to medical school at St. Mary’s Hospital, London and was working in the Department of Pharmacology. Then, to make it very brief I had followed my chief and friend Alistair Frazer to found the Department of Pharmacology in Birmingham where I backed into Psychopharmacology. It was not driven; it was much more a bumping into phenomena which didn’t make any sense and which in some way had to be conjoined. And in that department, in my early work, I was very intrigued by membrane cell surfaces and so on. Alistair Frazer was interested in fat absorption and not the nervous system; he was interested in chylomicron, a particle which appears in the blood after a fatty meal, and the architecture of that particle. He gave me the task to find out what makes that particle and find what the covering of that particle is which keeps it, emulsified. So I was forced to look at a lipoprotein. I went from there on to the study of the lipoprotein, which is ubiquitous in the nervous system, myelin. We used x-ray diffraction following the wonderful work of Frank Schmitt from St. Louis to study the crystal structure of living membranes. We were, I believe, the first to study living myelin in the living cell. We constructed a cell which allowed us to irrigate a sciatic frog and test the viability of a segment while shooting x-rays through it and getting crystal picture of myelin; seeing the living, liquid structure alter slightly but in a predictable way as a result of ether drying and so on. So, I was edging into the brain by creeping-up the myelin sheath. That is how I got into the brain. At the same time we were beginning to work on the distribution of enzyme systems, particularly the cholinesterases, in the brain. In watching the maturation of the nervous system, and the distribution of enzymes in the maturing of the system we found that some areas are rich in cholinesterases. By that time I was already deeply into neurochemistry; I had finally found a way to get into the field. At about the same time, we are still talking of the 1940s, probably about 1948, ’49 or possibly 1950, ’51, before the discovery of chlorpromazine, Jean Delay came to London and gave a talk on catatonic stupor. I went to the lecture and was deeply impressed by the syndrome of the catatonic state which was common in mental hospitals at the time. We began to study the effects of Amytal (amobarbital), amphetamine and then Myanesin (mephenesin) that just came out, on this syndrome. It became quite clear that the two drugs had different effects. Amytal like an Andersen fairy tale, brought patients out of their stupor; they began to talk, recognize their relatives, ate their meal with relatives on Sunday and so on. Amphetamine drove these people deeply into stupor and Myanesin relaxed their muscles but did not affect speech. So you had a principle of a selectivity of drugs on the syndrome that alerted me to the fact that maybe we are dealing in catatonic stupor with a state of hyperarousal, which is muted by Amytal and enhanced by amphetamine.

FS: It is overwhelming listening to the scope of your research interests. You started off with physical chemistry, then, went into chemistry, then into pharmacology and all the way to the clinic. You have in a very beautiful way integrated basic and clinical disciplines.

JE: I was beginning to do it at that time.

FS: This is in Birmingham.

JE: We are in Birmingham.

FS: In the first Department of Experimental Psychiatry?

JE: No, no, that came a little later. Why did it come? Because the university asked us what on earth we were doing? What is this strange field, what do you call it? And we said that we were working on “drugs and the mind”. Drugs and the mind, not the brain! The Mind! And, that became known as the Drugs and the Mind program. Then fate knocks on my window again. There was a department, a small obscure department on Mental Diseases Research which was loose in structure, administered from the Dean’s office that came under the Department of Pharmacology and I became head of it. Suddenly, I had two rooms and a lab to work in and then came a wonderful opportunity of Philip Bradley coming to my lab. You see, there was a base in chemistry in our work that was bridging across to the clinic but there was nothing in-between, to help you to study pharmacological intervention in the living conscious animal. So I discussed our task with Philip and we decided the first thing we must do is develop a technique, which would allow us to study the electrical activity of the brain in the conscious animal. It took Philip nine months to work out the technique. It was a very elegant technique of implanting electrodes into the cortex and subcortex in an intact animal, then bringing the electrodes out in the back of the animal and attaching a little plug to the electrodes that the animal could be plugged in the electrical recorder that would record the electrical activity in the brain of the moving alert animal.

FS: Well Joel, I see a connection here to my teacher in Zurich, W.R. Hess.

JE: My goodness, yes, indeed.

FS: Did you know him?

JE: No, I did not know him. So, that was the bridge between Neurochemistry and the Clinic, the cat’s electrophysiology. Then came the moment when I could compound the whole thing into a program which I showed the Rockefeller foundation when they came to see me. What I showed was that there was a connection between neurochemistry, electrophysiology in the conscious animal and behavior in patients.

FS: When was that?

JE: This was still two years before the discovery of chlorpromazine. And then Alastair Frazer supported me and said “why don’t you create a department for this field. What shall we call it?” And I had experimented with the term “experimental psychiatry” in my head for some six months; an experimental department which brings experiments to psychiatry, and I called the department, Department of Experimental Psychiatry. The small department was created in 1951 and I still remember the day when it happened. I was an intern in Norwich State Hospital at the time and in the list of interns and staff outside the superintendent’s office, I was at the very bottom: Intern, Joel Elkes. When I came into Dr. Kettle’s superintendent’s office, with the copy of a telegram which I’d just received from Birmingham that I had been appointed Professor of Experimental Psychiatry, he slapped his thigh and said “My God, that’s the fastest promotion I’ve ever seen at this hospital”. This is a true story. So I suddenly had a Department of Experimental Psychiatry, which I believe was the first one in the world.

FS: It was the first one.

JE: Then, one day, Dr. Thrower, who was the clinical director of a pharmaceutical company, walked into my office and said ”this is not a routine visit”. Then, he carefully unlocked his briefcase and gave me the copy of a paper by Delay and Deniker and said, “this is astonishing”. And he also said, “yes, that’s why, I am here. We have got the patent in England for Largactil (chlorpromazine) and would you carry out a controlled trial?” So, I went to Charmian, my wife, who was given the responsibility of organizing the trial and make it work. We worked at the same mental hospital in a small research room and in that room we carried out the study of Thorazine (chlorpromazine) on 27 patients. I still remember walking into the boardroom at the end of the trial; the papers were on the table, the code was broken and the numbers went on the board. It became very clear that in 7 patients out of the 27, there was striking improvement on the drug and striking relapse on the placebo. Suddenly we were in Psychopharmacology! That’s how I got into Psychopharmacology. I’ve given you the outline of this torturous past which led me to Psychopharmacology; the steps on the way were very, very unpredictable. I didn’t know what I would bump into next.

FS: Joel, this is absolutely amazing how you covered such a scope from physical chemistry to neurochemistry to electrophysiology to psychopharmacology and to clinical psychiatry.

JE: Well…

FS: This was Birmingham and I guess that the next big step was when you met Seymour Kety and he invited you to come to the US.

JE: Yes. Then, I started commuting and exchanging information. I remember particularly Hy Denber coming over.

FS: This was in 1957?

JE: Before that, I remember being in the States; Smith Kline and French arranged for a meeting between Seymour Kety and myself. And I come into the lab and Seymour Kety was very busy. Shining, vibrant Seymour comes out and when he sees me his face falls saying with every gesture, “Oh, God, not another visitor” kind of thing. Then we go out to lunch, we talk and we go on talking, and it goes on and on and on… Seymour tells me of his dreams; he was just going from Philadelphia to the NIMH as Director of the Intramural Program of the NIMH and I was just going to Birmingham to assume the Chair of Experimental Psychiatry in Birmingham. And we compared notes. We dreamt of the future of psychiatry and the future of research. Seymour was a prince of a man, a remarkable person of vision, clarity, integrity, and enormous talent. I think he should have stayed with the opening up of cerebral circulation and get the Nobel. Then Seymour and Bob Cohen were talking about the Laboratory of Clinical Science at the Institute.

FS: Was Kety chief of the Laboratory of Clinical Science?

JE: No, no, he was head, scientific director of NIMH. And he asked me to head-up the Laboratory of Clinical Science. I was so torn, at that time because the University, the Rockefeller Foundation and Medical Research Council in the UK had done a great deal for me so that I could not bring myself to move from Birmingham, and I said, no, I can’t come. Then, a year later Seymour calls me up, and says, “Joel, I offered you the best job I’ve had; it was so good that I took it myself”. And he stepped-down form his position as scientific director of the Institute and became director of the Laboratory of Clinical Science. But he kept on talking to me in Birmingham and told me that there was a building available at St. Elizabeth’s, the William Alanson White building and he offered to refurbish it, to build labs. They sent me plans to Birmingham, and catalogs of equipment and sitting in my little office in Birmingham I designed what were to become my labs in the William Alanson White building.

FS: Joel, I remember that building from the time when I was a post-doctoral fellow with Brodie and we had discovered desmethylimipramine (DMI), the secondary amine metabolite of imipramine. There was a fellow at St. Elizabeths’ who was with you and conducted the clinical trial with it. His name was Freyhan.

JE: Freyhan, Fritz. I remember standing in front of the William Alanson White building when I arrived in Washington, looking up. It was a five-story building and I said to myself, my God, how do we make a community in this building? How do we build a community where we manage to fashion a science which is transdisciplinary in nature and put a team into one head, if you see what I mean. How could we train people who are experts in several disciplines in this building and build a bridge between them. And I think we managed to do this; it was an extraordinary community in extraordinary times. We had people there working on the frog brain and we had people working on enzymology. We had people working on the relation of metabolism and behavior and we had people doing clinical trials, like Freyhan, Hordern and others .

FS: Maybe Joel we’re getting close in time to the inception of the American College of Neuropsychopharmacology (ACNP) now.

JE: Yes.

FS: If you could perhaps talk about that and then we could go back later on to your research philosophy; to Joel the researcher and Joel the gardener. So, if you could tell us how the inception of the ACNP came about.

JE: There had been quiet discussions among some people about the need for a body where information and discoveries in psychopharmacology can be shared in a congenial way in a congenial environment. It started with Ted Rothman.

FS: Who?

JE: Ted Rothman, who unfortunately was not quite given his due. Ted Rothman, Jonathan Cole, Paul Hoch, myself and others convened a meeting in the Barbizon Plaza Hotel in New York to discuss how to advance Neuropsychopharmacology.

FS: This was in 1960?

JE: Yes. November 1960. There were twenty invited people and twenty guests. There, at that meeting, ways and means were being discussed and one suggestion was to form a college of Neuropsychopharmacology, a scientific society and incorporate it in Maryland. They did that and the constitution of the college was being prepared. And finally, the first organizing meeting of the ACNP took place, I have a photograph of it here now, please see us eating dinner.

FS: Joel, if you could go back a moment and tell us again about who you consider to be the key figures shaping the field of Neuropsychopharmacology.

JE: Well, there were so many excellent people and there were so many people active. But the key people I would think were Seymour Kety, Paul Hoch, the commissioner for mental health for the state of New York, extraordinarily active at that time and Jonathan Cole who had already formed the Psychopharmacology Service Center in Washington.

FS: And of course you had in the basic sciences Bernard Brodie.

JE: In the basic sciences, a key figure was Brodie, no question.

FS: You know, Brodie’s Laboratory of Chemical Pharmacology was truly a Mecca of Psychopharmacology. I could never understand why he didn’t get the Nobel Prize.

JE: Yes, I agree.

FS: Two people from his lab got it, Julius Axelrod and Arvid Carlsson. And Brodie who was really the father of biochemical pharmacology never got it. I don’t know why.

JE: Politics is something I avoided continuously and it is due to my avoidance of politics that I’ve lived to 95!

FS: Then Joel, you got elected the first president of the ACNP. I had the pleasure of reading your lecture which you delivered when you were the first president. In it you defined the place of Neuropsychopharmacology and you gave an identity to the new science. And you said “Like a modern Rosetta Stone, psychopharmacology holds the key to much that is puzzling today. It provides the key to three languages: the nervous system, the endocrine system and the immune system”. Well, Joel, I would love if you could elaborate a little bit on these beautiful concepts that you developed.

JE: Well, I feel that in the 1960s, there was a lot of fluidity and mobility in the field, and crossing over into disciplines there was an emerging understanding that there are four footings of the new discipline: neurochemistry, which was maturing so to speak because we did not have anything more in neurochemistry than written in Thudichum, electrophysiology, animal behavior and clinical trials. These were the four footings, which I saw as essential elements of any psychopharmacological enterprise worth its name. At the end of that meeting we created the committees which still exist in the ACNP. We also created study groups on various subjects.

FS: That was lovely, your idea of small study groups. I remember attending the Annual ACNP meeting as a post-doctoral fellow when we met in bedrooms.

JE: That’s right.

FS: Could you talk a little bit more about your idea of study groups?

JE: The idea was to select people from different discipline into small groups and give them the opportunity to talk to each other. That’s very simple and it developed very, very well. Study groups led to a sense of scholarship identity, of owning certain areas of psychopharmacology. And, it worked. I think I’ll read to you what I said at the time: “It is not uncommon for any of us to be told that psychopharmacology is not a science and that it would do well to emulate the precision of older and more established disciplines. Such statements portray a lack of understanding for the special demands made by psychopharmacology upon the fields, which compound it. From my own part, I draw comfort and firm conviction from the history of our group. For, I know of no other branch of science which, like a good plow on a spring day, has tilled as many areas as neurobiology”.

FS: Beautiful. Keep on going.

JE: “To have in a mere decade questioned the concept of synaptic transmission in the central nervous system; to have emphasized compartmentalization and regionalization of chemical processes in the unit cell and in the brain; to have focused on the interaction of hormones and chemical processes within the brain; to have given us tools for the study of the chemical basis of learning and temporary connection formation; to have emphasized the dependence of pharmacological response on its situational and social setting; to have compelled a hard look at the semantics of psychiatric diagnosis, description and communication; to have resuscitated, the oldest of all remedies: the placebo response for careful scrutiny; to have provided potential methods for the study of language in relation to the functional state of the brain; and to have encouraged the biochemist, physiologist, psychologist, clinician, and the mathematician and communications engineer to join forces at bench level is no mean achievement for a young science. That a chemical text should carry the imprint of experience and partake in its growth in no way invalidates the study of symbols and the roles among symbols which keep us going, changing, evolving, and human. Thus, though moving cautiously, psychopharmacology is still protesting; yet, in so doing it is for the first time compelling the physical and chemical sciences to look behavior in the face, and thus enriching both. If there be discomfiture in this encounter it is hardly surprising, for it is in this discomfiture that there may well lie the germ of a new science”.

FS: Well Joel, these are memorable words spoken by you as the first president of the ACNP. I wonder, what role did the ACNP play in your own work. And how do you feel the ACNP has shaped the field over the next years?

JE: I can only tell you that I looked forward to the excitement of the next meeting of the ACNP, year by year, as a boy looks to toy books. It was an extraordinary feeling. I remember in October and November, oh my God, ACNP is coming in December and how I was looking forward to it. Why? Because I found that among the colleagues there, languages developing that we could speak and understand each other. I could find sometimes, totally new, totally new areas opening up suddenly in a meeting by a presentation. I found extraordinary contact and enrichment and I felt home. The ACNP was my home! I used to go there regularly not only to listen to the stories, the same stories, told by the same people, with the same Élan; there was also a feeling of great seriousness about the ACNP. This was a very serious body. It meant its business; it created committees, which did their work. It created rules, which were followed. It gave guidance, which has guided us to this day in our work. I think it was to me a home base that was so absolutely necessary, because we had no moorings, a wonderful organization that grew and grew and grew.

I remember in the early days when I was still in Birmingham that Ernst Rothlin and Mrs. Rothlin came to stay with us and we discussed, with Bradley’s and Dr. Mayer-Gross’ participation, who was working with me at the time, the desirability of a journal in psychopharmacology and the desirability of an international association in psychopharmacology, which became the International College, the Collegium Internationale Neuro-Psychopharmacologicum. Mayer-Gross spoke to Jung of Springer Verlag and they were interested in founding a journal. And, then, we brought in Abe Wikler, a very shy and modest man, a seminal figure in psychopharmacology, as editor. His book on the relationship between pharmacology and psychiatry was one of the first real texts in the field. I also remember the wonderful time when suddenly the yellow journal, Psychopharmacologia, our journal, landed on my desk.

The World Health Organization became very interested in psychopharmacology and asked me to convene a small group of people in Geneva and we had a very good discussion. I wrote the initial draft of the working paper. Then, I remember getting a letter from the head of the Drug Programs of the World Health Organization, Dr. Wolf. The letter said you have given joy to a man who gets breathless as he reads your paper. And I didn’t know what he meant until I got to Geneva and found that Abe Wikler was dying from cardiac failure. When I was visiting him he hardly recognized me; he was on oxygen, his breathing at the time was terminal.

FS: Well, Joel, you have been the first president of the ACNP and you have given a new identity to the science of neuropsychopharmacology. Let’s go back a little bit for a little while to the ACNP and to the early meetings in Puerto Rico. If I remember correctly, we met at the beginning at the Sheraton and then we moved the meetings to the Caribe Hilton.

JE: Yes.

FS: If you could talk about the early days of the meetings in Puerto Rico and the people who were involved in running the organization and any fond memories you have.

JE: My fondest memory is simply the memory of Puerto Rico. I love the sun and I think what brought us to Puerto Rico was the love of the sun. We had wonderful times there and I remember particularly the meetings that Jonathan Cole and Oakley Ray organized later. With time Oakley Ray became the giant of the organization.

FS: You know I was the one who brought Oakley in as secretary-treasurer when I was president of the ACNP after Al DiMascio passed away. At a council meeting in New York, Larry Stein suggested that when I go back to Nashville I should ask Oakley Ray to run for secretary of the ACNP. Oakley agreed, ran and got elected and I think the ACNP has never been the same.

JE: Absolutely. Oakley was the spirit of the ACNP.

FS: I agree with you.

JE: There might be a rambunctious way about him but at the bottom of it there was dignity, there was grace, there was decorum. I think that he really was a remarkable man.

FS: Yes, I couldn’t agree more with you. Well Joel, of all the people who were there with you were people like Danny Freedman…

JE: Danny Freedman. I remember that the first contact I had with Danny Freedman was at a seminar at Yale where I mentioned something about that schizophrenia may turn out to be a biochemical lesion of the upper brain stem. That is the word I used. And he, little fellow that he was with piercing eyes, came up to me and gripped my hand, and said, you said it Joel, you said it, with a kind of enthusiasm which I’ve never forgotten. And we’ve corresponded about this idea since.

FS: Well, we also had Leo Hollister, who is not with us anymore; do you want to say a few words about Leo? He was our president in the 1970s.

JE: He was a fine person, a fine person.

FS: And Morris Lipton…

JE: Morris Lipton I knew very well. He came up from North Carolina.

FS: Chapel Hill.

JE: Yes. And I remember him doing a headstand in my living room. And Lou Lasagna., God, what a fellow.

FS: We had the Killams, Keith and Eva.

JE: I knew them very well. I knew them back in Birmingham. One of my colleagues, Jim Hance, joined them. I saw Eva from meeting to meeting and then gradually she became ill and invalid in a chair. But never, never did her spirits flag. They were a remarkable couple. They were very early in the field.

FS: And of course there was Dick Wittenborn.

JE: I knew him well. Dick Wittenborn was a very straightforward, honest, strong man.

FS: Do you want to say anything about the flavor of the meetings in Puerto Rico?

JE: Only that they were extravaganzas, of a sort. I couldn’t believe it that we could talk science in such company and in such a place. And then in the afternoon we were all in our swimsuits, walking around, talking and coming into the meetings in swimsuits very, very casual. I loved it!

FS: It is quite a change now from the early days when we met in bedrooms

JE: I remember the bedrooms. I remember particularly the hotel in Washington in which the first meeting took place, the Hotel on 16th street. All that I remember apart from the meeting was the short skirts and silk stockings that waitress’ wore. I remember it to this day.

FS: Well, it is already late Joel and I’d like to talk about your research philosophy, the concept of the Rosetta Stone…

JE: Oh, the Rosetta Stone…

FS: I think that this is such a beautiful concept. And it’s not only beautiful but it’s true! Joel, please talk a little bit about molecular communication.

JE: I will. In 1952 I gave a paper to a research association and I talked about that for neurotransmitters to be present enzymes should be present for their synthesis and destruction. I also said that enzymes should be responsive to enzyme inhibition and there should be a specific tissue response. Then I began to think of the concept of these molecules acting as transducers and transponders in the brain, facilitating communication. And I was struck by the fact that psychoactive drugs have peculiar properties of interaction with two or three neurotransmitters, and from the shared properties of psychoactive drugs and neurotransmitters came then the idea of psychopharmacology as a tool for understanding shared properties in molecules, leading to the concept of psychopharmacology as a Rosetta Stone for understanding the way that the brain communicates inside itself. I talked earlier about communication of the society within the skin and the society without.

FS: Before we leave we have to talk about one other great contribution that you made. And this is the making of people. I wonder if you could talk about what you called the “gardening”.

JE: I called it gardening. Well I tried to create a climate of receptivity, understanding, excitement and tolerance for ideas, for new ideas. I tried to create a language which was understood and which could go across disciplines. Let me put it this way. We created a clinical neuropharmacology research center with basic science labs at St. Elizabeths’ where Floyd Bloom and Nino Salmoiraghi worked. When you walked to the canteen to have your lunch, you saw a schizophrenic patient hallucinating under a tree; that is what I’m talking about.

FS: Joel, wasn’t Weil-Malherbe at St. Elizabeths’?

JE: Oh, yes, very much so. I brought him all the way from England.

FS: It was Montagu in Weil-Malherbe’s laboratory who reported in 1957 first on the presence of dopamine in the brain of several species, including man. Wasn’t Baldessarini from Harvard with you?

JE: Yes, and Sol Snyder, who had this wonderful career. He started as a resident. I think I could go through the list but it is rather long of people who came through the labs and who left their mark, everyone of them. They left their mark on me. But, I don’t think we have the time for that.

FS: We’re now in the year 2008, Joel and the field, our field has gone predominantly molecular. During the last few years we have learned more and more about less and less and I think it’s time to go back to your more holistic philosophy. I am wondering how you see the future will develop from now on?

JE: I see the future in linkages. Linkages! Linkages of the college with areas on which psychopharmacology clearly impinges but which remain undefined. I see linkages with psychoimmunology; linkages with endocrinology and linkages with people who have an understanding of message transmission, with information engineers.

FS: And behavior.

JE: And behavior.

FS: You know it is remarkable, Joel, that every prototype of psychotropic drugs got discovered in the 1950s at a time when we used behavioral correlates as drug targets.

JE: Yes

FS: And now in the last fifty years we haven’t discovered anything new.

JE: We are not looking in the right place.

FS: That’s right.

JE: We are not looking in the right place.

FS: It’s a very important message that you and I need to give to young people.

JE: Yes: Linkages, linkages and linkages.

FS: That’s right. Say it again, Joel.

JE: Linkages!

FS: I think that molecular pharmacology has to become functional again.

JE: Yes, exactly.

FS: We have to go back to W. R. Hess.

JE: Yes.

FS: Well, Joel, the last topic which I wish to cover is your work in the arts; the importance of art in medicine and healing.

JE: Well, thank you. That grows from a personal, very personal inclination. Let me put it this way. I ask myself why art? Why art? Why is art so powerful? Why does it influence people so profoundly? I suggest to you that art is so powerful because it reaches into the realm of the “No Words”. Words are limited. Words create a little universe of the sound and the meaning in which to convey. It is what lies between words that make prose poetical. It is the exploration of the in-between which art allows. As you know, I paint. And my painting arises out of feeling, a profound sense of communication with nature. It is a direct, very direct communication. What you cannot express in words you can convey in art. We started for example in Louisville at the end of my career, a program for the arts and medicine. We employed painting, drama, poetry, prose, and humor. We had some very gifted young people working with us and we started working in areas of post-traumatic stress in the Vietnam veterans. And I remember distinctly the occasion when an art therapist took a lump of clay and handed it to a patient who could not speak, who could not remember, who could not communicate and put it into his hand and said, “Tell me with this lump of clay”. And within twenty minutes that totally inexperienced young person fashioned a beautiful figure with another small figure draped across knees, like a Pieta and was excited and started talking about, “I didn’t kill that child. I didn’t kill that child. He just fell on my knees”. And went on and on about the time when he was there in the bush, in a native village. And he went on drawing, sculpting away until the last sculpture materialized, an angelic figure rising to heaven. And it was all…When I saw that and we have it on film, I was convinced, my god, it goes much deeper than words. When I paint I start by staring at an object. I keep on staring at it and staring at it until I hear a conversation between the object and its ghosts. A stone will speak to a ghost of a stone and there is a conversation between mundane and the mysterious taking place. And then you put it down. It is a conversation between the light and the dark, the visible and invisible. The trees have always bright leaves against the dark trunk; there’s a tint of nature about them. I have some paintings, which bring back what happened to my family, but indirectly, indirectly. I have never yet painted a truly direct painting… I have one, actually, called the Mass Grave. Sticks of figures lie in a pit. But apart from that what I am saying is art goes where words do not go. Art leads you into a world which is magnificent and art is something which should be part of the substance of medicine because it is the substance of healing like this young man began to heal for the first time in seven years by having a piece of clay in his hands. So, there are many, many opportunities and at The Phipps Clinic at Hopkins when I was there we had an active art therapy group. We had a very active art therapist, and Sally, my wife and I talk about it very often because Sally has much more experience than I have in art therapy and we hope to do something practical about it sometime.

FS: Well, Joel, I think this is a very unique part of your curriculum. If I remember correctly you created a program in Louisville on the arts and medicine.

JE: Yes. I did.

FS: Can you tell us a little bit about this before we close?

JE: I had a colleague in Louisville who worked with me and helped me create the program where therapy was applied as an accepted therapeutic modality for patients who are disturbed, who have fantasies, who have wild dreams and so on. We also gave students an opportunity to develop art as a hobby. They created art works. We had an exhibit every year of student works. We had readings of poetry, somebody wrote a novel etc. etc. etc. It was a magnificent program. It was part of a health awareness program for medical students. We thought, at Louisville, that it would give an opportunity for students to get to know themselves and each other. We introduced it at the beginning of the medical curriculum; before they became medical students, we invited them for a week, to come early and have an exposure to the opportunities that they all are heir to. They were segments on nutrition, exercise, meditation, training and awareness training, listening skills, small group work. We did this for a week before the medical school started. At the end of the week the Dean comes in and says, “Welcome to the medical school”. And they have already had an exposure to aspects of medicine, which they otherwise would have missed. And that program went really extraordinary well. We continued it for fourteen years at Louisville. We carried-out some studies, but, unfortunately, didn’t have the money to carry out a really good follow-up study. But, I know from an anecdotal remembering how much the students valued this exposure.

FS: Well, Joel, we have covered a remarkable story in neuropsychopharmacology; your journey through the field from physical chemistry, to neurochemistry, to clinical pharmacology, to the integration of basic and clinical sciences, and to the creation of the ACNP. We talked about the major people who have moved the field. We have talked about Joel, the research scientist and physician, and Joel the gardener of people! We have talked about Joel and the arts and medicine and Joel the painter. How remarkable, Joel. We are looking forward now to the fiftieth anniversary celebration in 2011 and I think you have inspired us for fifty years with your eloquence, your creativity and your undying curiosity. And for this, Joel, we thank you very, very much.

JE: Thank you very much for listening. This is a very special moment for me. I have really very little to add because there is such an enormous amount to say. I can only express my deepest gratitude, respect to the College for doing me the highest honor I received in my life. To give me the opportunity to be in the company of such wonderful people and participate in the growth of young people who came to the laboratory. We’ve all done well. We all keep on looking. We all have to hold lanterns, lanterns, which illuminate areas, which are still murky, poorly understood. Above all, I think, we have to create new alliances because the nature of our field compels us to choose and choose again people, from disparate and different fields. For example, the whole question of communication in the nervous system cries out for collaboration between neurophysiologists and psychologists, education experts, communication engineers, language-translation specialists and so on. And they don’t know what we know! And we don’t know what they know! And the knowledge has to come together by work at the bench and common new languages will evolve as we work together. So, we need alliances and alliances, even with strange fields; to be trans-disciplinarians; make it evident that this is a science like no other is, it has special characteristics of its own and will in time have earmarks by which it is known. It is not only molecular biology; it is not only electrophysiology; it is not only animal behavior; it is not only clinical syndromes. It is the conversation and the interaction between these areas, which matters and we must do all we can to enhance the conversation. This is what the college can do like no other organization nationally and internationally. We must bring people in, we can learn from them. We have an unusual opportunity as a College and we should move it as my wife Sally says: “move it, move it”. I’m delighted to be here and share this with you. Thank you very much.