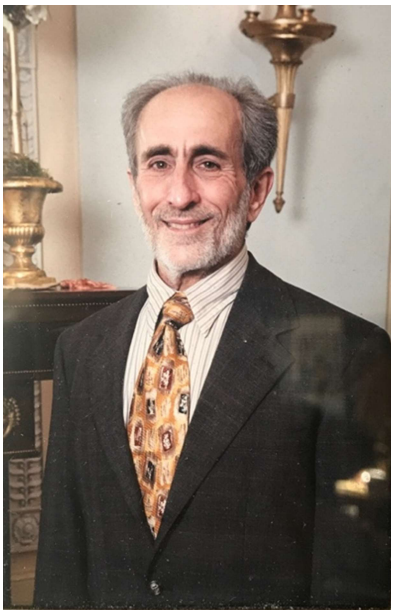
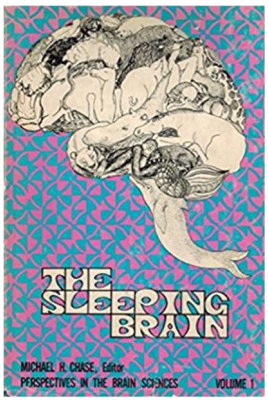


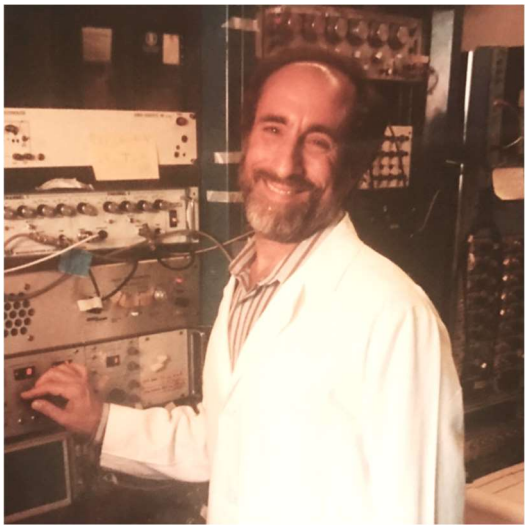
Michael H. Chase, Ph.D.
June 30, 2001.

Sleep has lost a giant in the field, one who has done more to grow the field of basic sleep research nationally and internationally through publications, research collaborations, congresses, student-centered training days and week-long annual workshops that set new standards of training excellence and community building. Michael Chase died of pancreatic cancer on Saturday January 27, 2018 in the arms of his loving wife, musician and artist, Mary Helen Harper-Chase, in their home in Bel Air, CA.

Michael Chase earned his bachelor's degree in Zoology and Sociology from UC Berkeley in 1959 with the plan of becoming a Psychiatrist. After one year of medical school, he realized that original creative scientific discovery fit his interests better. He switched and completed his Ph.D. in Physiology from UCLA in 1966. In 1971 Chase organized The First International Congress, Association for the Psychophysiological Study of Sleep, Bruges, Belgium and drew the design for that cover: *The Sleeping Brain (See illustration)*. He won a multi-site, multi-institutional training grant from the National Institute of Mental Health for training in basic sleep research and held the first of what would be an heroic streak of 26 annual workshops each inviting about 40 graduate students an postdoctoral trainees and an equal number of world renown sleep researchers who shared their insights, discoveries and scientific failures, highlighted critical unanswered questions, and by personal example, honesty, and accessibility enjoined the next generation of researchers and built a true, lasting community.




Michael organized a series of international congresses, the first of which he held in Cannes, France, in 1991. Attendees were treated to single track series of stellar scientific presentation, posters, and social events, including one highlight: his covert performance as a machete juggler and acrobat with a backdrop of hula dancers at the Luau dinner of the 1993 congress in Maui, Hawaii. This performance was so expert, disguised, and unexpected, that the majority of attendees did not realize it was Michael Chase up there at all. It forever earned him the affectionate title, "The Big Kahuna". Chase had a dry sense of humor, an "action potential" smile, and a streak of unforgettable mischievousness.



His seminal scientific discoveries include the role of the vagus nerve in sleep, the mechanisms of atonia, the effect of aging on motoneuronal function during sleep, affecting sleep apnea and other motor conditions, and more recently the mechanisms underlying synaptic plasticity as governed by sleep. His CV includes over 300 presentations and over 550 papers and abstracts, but there was so much more to him: he was a poet and artist (painting, sculpture) and patron of the arts, always including a segment titled *Sleep Arts* to the Summer workshop of sleep wherein the assembled scientists could also share their creative talents through a talent show, skits, music, dance, etc. The very talented Aprille Tobin, Michael's long time assistant, has been at his side making his groundbreaking visions a reality since 1989.

The effect of this one man on the entire field of sleep may never be fully appreciated, for he is responsible for the tenacity of hundreds of basic researchers in the field, and, by extension, their trainees and their trainees' trainees. To highlight his personal influence on some who knew him, we include a link to comments and reflections on Michael that have poured in.

*National Multi-Site Training Program for Basic Sleep Research, Summer Sleep Workshop, Lake Arrowhead, California, June 5-8, 1988.*

Community Obituary Reflections on Michael Chase

Michael has surely done more to advance the training opportunities for up and coming sleep researchers more than anyone else in the field. By tying together several sleep programs across the country in a training program, he introduced trainees into a professional network that would benefit them throughout their careers. That network was expanded by the Lake Arrowhead meetings. The very nature of those meetings built strong social and professional relationships and improved skills of the trainees. At Lake Arrowhead, we all talked to each other, shared ideas, and simply enjoyed each other's company. Something that many might have forgotten and the younger investigators never known is Mike's production of the Sleep abstracts indexes that most of us still have on our bookshelves. Before computer files and searches, they were a major benefit to the field. Thank you Michael for your dedication, hard work, inspiration, and generosity of spirit.
Craig Heller, Ph.D., Professor, Stanford University

In addition to his major scientific contributions (e.g., discovering the phenomenon of Reticular Response Reversal), Michael Chase brought more young scientists into the field of sleep research than anyone else I know. He did so joyfully and with great enthusiasm. I, and many others who are now senior scientists, am indebted to Michael for his constant support, encouragement, and action on my behalf. Thank you Michael.
Helen Baghdoyan, Ph.D., Professor, University of Tennessee

I would not know half the rogues and rascals that I love so dearly here in my sleep "family" without the incredible meetings Michael organized. Michael lured me into studying the mysteries of the sleeping brain through his irresistible Arrowhead meetings, then made sure I could continue on the path of discovery by arranging critical support (Mick Bier) for my transition to independence at a time when I myself could not see how I could possibly continue.
Gina Poe, Ph.D., Professor, UCLA

Michael had a big impact on getting me involved in the sleep community and his early research shaped how I understood REM sleep control mechanisms.
John Peever, Ph.D., Professor, University of Toronto

Notwithstanding Michael Chase's pioneering and seminal work in shaping our understanding of REM sleep motor regulation, perhaps his greatest legacy was grooming the next generation (or three) of sleep scientists through his training opportunities that brought seasoned researchers and trainees together in an intimate setting (most notably the Lake Arrowhead sleep meetings, which I had the pleasure of attending on three occasions). The sleep community has not only lost a giant in the field, but also an integral member of its close-knit family.
Peter Schwarz-Lam, Ph.D., University of Toronto

Funny, I was just recalling Michael to my 'from sleep to attention' course here at UCSD. What a great person. Clearly, he had a gift in bringing people together and advancing science.
What sticks out for me right now is a moment at the first or second Arrowhead meeting. I was by the fire in the lobby area with Alan Rechtschaffen and Michael and Mick Bier. I was shy and less confident in most things back then. The conversation at some point pertained to statistics and I managed to throw something semi insightful into the conversation. Nothing worth detailing really. Michael recognized it very quickly and subtly called attention to my unexpected victory. I've thought about that moment many times, because it shifted my perception of my potential value and was a cornerstone of a sort for developing confidence (and speaking out at all for that matter). I was esteemed for a moment in front of Alan Rechtschaffen who was already an absolute giant in my mind and in front of Mick Bier who was a bit intimidating to me at the time (sadly, we've lost Mick this year as well). In any case, my lasting memory of Michael is as someone who 'found me' buried in a stack of UCLA neuroscience PhD program applications and thought to give me a chance and as someone who saw that moment where he could lift up someone else and made sure to do it. I try to emulate that in my dealing with students to this day - that one subtle but clear acknowledgement of even a small insight can make such a difference.
So, I'm grateful to have crossed paths with that hip cat - I'm sure you all are as well.
Doug Nitz, Ph.D., Associate Professor, UCSD

When I think of people who have positively impacted my career, Michael Chase is always among the first people to come to mind. He played an essential role in getting me admitted to the UCLA Neuroscience program and keeping me in the program through rough times.
Equally important, I think of others who have had significant roles in steering my career, my life really, over the years. So many of those people I met and got to know only through the in-depth, intensive interactions that Michael Chase fostered at the Lake Arrowhead meetings, with a level of effectiveness that I have never seen any other professional meeting replicate.
Michael recognized and celebrated the interface of our science and our shared humanity, something we all too often neglect, by providing an outlet for creative expression at the Lake Arrowhead meetings. On the last night of the most recent Lake Arrowhead meeting that I attended, I sang a song parody, to the tune of 'My Love' by Paul McCartney:
"It's in the hands of Michael, and Michael does it good."
Rest in peace, my dear Friend.
Jonathan Wisor, Ph.D., Professor, Washington State University

There are so many wonderful memories that Michael, through his generosity, support, and love of science, helped create at the Sleep Training Workshops at Lake Arrowhead and elsewhere. From all the great performances at Sleep Arts in the wooded amphitheater, to the inspirations to write songs (who can forget Jonathan Wisor's Beatles parody "Chase Can Fork it Out"?), to the all night libations that went so long as to greet the early morning Arrowhead cleaning crew. But perhaps my favorite was the Star Wars spoof skit "Sleep Wars", where Luke Sleepwalker used the "Fos" to battle Darth Vasopressin and his Snoretroopers to find the answers to all things sleep. Michael's selfless drive to provide young scientists the opportunity to create, develop, and flourish will never be replaced. May he rest in peace, dreaming butterfly dreams.
Foster Olive, Ph.D., Professor, Arizona State University

Indeed our world is changing this year with the passing of Robert McCarley, Rene Drucker-Colin, then Michel Jouvet and now Michael Chase who brought so many of us together in the most special settings by meetings that regaled the scientific study of sleep along with its wonderful mysteries and the pleasures of probing them together.
With melancholy sadness,
Barbara Jones, Ph.D., Professor, McGill University

I worked with Michael on various projects and was always impressed with his intelligence, ability, and attention to detail. He was a driving force in the World Federation of Sleep Research. The field of sleep research is greatly indebted to him for his achievements as a scientist and coordinator of various activities such as Lake Arrowhead and international sleep research conferences.
Adrian R. Morrison, DVM, PhD, University of Pennsylvania

Early in my career, although I was trained as a clinician, Michael encouraged me to continue to pursue my interest in basic science. He included me in meetings, and never made me feel like an outsider among the neuroscientists but always made me feel valued for bringing a different perspective.
Later, when I transitioned into industry roles, Michael was supportive and encouraging... and continued to make me feel valued for providing a perspective from another vantage point.
Let's endeavor to honor his legacy by learning from each other's perspectives and encouraging each other to pursue our unique journeys in science.
Judi Profant, PhD, CBSM, Director, Medical Affairs, Sleep, Jazz Pharmaceuticals

Dr. Chase was an exceptional colleague, and an exceptional electrophysiologist.
I did not have the opportunity to meet him as a student, but in Pisa where I trained, his intracellular recordings in motoneurons were one of the first things I studied in detail to learn about how the brain changes between sleep and waking, and those memories will never fade.
Chiara Cirelli, Ph.D., Professor, University of Wisconsin

Michael was a kind, caring soul, and a visionary for the development of future leaders in the sleep field...I am forever indebted to him for sparking my love for sleep science
Jason Gerstner, Ph.D., Assistant Research Professor, Washington State University

Michael's seminal work on glycinergic control of muscle tone during REM sleep has stood the test of time. The Lake Arrowhead meetings were certainly a major contributor to the success of the sleep research field and instrumental in many peoples decisions to make their careers in this area of research. Although I only attended once I made lifelong friends and the meeting helped me feel that I belonged.
Ritchie Brown, Dr. Rer. Nat., Associate Professor, VA Boston Healthcare System and Harvard Medical School

It was an honor to have attended the Lake Arrowhead workshops that Dr. Chase organized. These workshops strengthened the sleep community's love for learning about sleep biology. It was a great opportunity to interact and learn from prominent members in the sleep community within a relaxed atmosphere. Thank you Dr. Chase for giving us the opportunity and I will cherish my memories from these workshops.
Sharshi Bulner, MS, Sunnybrook Research Institute, University of Toronto

Michael did more to shape the field of sleep research than anyone. He hosted the first international sleep meetings, started the Sleep Research compilation of papers in sleep, many years before Medline did this for the rest of medical science, had the idea, decades ago, of 1 sentence summaries of findings, an insight that is only now spreading through leading journals, ran the Arrowhead meetings, and also led the effort to make the "APSS" meeting student friendly. He was also was a living exemplar of the need for creativity and persistence to succeed in research.
Jerry Siegel, Professor, UCLA

Michael was not only a giant scholar, but also a brilliant artist and social entrepreneur. After a Lake Arrowhead training over a decade ago, he showed me his oil paintings - elegant, and also kindly gave me his treasure contacts of his company contracted accounting firm and an auditor specialized in SBIR grant auditing, as AfaSci, a startup I founded in the San Francisco Bay Area just got start. We all miss him.
Xinmin Simon Xie, MD, PhD, AfaSci Research Laboratories, Consulting Professor, Stanford University School of Medicine

Michael was a visionary leader who never wavered from his mission of advancing our field. It says a lot about Michael that his main way of achieving his mission was to foster the careers of so many young scientists. For those of us so fortunate to benefit from his guidance, we are his legacy. The students of our students are his legacy. I can't think of a more appropriate and lasting memoriam.
Marcos Frank, Professor, Washington State University

Michael's influence and dedication to advancing our field reached far past national borders and inspired many young hopefuls around the world. I was one of those, and I can honestly say that Michael was a supportive rock for me from day 1 – someone who always had an ear to listen, and somehow always fired back with exactly the advice you needed. His outstanding contribution reflects not only in his scientific work, but in his dedication to raising new generations of sleep researchers along the way.
In 2001, a lucky chance brought me to Michael. From my first Sleep Training Workshop in Uruguay that year, I rarely ever missed meetings he organized since. These meetings played a huge role in truly making me feel like a member of the 'Sleep Family'.
Now this Family loses a giant, but to be honest, with the enormous legacy Dr. Chase leaves behind, I don't think I'll have to speak of him in past tense at all.
Irma Gvilia, Research Biologist/Principal Investigator, VA Hospital, UCLA

My earliest recollections of Michael Chase include his polished presentations on state-of-the-art electrophysiology. He collaborated with and trained many talented investigators to obtain intracellular recordings from spinal motoneurons during sleep and wakefulness. These papers from Michael's laboratory made clear that sleep research is a significant part of mainstream neuroscience. One example is the discovery that the decreased excitability of alpha- and gamma-motoneurons during REM sleep is replicated during the REM sleep-like state

caused by pontine administration of cholinomimetics. During my postdoctoral and junior faculty years in Boston, the scientific debates in sleep research were numerous and, shall we say, spirited. This was particularly so between some investigators on the East and West coasts. Rather than regard me as ennemi héréditaire, Michael invited me to his laboratory. This enriched my scientific development and, as important, introduced me to his colleagues, many of whom remain friends today. As the testimonials here verify, Michael's mentorship was repeated on a grand scale via the Multi-Site Training Program at Lake Arrowhead, California. For these experiences, and the friendships fostered at Lake Arrowhead, I always will be grateful.
Ralph Lydic, Ph.D., Professor, University of Tennessee

Surely Lake Arrowhead was the single greatest contribution to the development of our field. Indeed, didn't most of us meet there. Think of those great lunches. His research contributions were cornerstones of our field. Yesterday I was teaching and undergraduate class on sleep, the topic being control of REM sleep. The GABA switch in the brainstem remains the key.
Dennis McGinty, Professor, UCLA

Michael Chase was the best mentor that I ever had in my entire career. The Basic Sleep Training Workshop at Lake Arrowhead was like a 'family gathering for Christmas festivities' , a 'meeting of the minds' meant for nurturing young sleep trainees. Not only just fun stuff that was going on there but the exchange of ideas, debates, and the intense learning that one has to face cannot simply be replaced by any other training. Mike was meticulous in planning things and at the end of the day, he made sure the objectives were met. It was a launch pad for many trainees. It not only motivated them, but made them think critically about any scientific problem. At a personal level, I felt Lake Arrowhead meetings were therapeutic for me. I felt as if I went into an incubation at an Asclepian Temple to cure myself. After the meeting was over, I would start to work with a renewed vigor, enthusiasm, and with clear thinking. His contribution should be spoken as much as possible and as long as possible. It should not vanish as the time pass by. We all must cherish him in our memories.
S.R. Pandi-Perumal, MSc., Editor-in-Chief, Sleep and Vigilance

I have particularly fond memories of a Lake Arrowhead Meet (a long time ago) that Michael had presciently dubbed "The molecular biology of sleep"- at that time I didn't think there was much "molecular biology of sleep" but this turned out to be a career changer for me as Michael and his recruited staff showed us the molecular tools that were possible and could be applied to sleep research. I remain in his debt for this and for the many other fine LA (not LA) meetings that helped forge a unique and wonderfully collaborative network of sleep researchers- all this from a sleep electrician, but really a pioneer in the investigations of neuron-based functional sleep circuits. Although his main region of interest was brainstem and lower motor circuits, his kind of approach is now extrapolated to sleep circuits throughout the brain, using the molecular tools he had a big part in getting us to think about. Thank you Michael for everything and RIP.
Robby Greene, PhD, Professor, UT Southwestern

Michael Chase impressed me at hello back in 1988 – I was a post-doc attending the Summer Sleep Workshop at Arrowhead. I was then, and remain now, awestruck by the level of leadership and devotion Michael showed as mentor and role model to so many generations of sleep research trainees. Through his example, he fostered so many attributes that we value throughout our careers, such as having the courage to innovate, standing up for what we believe, and taking time to laugh at ourselves. Michael always challenged himself, whether it was at the bench, or on stage juggling fire (literally). Michael's legacy will forever be measured not only by his research accomplishments, but by the admiration, respect, and success of so many Sleep Trainees. Let us never forget that each of us stand on the shoulders of exemplary mentors like Michael Chase. May the strings of our universe bind us together forever and always, my friend.
Dale Edgar, Ph.D. Founding Partner, Novion

Through Michael's foundational research and long standing contributions to foster mentoring, he leaves a legacy of influence effecting all of sleep research now and in the future. I feel honored to have known him over these many years."
Gerald A. Marks, Professor, Ph.D., Professor Emeritus

It is difficult to review all of Michael's contributions to the development and dissemination of sleep research; any of those discussions would include his efforts for SRS, establishing the World Sleep Society, the Arrowhead retreats, the UCLA Sleep training program, and numerous other unique symposia, some of which were small groups, organized for sleep-related exchanges. His work in discovering what we know about early motor development during sleep, with precipitous reversals in that control in the first few weeks of life, are currently the focus of major clinical endeavors for those searching to understand disordered breathing in infancy. Then came a series of studies describing the control of neuronal membrane properties during REM sleep, and the role of particular neurotransmitters in that regulation, both aspects which are critical in in understanding both early development and mature control of the musculature during sleep. All of these efforts, including his not-often-recognized ability as an artist (his home was a work of art, filled with his oils and sculptures, and his t-shirts provided a remarkable integration of light-hearted impressions of the sleep field) leave us with the reality that we have lost a Giant in our field.
Ron Harper, Ph.D., Distinguished Professor, UCLA

Michael will always be remembered as the big kahuna by sleep researchers who were lucky enough to have known him. He put his life and soul into the meetings that brought students and faculty together in a way that none of us can easily forget while he welcomed and encouraged the friendships and collaborations that were made under his watch. The sleep community will be poorer with his loss. Thank you, Michael, for everything.
Christopher Sinton, Ph.D., Adj. Assoc. Professor, University of Arizona

Michael was a truly creative educator and most effective and caring mentor who elevated all who interacted with him. His commitment to sleep research and sleep medicine was an invaluable factor in the growth and development of our field nationally and internationally. The Lake Arrowhead Trainee Workshops were the highlight of my professional career and were responsible for the launching and enhancing the research and careers of all who attended and resulted in wonderful lifelong friendships. So many wonderful memories!! Thank you Michael!
Mark Mahowald, MD, Professor, University of Minnesota

Early on during my medical training, I became familiar with Michael's seminal work on motor control during REM sleep. Not even planning a career in sleep research, back then Michael seemed to me like an unreachable giant standing on the highest pedestal! During my first visit to his lab, I presented him and his group part of an ongoing collaborative study (this was our first face-to-face interaction). I was so nervous presenting before him that I cannot recall a word of what I said, and I am certain that my performance was way worse than how I perceived it. What I clearly remember is Michael telling me: "That is wonderful, Giancarlo. You can build your career based on these results", and continued by giving me a clear perspective on what would work best if I decided to pursue it. That episode marked me, in that it promoted my interest in a career in sleep research. That episode also changed the way I viewed Michael Chase, who suddenly became –as for many, many other trainees in the Sleep field– a friendly source of frequent advice, inspiration and encouragement! RIP Michael.
Giancarlo Vanini, MD, Assistant Professor, University of Michigan

I became a post-doctoral fellow of Mike's team at UCLA in 1998. After three years, I returned back to Uruguay to start my own program in Sleep Research. However, I continued collaborating with him until now; in fact, we have two papers "in revision" that are co-authored by Mike.
Working with him both at UCLA as well as Websciences transformed me into a sleep researcher. In addition to the impressive science that the team used to do at that time, I admired the strategical view of science that Mike had. He was a visionary; he almost automatically distinguished a good, realizable and finally productive idea from others. Also, he had a magnificent capacity to organize the team, and direct smoothly the work toward the objective.
I also admired his science writing. He had the ability to create a master-piece of each document. Once, when I tried to modified a sentence of a paper draft, he told me: "no, this particular sentence is perfect…, I have been working on it for a week!".
Although in public he seems to be a serious person, in private he was very nice, kind and funny. He used to crack jokes without any smile. One day I said to him "Mike I have this great idea…". And before even I tried to explain he responded: "OK, but I have no money…!", and then he smilingly asked what that was. I loved that answer and I use it as a "leitmotiv" with my students.

On another occasion, I was raising the issue of the renewal of my US-Visa. He told me "the best thing for you to do, is to marry with an US citizen!". As he knew my wife, Mike was intentionally joking. He continued, "Yes you have a wife…, but you can marry again!".
Mike loved to use Latin terms in his papers. I remember asking him for the meaning of "*vis-à-vis*", that he wrote in a draft. He answered: "I don't really know…, but it sounds great!"; of course, he was kidding and then lectured about it.
For the Uruguayan neuroscience community, Mike has been a real "Maecenas". Uruguayan scientist such as Francisco Morales, Jack Yamuy, Giancarlo Vanini, Ronald McGregor, Alberto Pereda, Pablo Castillo, Cristina Pedroarena and Ines Pose, among others, have worked or collaborated with him. Mike also contributed enormously with the development of sleep labs in our country. In fact, Mike was an "ad-honorem" Professor of the School of Medicine, of the Universidad de la República, Uruguay. For this and much more, we owe Mike a lot.
Pablo Torterolo, MD, Ph.D., Professor, Universidad de la Republica de Uruguay

I love going to scientific meetings. It is one of my favorite things in science. Getting to learn about novel results, methods, views, talking to brilliant, inspiring people, who have the same nerdy, highly specialized interest that I have – neuroscience of sleep. No wonder I went to many. And I loved all of them. One stuck out, though. The sleep training workshop at Lake Arrowhead, organized by Michael Chase. I had the fortune to participate in three different years. They were so intellectually intense and inspiring. I got to meet fellow junior scientists as well as big names in the field, with much time outside the schedule to talk about everything that is so interesting about sleep and about what's challenging in a life as a scientist. The amount of knowledge and soft skill I gained during these intense workshops is incomparable to any other training event I have ever done. The bonding with other researchers in the field invaluable. I am truly thankful to Michael Chase for having made that possible.
Lars Dittrich, Ph.D. Postdoctoral Associate, Deutsches Zentrum für Neurodegenerative Erkrankungen, Bonn

Michael Chase was a great scientist that advanced our understanding on sleep. We still refer today to his great work demonstrating with Dr Soja that motoneurons are hyperpolarized by glycine during active/REM/paradoxical sleep. Michael Chase was a generous man that brought so much to the field. Like many of us, I have so many great memories of Lake Arrowhead. Michael Chase offered me this remarkable and unique opportunity to make myself part of a community, a family with a common interest on sleep. Although very young in research, I met professors, had serious conversations or chats, and gained the self confidence I needed to pursue a career. It was definitely a unique experience. Thank you so much Michael, we'll miss you.
Christelle Peyron, Ph.D., Centre de Recherche en Neurosciences de LYON, Equipe SLEEP

A *Science* paper in 1978 by Michael Chase at UCLA and Yoshio Nakamura from Tokyo Medical and Dental University rocked the scientific community. Their finding of trigeminal motoneuron hyperpolarization during REM sleep in the undrugged, behaving cat preparation provided direct evidence for postsynaptic inhibition that underlies the atonia phenomenon of REM sleep. In the same year, Michael and Francisco Morales reaffirmed the similar occurrence of the membrane hyperpolarization among spinal motoneurons during REM sleep. These scientific breakthroughs were inspirational to me.
Two years later, I joined Michael's lab in UCLA as a postdoc and stayed with him for two years. I was ecstatic the first time I witnessed the state-dependent changes in motoneuron excitability in cats. Upon my re-joining his labs in late 1998, he and I embarked on a new project to seek intracellular evidence for the REM sleep-related hyperpolarization from hypoglossal motoneurons. Our pioneering intracellular data were published in 2015. Over the years, Michael's discovery of the membrane hyperpolarization as a basis for motoneuron suppression during REM sleep impacted immensely on more detailed mechanistic studies involving membrane receptors and ionic species that regulate the well-established motoneuron hyperpolarization accompanying REM sleep atonia.
As a mentor, Michael was instrumental to the success in my research endeavors since the 80's era. His dynamic thinking motivates me tremendously. With his encouragement, we were successful in expanding the horizon of research fields from motoneuron studies to apnea/hypoxia-related apoptosis of hippocampal pyramidal neurons.
As a person, Michael was compassionate to me. One time when I got sick, he gave me his personal cell phone number and told me to feel free to call him up for help. His true love is scientific explorations. In addition to that, he was also talented in the fine arts like oil painting.
Michael is the mentor I spent most of my research career with and I miss him dearly.

Simon Fung, Ph.D., *Research Scientist, WebSciences, 1998-present; postdoctoral trainee-Chase Labs, UCLA School of Medicine & Brain Research Institute 1980-1982*

I have many fond memories of Michael's creativity and personal interactions but will instead focus on his science and lasting impact. Having just completed my doctoral thesis on tonic bulbospinal inhibition of lumbar nociceptor driven neurons in 1983, Michael had invited me to interview with him and Francisco Morales for a postdoctoral position to investigate the pharmacological basis for REM atonia. I was fascinated by their published work at that time and their ongoing experiments which focused on REM atonia mechanisms.

Michael had such a guiding influence in my research training during my years in his UCLA labs. I will always remember with great fondness, his impeccable timing for popping in on the research group to quickly check on each experiment's status and to inquire on what, if anything else, was needed for the experiment's successful outcome. At the time, we were collecting data to implicate glycine as the inhibitory neurotransmitter responsible for motoneuron shunting during REM sleep. His encouragement along with his supervision of my training provided me with endless inspiration to collect and/or analyze intracellularly recorded data in what were rather difficult, time consuming experiments. Weekly lab meetings were always invigorating and he set the stage for conducting and accomplishing "next to impossible" paradigm(s) with infectious enthusiasm. He truly was a pioneer when it came to designing electrophysiological experiments to investigate how the brain controls motor outflow during sleep. I will always remember when he invited world-renowned scientists to the lab to participate for weeks or months at a time in his projects. What an incredible opportunity he created in his own lab for nurturing international scientific interactions.

During my time at UCLA in Michael's labs, he also imprinted valuable communication and grantsmanship skills onto me and we published many papers together, which are now highly cited. When I began my assistant professorship at UBC, Michael encouraged me to explore how trigeminal and lumbar sensory neurons are modulated during sleep vs. waking states using the research skills sets I had learned with him on motoneuron systems. He wished me and my family all the success when I left UCLA for UBC. From that point onward, as we explored how lumbar and trigeminal sensory pathways were modulated during sleep, I interacted with Michael mainly at the Association for Professional Sleep (APSS) and Society for Neuroscience (SFN) meetings. He always stopped by my labs' presentations for one-on-one exchanges on our work and displayed his admiration for our findings with key replies: "This is absolutely fantastic work. ... Make sure the other fellas in the (Chase) lab see your stuff here. ... Keep up the great work and let me know how I can help you". Michael was always keeping track of his previous trainees and wanting to enhance their success and this is one of the many endearing qualities of this man.

Approximately ten years ago, I received a phone call from Michael. "Hi, its Michael. Its been a while. How is it going?...I have a great idea for a grant application - a joint venture between Canada and US investigators." This phone call led to numerous discussions, phone meetings and eventually culminated in the submission of a rare Canadian Institutes of Health Research Sleep Team Grant that was fully funded.

So while I left his labs in 1989 to pursue my own interests, I thought I was on my own to stake out my research career. How wrong I was. It's clear to me now that Michael always had and always will have a presence in my research lab and life.

You will be missed Michael, rest now….

Peter Soja, Ph.D. Professor, Pharmacology & Neuroscience, University of British Columbia, Vancouver, Canada
*Postdoctoral Trainee 1983-1985 and Assistant Research Physiologist, 1985-1989, Chase Labs, UCLA School of Medicine & Brain Research Institute*

Michael made all my professional dreams come true. Since the age of 12 when I learned about the disorder narcolepsy, I wanted to study the sleeping brain. He made this possible by accepting me into the Sleep Training Program, and then into his lab as his PhD student. In this way, he placed me in an ideal position to fulfill my life's ambition, and he did it in such a graceful and generous manner. During the 5 years I was under his mentorship, I experienced nothing from him but kindness and respect, even when he was faced with my spectacular mistakes and ignorance. Every time I met with him to discuss my data, experimental design, or to go over my writing, he started each interaction with a compliment, which immediately put me at my ease. He was always positive, and smiling, and while I am sure there were many moments where I irritated him, and my writing in particular probably drove him nutty, I never saw this reflected in his behavior towards me. I really was blessed to have such a mentor.

Michael lives on, as others have commented, in the way by which those of us he mentored now approach the mentoring of our students. The generous and respectful way by which he interacted with me is channeled when I supervise my graduate students. This is because if there is one thing I am certain of in this world, it is that Michael's style is the best and most humane way to achieve the goal of improving the performance of a student, so that they have the best chance to become an independent researcher. Michael's approach is also the most decent and fulfilling way to interact with people. This might be the most important lesson I learned from him. Michael made a significant and tangible impact towards improving this world. His science unraveled some of the great scientific mystery regarding how our brains work, and our lives are made lovelier by his colorful illustrations and artwork. However, he may have left a greater legacy in the impact he made which is less tangible, and dwells perhaps more in the realm of the heart, and in the smiles on the faces of those he left behind when we think of him. He did so much good for so many people. He treated others well, which paid itself forward. And, he made dreams come true.

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