

Michael M. Mullin – A biography

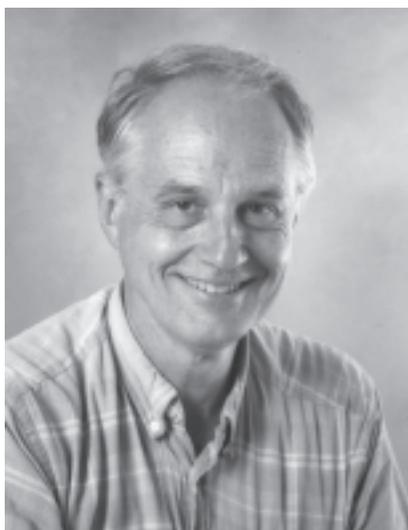


Fig. 1 Mike Mullin, 1999.

The early years

Mike Mullin was destined for a career in science from his earliest time. Born to Joseph and Alma Mullin on November 17, 1937, in the port city of Galveston, Texas, Mike was early to partake in science. From 3-18 months, he was monitored in his crib by his father, a medical researcher, as part of a study of sleep physiology (Fig. 2). Being ‘wired’ may seem commonplace now; in 1939, it was not.

Mike endured. He and his family moved to Chicago in the early 40’s. He continued his involvement in academia at the University of Chicago Laboratory Schools. Founded in 1896, the Laboratory Schools allow a child to learn at a rate appropriate for the student, which apparently was faster than average for Mike. He graduated after 10th grade at age 15. During his Chicago childhood, Mike was a “Quiz Kid”, competing on the well-known, nationally-broadcast (radio and TV) quiz show (Fig. 3). He apparently was expert in natural history. He also sang in a boys’ choir with his younger brother, Mark, now headmaster of the Casady School in Oklahoma City (Fig. 4).

At the age of 15, in 1953, Mike entered the University of Chicago. The following year, he transferred to Shimer College, a rural campus of the University of Chicago, where his father had been appointed President. The liberal arts curriculum at Chicago and Shimer was grounded in tutorials and readings from primary materials. Modern science was not covered extensively. Hence, after graduating with an A.B. degree from Shimer at age 20, he was admitted to Harvard College as a junior and completed his undergraduate science education. In Cambridge, he also met his wife-to-be, Connie, a Radcliffe student, in a church choir. Mike received a second A.B. degree (with a major in biology) in 1959. Charlie Kennel, present director of the Scripps Institution of Oceanography (SIO), was a Harvard College classmate.

Mike’s scholarly association with the ocean may have begun in summer 1958, when he first worked at the Woods Hole Oceanographic Institution (WHOI). This association continued through 1964, when he received his Ph.D. from Harvard. During this period, Mike spent the academic years from 1960-1961 at SIO to broaden his studies in oceanography and statistics, as applied to ecology (Fig. 5). His first publication, with J.W. Hastings in 1962, concerned the size of small plankters. Curiously, this remains a subject of his current research, albeit now on different organisms and with modern instrumentation. The intervening years, however, have seen nearly 70 scientific publications by Mike on a range of subjects.

At Harvard and at WHOI, Mike pursued his Ph.D. under the supervision of George Clarke and Bob Conover, respectively. Grazing copepods and their food were his main focus, this being some of the first, quantitative, experimental work on this topic. It was at WHOI, as well, that Mike appears to have established his first trans-Pacific association. Makoto Omori (Tokyo University of Fisheries) was conducting Ph.D. research in the adjacent laboratory of Mary Sears at WHOI. Both graduated in 1964, Mike from Harvard and Mak from Hokkaido University. Curiously, both published their first dissertation papers in the same number of *Limnology and Oceanography* (1963, vol. 8, no. 3) and both share the same birthdate.

Mike joined the International Indian Ocean Expedition in 1964-65 as an NSF Postdoctoral Fellow, on the *R/V Anton Bruun* (Fig. 6), and did further postdoctoral research at the University of Auckland, New Zealand, studying selective feeding by calanoid copepods.

Professor and oceanographer

Following his world travels, Mike returned to the US, moved to La Jolla and SIO, and married Connie in 1964. He remains at SIO today as Research Biologist, Professor, and, since 1989, Director of the Marine Life Research Group (MLRG). At SIO, Mike developed a strong program of research and teaching and was ultimately ensnared into administration. He was Chairman of the Department of SIO during 1977-80, and Deputy Director and Dean of Academic Affairs at SIO during 1992-1996. Alternate summers from 1966 to 1978 were spent teaching zooplankton ecology with Karl Banse at the Friday Harbor Laboratory of the University of Washington, a formative environment (in a variety of dimensions) for many of his students, including Jed Hirota (Fig. 7). As Director of the MLRG, Mike has also been the UCSD representative on the three-member CalCOFI Committee.

The Food Chain Research Group (FCRG), created and led by John Strickland, was the initial research home of Mike at SIO. It was with FCRG colleagues that he investigated the plankton off La Jolla and in the North Pacific Central Gyre (Fig. 8) and the Southern California Bight.



Fig. 2 Mike in 1939, at age of 16 months, with comograph attached to his crib mattress to monitor his sleep.



Fig. 3 Mike (back and to mother's left), Alma Mullin, and Mark (to mother's right) at a Mother's Day grouping of the Quiz Kids, circa 1945.



Fig. 4 Mike (age 8) and Mark (age 5) in choir at Christmas, 1945.

The FCRG effectively disbanded in the 1980s, although some members remained at SIO, including Angelo Carlucci, Osmund Holm-Hansen, and Farooq Azam. Mike's research in those years included the feeding, growth, production, and distribution of calanoid copepods, their role in elemental cycles, and a bit on ichthyoplankton. He participated at all levels of research (Fig. 9). It was during this time that scale, *sensu* time and space, became of interest to Mike. He also took a sabbatical as a Senior Queen's Fellow in Marine Science at the Australian Institute of Marine Science, where he worked on salp feeding.

At SIO, Mike continued research on zooplankton ecology, taught courses, and mentored Ph.D. students (~ 10), postgraduate researchers (~ 5), and numerous undergraduates. His work continued to focus on copepod ecology but expanded also to include trophodynamics and field ecology studies. Several important experiments were conducted in the SIO Deep Tank (3-m diameter, 10-m deep). At one point, wealthy landowners on Mt. Soledad, with views overlooking La Jolla Shores and SIO, were angered when floodlights, used to simulate sunlight by reflecting downward off a large mirror, shone bright in their living rooms at night. Needless to say, experimental protocol was altered. Mike's office, labs, and research programs have always provided a stimulating, if not illuminating, environment for graduate and undergraduate students, postdocs, and other colleagues.

In recent years, Mike's research has included a renewed interest in copepod egg production and its use to measure temporal and spatial variation in the California Current Region (CCR); zooplankton size distributions and their variation over decades from analysis of historical CalCOFI samples using the Optical Plankton Counter; hake larvae and its food in the CCR; and diatom-nutricline relations off Southern California. Much of Mike's work of the past decade has been oriented towards a better understanding of the environment affecting young stages of fish.

It was written of Mike in 1982,

"Seemingly most content are those whose aims were not stratospheric. Still as characteristically modest as in their childhood are Michael and Mark Mullin, both Quiz Kid regulars at an early age. ... Mike, a biological oceanography professor at the University of California, says 'Though I have achieved at least as much professional recognition as I think I deserve, I wish I were a more original thinker on large-scale oceanographic problems.'" (Feldman, R.D., Whatever Happened to the Quiz Kids, Chicago Review Press, p. 342)

In fact, Mike has contributed significantly to studies of plankton pattern in time and space on a variety of scales, some large. His recent work has, in part, concerned the effects of El Niño on the zooplankton. Perhaps as, if not more significantly, he has acted as a guarantor of the 50-year CalCOFI time series.



Fig. 5 Inspecting a quadrat while a student in Edward Fager's Marine Ecology course at SIO in 1961.



Fig. 6 Aboard the R/V Anton Bruun in the Indian Ocean, 1964.



Fig. 7 Teaching Zooplankton Ecology on the R/V Hydah at the Friday Harbor Labs, U. of Washington, with Karl Banse. Jed Hirota (U. of Hawaii) is shown handling a Clarke-Bumpus plankton net.



Fig. 8 With midwater fish aboard the R/V Thomas Washington during Southtow XIII in the North Pacific Central Gyre, February 1973. Looking on are Jon Sharp and Ralph Lewin.

Mike relinquished his SIO posts of Deputy Director and Dean in 1997 to become Editor-in-Chief of *Fisheries Oceanography*. This journal was conceived by Tim Parsons and first published in 1992. Under Mike's leadership, *Fisheries Oceanography* has continued to gain stature and was recently ranked 11th among fisheries and 15th among oceanography journals. Work of the PICES region is well-represented in this international journal. Mike also authored *Webs and Scales* (1993), a book based on lectures on fisheries oceanography presented at the University of Washington.

Music and family

Music is an important part of Mike's life at sea (Fig. 10) and ashore. Dave Keeling of SIO founded the UCSD Madrigal Singers in 1963. Tenor Mike became conductor in the late 60's. Usually performing a *capella* (unaccompanied by instruments), this group is now known as the La Jolla Renaissance Singers. The two-hour rehearsals are weekly at Mike and Connie's La Jolla home.



Fig. 9 Mike underwater pushing a plankton net in September 1969.

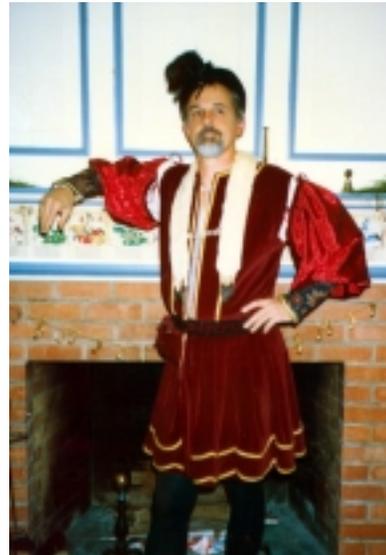


Fig. 11 Mike in costume for a La Jolla Madrigal Singers concert at the Salk Institute, December 1988.



Fig. 10 Playing a makeshift pennywhistle next to a squawk box on the R/V Thomas Washington during Tasaday XI, March 1974. Instrument crafted in ship's machine shop by Eric Shulenberg (University of Washington).



Fig. 12 Steve, Laura, and Keith Mullin performing at home in 1976.

This is not for the faint-hearted – prospective members must try out and sight read. Performances are at Christmas, in former years at the Salk Institute and recently at the San Diego Museum of Art, and in the spring in various local venues. Members span four decades of age and have included international visitors from Germany, France, Japan, and elsewhere, as well as distinguished UCSD scientists. When Mike goes to sea, as he still does, a substitute conductor is named. A hallmark of the group is its period costume (Fig. 11). In fact, this costume has transcended the madrigal performances to the podium at UCSD, where Mike regularly lectures 100-200 undergraduates on marine ecology in full regalia (co-professor Paul Dayton does not). This appears to elicit a range of responses from the students, clearly articulated in the range of course evaluations.

Concurrent with his scientific interests, Mike has always been very involved in family life. His three children were introduced to music (Fig. 12) and science at an early age. His elder son, Stephen, once “snake-sat” a python of Paul Dayton’s. Stephen Mullin, now Assistant Professor of biology at Eastern Illinois University, is carrying on the family’s involvement in education to the fourth generation.

PICES, the present and the future

Mike was involved with PICES from its start in 1992. He was the first Chairman of the BIO Committee (1992-95) and served on the first PICES Science Board. Mike convened the first BIO Session on “High Resolution Paleoeological Studies in the Subarctic Pacific” at PICES II in Seattle. He has continued as a US member of BIO and he is on the Local Organizing Committee of the Beyond El Niño Conference.



Fig. 13 Aboard the R/V Toyoshio Maru in the Inland Sea of Japan during the US/Japan Cooperative Program in Zooplankton Ecology, 1984.



Fig. 14 Mike with Japanese schoolgirls in Kyoto 1984.

Mike has had a significant and varied involvement with scientists from other PICES countries. He has maintained his relationship with Makoto Omori over the years, hosting Mak as a Visiting Scholar, with his family, in 1975-76. He participated in the Zooplankton Symposium in Shimizu, Japan, 1984, in honor of Professors Shigeru Matoda and Martin Johnson. He was a member of a US-Japan Cooperative Science Program on zooplankton in the 1980's (Figs. 13, 14), working especially closely with Tak Onbé (retired, Hiroshima University). He joined the 4th International Copepod Conference held in Karuizawa in 1990. He mentored Shin-ichi Uye (Hiroshima University) as a visiting student and Young-Shil Kang (National Fisheries Research and Development University, Korea) as a visiting scholar. He was doctoral advisor at SIO for Dr. Hae Jim Jeong (Kunsan University, Korea).

What are some of the enduring characteristics of Mike? *Fairness*. Perhaps at times to extremes, he acts impartially, both as scientist

and as administrator. *Rigor*. He is innovative yet his work is thorough, at times sufficiently so as to be difficult to read. *Responsible*. Mike honors his commitments, usually in a timely manner. MLRG has prospered under Mike's fiscal and scientific supervision and he continues to contribute vitally to CalCOFI. Bill Bartram, a graduate student of Mike's, died of cancer in 1979 near the end of his graduate work; Mike alone completed the writing of Bill's dissertation and saw it through publication in the refereed literature, with Bill as sole author. Mike acted with similar commitment when a foreign visitor to his lab was seriously injured when hit by an automobile, shepherding her through recovery. *Scholarly*. Mike has a good command of the literature and of the English language, and he puts both to good use in his advising, writing, and, particularly, as Editor of *Fisheries Oceanography*. *Wit*. Mike has his moods but, regardless, can show good humor under most circumstances. His publication titles bear witness: "How can enclosing seawater liberate oceanographers" and *Webs and Scales*.

What's next? There is no mandatory retirement age at UCSD, so it is anyone's guess. Long-term change is not greatly manifest in Mike's appearance or actions. He still bikes to and from work, conducts madrigals, lectures in costume, mentors students and postdocs, goes to sea, and researches the zooplankton. No doubt, Mike will continue to contribute importantly to PICES and the fisheries oceanography community in general.

This article is written by Dr. David Checkley, Jr., in appreciation and recognition of Dr. Michael M. Mullin's outstanding service to the Pacific Rim scientific community and PICES over many years.

David Checkley (dcheckley@ucsd.edu), is Associate Professor and Research Scientist at the Scripps Institution of Oceanography. Dave's scientific interests are in zooplankton ecology and fisheries oceanography, with particular emphasis on the interaction of physics and biology, and non-scientific interests in family, skiing, climbing, and kites. He has known Mike Mullin for 29 years. In 1970, Dave took Zooplankton Ecology from Mike and Karl Banse at the Friday Harbor Labs. Mike was Dave's major professor at Scripps and a participant in the US/Japan Cooperative Science Program on Diel Variation in the Physiology and Behavior of Marine Zooplankton led by Dave and Professor M. Murano (Tokyo University of Fisheries). Dave is presently also a member of the Marine Life Research Group of which Mike is Director.

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