

[<< back](#) 

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Eric Olson

Eric Olson might be the model of a modern major molecular biologist. He has nearly 30 researchers in his lab at the University of Texas Southwestern Medical Center in Dallas where he founded and chairs the Department of Molecular Biology. He's the Director of the UT Southwestern's Hamon Center for Basic Cancer Research. He's Editor-in-Chief of Developmental Biology and on the editorial boards of six other major journals. He travels widely and lectures continually. He continues to publish new work at a blazing pace.

He is the co-founder of a biotech start-up company. And yet he usually goes home at 5:30 (at least when he's in town), jogs happily for an hour in the ferocious Dallas heat, and devotes the evenings and weekends to his wife and three children.

"He constantly amazes me," says former post-doc and present collaborator Deepak Srivastava. "What's more impressive is that he never seems to be in a rush to get things done. Yet he obviously gets through a great deal of work. I'm not sure what his secret is. Maybe he doesn't sleep."

For the record, Olson sleeps (although he concedes he does get up very early). Also for the record, Olson does not consider his schedule, his publications, or even his scientific skills particularly remarkable. He credits them in large part to great collaborators, great post-docs, and the support of great institutions. Besides, he points out that if you run a large lab, you're bound to co-author a lot of papers. And the secret of going home at 5:30 is simple, he says: sneak out of the lab and don't go back in the evening to check on something.

But these highly effective habits do not fully explain Eric Olson. "I've had the chance to admire Eric from afar and from right next door," says Sandy Williams, a UT Southwestern colleague who first met Olson 15 years ago. In 1995, Olson turned up in Dallas to start the Department of Molecular Biology, where Williams and Olson discovered they were pursuing the same calcium-dependent transcriptional pathway that controls muscle growth. They joined forces. "It's been the most thrilling and exciting portion of my career," Williams says flatly. "I've had the chance to work with a number of great scientists including several Nobel laureates. Eric is right up there. He has that ability of great scientists of just going right to the core of a problem, shoving aside the superfluous information and getting to the crux of it. He also has the knack of picking the right problem scientifically and choosing the right method to attack that problem. It's just uncanny. Up close, it just takes your breath away."

This kind of talk makes Olson profoundly uneasy. Olson says that he's just another molecular biologist and that without Williams' clinical perspective, the research would have been all but impossible. Still Olson's knack for the right question—and for finding the right collaborators—has led to new insights into the fundamental causes of congenital heart disease (CHD), the leading non-infectious cause of death in newborns. Olson's molecular approach to how the embryonic heart forms may also lead to a rethinking of treatment for heart failure in adults.

Olson's interest in myogenesis goes back to his post-doc days in the early '80s in Luis Glaser's lab at Washington University. Glaser's approach, says Olson, was to recruit an eclectic crew and let them loose. Olson wanted to study the mechanisms that control differentiation of skeletal muscle cells. "I really wanted to move into molecular biology but no one in the Glaser lab was doing what I wanted to do so I bought the cloning manual and taught myself," he explains. In those days, Olson says that almost nothing was known about skeletal muscle regulatory mechanisms. Cardiac muscle was a total black box. Congenital heart disease was considered the result of "multi-factorial etiologies" and not easily traceable to single gene mutations.

Twenty years on, CHD is thought to be caused by mutations in a small number of developmental control genes in embryonic heart muscle. Working with collaborators such as Srivastava, Olson helped reveal this understanding. For infants with CHD, the catastrophic malformations are usually apparent at birth, but Olson now believes that adult heart failure may be dependent on many of the same genes.

The implications of Olson's insight could be enormous, not only for understanding the roots of heart disease but for treatment and even repair of cardiac muscle through reprogramming other cells to take the place of the failing myocytes.

Olson, however, keeps a good supply of caveats on hand, chiefly that this work is based on fruitfly and mouse mutants and not fully understood in humans. Still, Myogen, the biotech company that Olson co-founded, is pushing ahead with high throughput assays to identify small molecule drugs that might be used in therapeutic interventions in the mutant pathways.

Pushed to characterize himself, Olson confesses, "I guess I have an insatiable hunger for raw data. It may be why I have this great big lab with so many people working just to feed me new data. I try to talk to everyone in the lab every day because I really want to stay involved with the daily work. I want to be there when the gels come out of the freezer. I want to see the new results. I travel a lot but I call in several times a day for hot developments."

Olson was raised through the ninth grade across the street from the Wake Forest University campus in Winston-Salem, North Carolina. In his high school years, the job changes of his father, a pharmaceutical and industrial chemist, saw the family living in Virginia, Fort Worth and upstate New York. For college, Eric Olson went home to Wake Forest and stayed there for graduate school, earning a doctorate in biochemistry from Wake Forest's Bowman Gray School of Medicine where he was surrounded by medical students. He married one, pediatrician Laurie Clark, but otherwise he's never felt drawn to the medical profession. "Being a physician never appealed to me," he says. "What has always excited me about basic research is the intellectual freedom to pursue a problem wherever it takes you. Plus I'm married to a physician and that's enough for one family."

Olson says he lucked out with Luis Glaser at Wash U. It was Glaser who gave him his scientific freedom, says Olson, but it was the late John Merlie, a Wash U professor of pharmacology, who gave him his scientific style. "John influenced me profoundly. In many ways I've patterned myself on him, both in his methods in the laboratory and in the whole way he looked at science." Olson's first faculty position was in the Department of Biochemistry and Molecular Biology at the University of Texas M.D. Anderson Cancer Center. Houston suited him. In seven years, Olson rose from assistant to associate to full professor to department chair. He was 35, Olson recalls, "a ridiculous age to be the chair of such a large department." He paints himself as a last gasp choice for the chairman's job after departing Chair Bill Lennarz left for Stony Brook, yet Olson concedes that the administrative side of science has never bothered him.

In 1995, by the age of 39, Olson was looking for new challenges and the UT Southwestern Medical Center at Dallas had one. A major donor, Nancy Hamon, wanted to bankroll a basic research center at Southwestern. Olson was offered the chair of a new molecular biology department.

Olson reflects that science these days is more about collaboration than individual achievement. "Whatever I've accomplished is directly attributable to the people I've been fortunate to work with over the years. Sometimes, I feel like I'm just along for the ride." Olson comes from a musical family—both his grandmother and mother were on the faculty of the Rochester Conservatory of Music—and he passes on the tradition of the piano to his daughters, Sarah, 10, and Emily, 6. With his son, Eric, Jr., 13, he creates new traditions. For the last year, father and son have been helping to serve hot meals every other Sunday at a Christian mission for homeless men in downtown Dallas. Olson says the experience has been an eye opener for both of them. "Just the talks in the car on the way home make the time well worthwhile," he says.

How does he manage it all? "He does seem to have unusual physical stamina, especially for travel," observes Williams. Remembering a meeting in Germany, she recounts, "Eric flew in, no sleep, right off the plane to give the keynote address. He'd been up for 36 straight hours and, of course, he gave a dazzling talk like he always does. He never misses a beat."