

# Meet the EAB

Getting to know ACT's Editorial Advisory Board

Alice Evans



Brian Koziol and Im Jung Kwuon with twins Keith and Claire.

**For cancer researcher Brian Koziol, a member of the ACT Editorial Advisory Board since 1995, the work is all about people, education, mentorship—and the elusive, difficult search for a way to cure terrible sickness.**

**B**rian Koziol is looking for the Holy Grail, although, in a sense, he's already found it. At 51, he knows who and what he loves—his wife, their 16-month-old twins, music, exercise, education, teaching, and many of the people he's met along the way. Finally, he loves the quest he's on with Amgen Inc, the world's largest biotechnology company, where he's worked since 1995. That quest—in the oncology arm of Amgen Inc—has as its elusive treasure the other grail, the one he knows he's seeking.

#### **Cancer research**

At Amgen Inc, headquartered in Thousand Oaks, California, Koziol is associate director of Clinical Research, the team

leader responsible for representing the clinical and scientific aspects of three oncology products—Stemgen (Ancestim), Neupogen (Filgrastim, rmetHu-G-CSF), and Neulasta (Pegfilgrastim). His primary role as clinical team leader is to coordinate the efforts of the team, develop the clinical strategy for the products, and insure through the concerted efforts of team members that the strategy is implemented.

Trained as a lipid biochemist, Koziol's research career has focused primarily on breast cancer. At Amgen Inc, the focus has broadened to hematology and oncology. Much of his work has centered on Neupogen and Neulasta, the goal being to extend the use of these products in cancer patients at risk for developing life-threatening complications associated with the chemotherapy they receive.

Both drugs have been approved by FDA to decrease the incidence of infection, as manifested by febrile neutropenia, in patients with non-myeloid malignancies receiving myelosuppressive anticancer drugs associated with a clinically significant incidence of febrile neutropenia. For Koziol, the exciting part of working on the recently approved pegylated version of the product, Neulasta, is that patients may get the same clinical benefit of neutrophil recovery and reduced risks of associated complications with an added convenience of one injection per chemotherapy cycle.

A scientifically stimulating investigational product he has worked on is stem cell factor, where the big basic question, as Koziol puts it, is this: "Is a stem

cell, regardless of its tissue of origin—be it bone marrow, be it nerve tissue, be it skeletal muscle, whatever it might be—primitive enough under the appropriate stimulation to become any cell in the body?"

His research on stem cell factor has focused primarily on bone marrow-derived cells that become the formed elements of blood. But potential treatment applications may go beyond the blood. "If we understand that a stem cell is a stem cell is a stem cell, regardless of where it comes from," Koziol says, "then this knowledge could be incredibly important to stimulating these stem cells regardless of where they originate, and using them therapeutically to regenerate new tissue." This is the holy grail, unknown and hugely sought after—a bit of precious knowledge about the body that could restore health to many very ill people.

The stem cell research is "incredibly complex" and its therapeutic applications are not likely to be realized any time soon. But certain steps along the way are sometimes breakthroughs in and of themselves, offering great hope in the treatment of cancer, immune system disorders, and other diseases. Stemgen, for example, an investigational product Koziol has helped evaluate at Amgen, may have a role in the ex vivo expansion of peripheral blood stem cells derived from the bone marrow that then may be genetically engineered further for therapeutic use (that is, gene therapy). This research is experimental, and to date, very few

patients have actually been treated, unfortunately with even fewer success stories.

### Personal history

How did Koziol, a man with an incredible love for teaching, find his way into the world's largest biotechnology company? A man who had always wanted to be a college professor, who landed a position on the medical faculty at UCLA shortly after receiving his PhD, but who left the university to do clinical research and drug development. There's no easy black-and-white answer here.

Yes, he was wooed. Yes, a greater breadth of opportunity was involved. Yes, he was given freedom to go on teaching—and he has. Koziol's history reveals a man with a lot of intellectual curiosity, someone who doesn't fit easily into a defined space, someone who always seems to be seeking and answering a higher call.

**UMass.** Koziol is also a man who looks for balance in his life, a team player with leadership abilities, discernment, and a lot to give. He'd gone to the University of Massachusetts on a soccer scholarship, been invited to play on the basketball team but turned it down. Julius Irving, the inimitable Dr. J, had already arrived at UMass, and Koziol, no fool thank you, preferred to watch. At 6 feet 1, he'd stick to baseball and soccer.

Like many a student athlete, Koziol majored in physical education, but he was particularly interested in the science behind the body's adaptation to exercise. An ambitious young man from a blue collar background, oldest child of a woodworker and a nurse, he saw his education, he says, "as sort of a privilege, an opportunity. It was mine, and to be honest, because it was mine, I should be able to define what it is, and people who were going to be part of it were very important to me."

This was a key moment in

Koziol's life, this moment of taking the helm of his own ship, picking his own mentors as much as they picked him, designing his own education that included an undergraduate research program and thesis. He worked with Dee W. Edington, a professor of physical education who was interested in adaptation of skeletal muscle to exercise at a molecular level. They had an electron microscope in the physical education department. Because it was one of three on campus, people from other disciplines came to use it. The

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discipline, in its then early years, was "exercise physiology, which was very science driven."

**UCLA.** Edington was working on a book with a man named Reggie Edgerton, who happened to come for a visit when Koziol was looking for graduate schools. Edgerton, who taught at UCLA and had parallel interests, became interested in what Koziol was doing—looking at the biochemical and physiological adaptation of the muscle and also correlating that with ultrastructural changes by using the electron microscope. Edgerton encouraged Koziol to apply to UCLA. Koziol was granted a teaching assistantship, earned his master's degree, did a couple of years of research in between, and then applied to the Individual PhD Program.

At UCLA and UC Irvine, he won several teaching awards as a teaching assistant and faculty member. "One of the reasons I did the Individual PhD Program was that I was interested in multidisciplinary approaches to solving problems in science," he says. "I was getting a lot of resistance from people within the academic senate as I was apply-

ing for this Individual PhD Program." They told Koziol, "You're going to have difficulty marketing yourself out in the field, because when you go to them they're going to want to know what your degree was in, what kind of research you did, and so on, and they're looking for people who went through very structured and more conventional programs."

A man who was used to scoping out the playing field, Koziol said he believed otherwise, that the future was not

going to be that way. "Because of the explosion of information, the way that science was being driven to a more collaborative approach, the expensive equipment that people had to share—all just led to an increased need for collaboration."

Beyond developing knowledge in one focused field of study, Koziol sought something broader, more interactive. "I felt that it was important in the future, if my education could reflect a multidisciplinary sort of approach and understanding to problem solving, I was going to be ahead of the game," he says.

Ultimately, Koziol's program of study was approved. The man with a bachelor's degree in Physical Education (Exercise Physiology) from UMass and a Master of Science in Kinesiology, Exercise Biochemistry from UCLA, earned his Individual PhD in Experimental and Clinical Nutrition, with a minor in Biological Chemistry, also from UCLA. His faculty appointment after a brief postdoctoral experience was in the School of Medicine.

While a graduate student and later while on the faculty, Koziol helped pioneer an undergraduate

research program with one of the provosts and two graduate students from the School of Education. From a pilot program of about 10 students and 10 faculty, it grew to a campus-wide program for undergraduate research. Annually, the program currently involves a couple of thousand students and 400–500 faculty members. Students of sociology, literature, and the sciences are linked with mentors, "which goes back to Dee Edington and the stimulating relationship I had with him." Students develop a relationship with a mentor, come up with their own research question, formulate that question, write a proposal, and send it to a granting agency.

Always looking toward collaboration, Koziol mixed the line-up at the annual research symposium so that people from biology, physics, and the English department, for example, would make presentations at the same forum. "It's wonderful to go back and see the program still going strong," Koziol says.

When it came to his own research as a faculty member, Koziol discovered that people weren't so cooperative. He found himself struggling in the environment where he'd always wanted to be. He was a college professor who found his way into cancer research, developed strong relationships with some of the physicians and surgeons in oncology, attracted grant money, and began his whole thread of work in breast cancer research. With multiple faculty appointments in medicine, as well as in chemistry and public health, he was also a man who was interested in developing cross-disciplinary curricula for those programs.

What he struggled with, he says, was "in a sense an internal competition, because the expectation, particularly at an institution like UCLA, was that you do research that brought in millions of dollars." People were compet-

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ing for the same funds, and there was limited cooperation.

"I loved working in teams," Koziol says, "and at the time, I really didn't see a lot of teamwork in the academic research environment. It was there, but an added challenge for a young researcher." In total, for graduate studies,

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postdoctoral research, and his faculty appointment, he'd been at UCLA for 13 years.

**Private Industry.** About the time his frustration peaked, some former fellow students and teaching colleagues started revisiting whether or not he wanted to come to industry. They'd periodically check with him. "How are you doing? Are you ready to consider industry now?" A number of those he knew academically had actually made the transition. The offer was eventually packaged so that it became, essentially, "a pretty attractive offer," he says.

Koziol loved the lab and loved developing new methods, but it didn't take him long to find his way back to the people end of things. Hired first into McGaw, Inc. as a clinical coordinator responsible for leading a product development team, Koziol also worked in the lab and with the preclinical group, where he was given an opportunity to continue to do basic research in a topnotch laboratory setting.

"It was a matter of maybe six months before I slowly weaned myself away from being in the lab and performing benchwork to saying, I'll just design the experiments. Then it was, I'll let somebody else design the experiments, I'll just look at the data." Eventually he reached a point

where he said, "I don't even need to look at the data anymore, just give me the end result, because I want to apply that to what I'm doing in the clinic. That six- or seven-month period really weaned me away from that desire, and what became even more of interest was the clinical

research part of drug development."

He was still able to touch the basic science and interpret it. "That's all part of clinical research, to be able to understand all that," he says.

**Mentorship.** Koziol also continued to teach, joining the faculty of whatever campus was close to wherever he was working. He's been able, as he says, "to bring that live experience and practical application of knowledge into the classroom, something that has been tremendously exciting for me. And what is more rewarding, I can observe students getting turned on to the information."

He tells his students, "It's not about passing facts to you. If I leave here and you're excited about what I'm talking about, to the extent that you're reading more and you're going to go out and become more excited about what I've talked about, I've been an effective teacher."

Koziol has also given his time to helping disadvantaged youngsters. Through the Los Angeles Public Library and the Los Angeles Museum of Science and Industry, he's been involved with the "middle kids from big families who have been kind of forgotten. These are kids from an environment that didn't offer a chance at the best nurturing and opportunity," he says.

A lot of his drive to do one-to-one work has come from his own experience with education. The models and mentors that came throughout his life, he says, are those through whom he discovered that so much of success in life depends upon opportunity.

Koziol still has a close relationship with Roslyn Alfin-Slater, his PhD advisor at UCLA. Now in her mid-80s, she, along with Edger-ton and other mentors, helped Koziol develop his philosophy and refine what he was after. "She tells me people will forget her. I tell her, as long as I'm alive, part of you lives on, and as long as some of my students are still alive, part of both of us lives on."

**Family.** Driven as Koziol is, life is not all work and no play. He and his wife, Im Jung Kwuon, are physically active people who love music and theater and who've lately had to reprioritize their lives—for the most delightful of all reasons. Their 16-month-old twins, Claire and Keith, keep them hopping.

Recently, while at the YMCA, Koziol has had a number of older men take an interest in his parenting. One of them told him,

"It's really beautiful seeing you with your children. I wish I'd been able to give half the love to mine you give to yours, but I was only 20 when my first child was born. It's a lot different being an older parent." For his part, Koziol says, "I would not earlier in my life have been able to be half the parent I am now."

His wife, whom he met 14 years ago at UCLA, is both a writer and a marriage, family, and child counselor. She has several novels pending, and she's also written a weekly advice column for the Korean Times in Los Angeles. Koziol describes her as the "Korean Dear Abby." While she was at UCLA, she also wrote a similar column for the *Daily Bruin*, and a few years ago, a long-term dream came true when one of her essays, "Facing Down Abuses," was printed in the "My Turn" column of *Newsweek*.

Both of them are used to exercising daily. Koziol enjoys running and swimming, but now he has to fit the workout into a narrow window of time—or occasionally he finds himself out for a jog at midnight. He's not the kind of man who easily gives up what he desires.

The grail that he's found is the most secure of all treasures—a marriage partner, children, work that is meaningful and important. The grail that he's seeking is still out there, and he's part of a team that has a chance of finding it.

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