



From the Society for Developmental Biology

## Peter A. Lawrence awarded *Developmental Biology*-SDB Lifetime Achievement Award



Peter A. Lawrence was awarded the 2011 *Developmental Biology*-SDB Lifetime Achievement Award for his sustained contributions to the field of developmental biology. Lawrence, an investigator at the University of Cambridge, Department of Zoology and emeritus scientist at the Medical Research Council (MRC) Laboratory of Molecular Biology in Cambridge, has spent his career studying pattern formation and how cells achieve their identity during development.

Lawrence has received numerous scientific accolades including an elected member of the European Molecular Biology Organization, Fellow of the Royal Society, Fellow of the Royal Swedish Academy of Sciences, and a recipient of the Waddington Medal from the British Society for Developmental Biology. He expressed his appreciation to the SDB for this award in an interview in April.

"[It] was very nice of them," he said. "I mean to be [on] the same list as people like Joe Gall who I've admired, it's very satisfying." He was particularly appreciative of being recognized by a scientific society outside of the U.K. Being honored by an "organization in a big science country like the U.S., it's very nice. ... I'm very grateful to them," he said.

Lawrence began his scientific career in 1962 as a graduate student under renowned entomologist Vincent Wigglesworth at the University of Cambridge. He then spent two years as a postdoc in the United States at the University of Virginia with Dietrich Bodenstein and Case Western Reserve University with Howard Schneiderman. It was during this time that he made the decision to study pattern formation—how you build animals, shapes, and patterns. "I remember making that decision on a

plane actually when I was coming back from America," he said. "I had been there since doing my postdoc and...it dawned on me that that's what I wanted to work on. And I think it's very, very useful for a scientist to have a—what I call a target problem." For Lawrence this is a scientific question that you'd like to answer, may never answer, but that drives your research career.

Lawrence spent two years at the University of Cambridge prior to being recruited to the MRC by Francis Crick and Sydney Brenner in 1969 (Garwood, 2011). In 2006, he retired from the MRC and moved his lab to the University of Cambridge where his scientific career began decades before. For nearly fifty years, Lawrence has tackled pattern formation from many directions. He was instrumental in clarifying Antonio Garcia-Bellido's compartment hypothesis determining the role of engrailed in establishing posterior compartment identity in *Drosophila* embryonic body segments and adult appendages. From his early days, Lawrence has studied cell polarity in various insects to learn how a cell knows to orient itself in one direction over another. Much of this work has been done examining hair and bristle growth along the *Drosophila* abdomen.

Over the years, Lawrence has maintained a small lab with rarely more than one graduate student at a time. Many postdocs have cycled through his lab—several of whom have become long-term collaborators including Ginés Morata and Gary Struhl.

Asked about his mentoring style, Lawrence said, "I think that you should give your people as much independence as they can take." This was how he got his start as a graduate student under Wigglesworth. "I had to find my own project and work on it. I relished that independence and freedom, and the knowledge that whatever I did would be mine," he said. Like Wigglesworth, Lawrence does not put his name on his students' and postdocs' papers unless he has actually done some of the work. "...[W]hen I started out, that was a more standard practice." Based on this belief system, Lawrence has continued to work at the bench throughout his career. "...I think that's been good. I think I find that very rewarding to be able to depend on your own work."

For students and postdocs trying to make their way in science, Lawrence said it is important for them to be themselves. "... [P]eople often make a mistake. They look at somebody who's a very successful scientist and use that person as a role model and they try and do what that person is doing, but they forget the most important part of the equation is your own characteristics and what you're good at."

"...I think it's important to do what you're good at," he said. "I mainly like microscopy. I don't like anything that's too intellectually demanding, so I tend to leave the detailed model building to my colleagues..." Lawrence also doesn't do molecular biology as he finds pipetting quite boring. "I've resolved that problem by collaborating with other people who do molecular biology—like Gary Struhl," he said.

His appreciation for microscopy was inspired by a book Wigglesworth wrote called *The Control of Growth and Form* (1959). “It was a beautiful book and it made me realize that you could learn a lot just by looking at a whole mount,” he said. “Even now I’m still marveled at the cuticle of the abdomen of *Drosophila*.”

Former SDB President Richard Harland said Lawrence’s lectures greatly influenced him as a graduate student at the MRC. Lawrence’s “clarity of thinking and criticism at the second floor cell and developmental biology meetings” had an impact on his career.

In the past 10 years, Lawrence has written many commentaries on ethics, the responsibilities of scientists in society, and critiques on the current research system (see Garwood, 2011 for overview). He began to speak out on these social aspects of scientific research in response to feedback he received following a lecture he gave honoring his mentor, Vincent Wigglesworth. In it, he not only spoke of Wigglesworth’s science, but also of “how he used his life to advance knowledge.”

The response from students was tremendous and he thought, “Perhaps there’s a need for somebody to speak for the young people and the situation that they find themselves in as they start working in a career in science,” he said. Lawrence continues to speak out on these social issues, but he said, “My number one interest has always been the biology.”

#### Reference

Garwood, J., 2011. The Heart of Research is Sick. *Lab Times*, (2) 24–31.

Marsha E. Lucas

SDB Publishing Fellow

Originally published in Fall 2011 SDB e-news

E-mail address: [mlucas@sdbonline.org](mailto:mlucas@sdbonline.org).

Url: <http://www.sdbonline.org/SDBe-news/Fall2011/Lawrence.html>.