

# Analyst

Founded in 1888 as the  
Marine Biological Laboratory

SPRING 2010  
VOLUME 5, NUMBER 1

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Dear Friends,

# Catalyst



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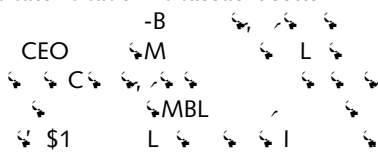


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# The spirit of Loeb will be maintained.

— Ed McCleskey, HHMI

About a dozen ideas were floated, and an intensive review process then began. In the end, Thomas Cech, then president of HHMI and a Nobel laureate, approved two investments. One was \$15 million to renovate Loeb Laboratory, provided the MBL raise the remaining \$10 million needed for the complete project. Soon after, in fall 2008, the Massachusetts Life Sciences Center stepped forward and committed \$10 million to launch the renovation, which will culminate with a celebratory ribbon-cutting this summer.

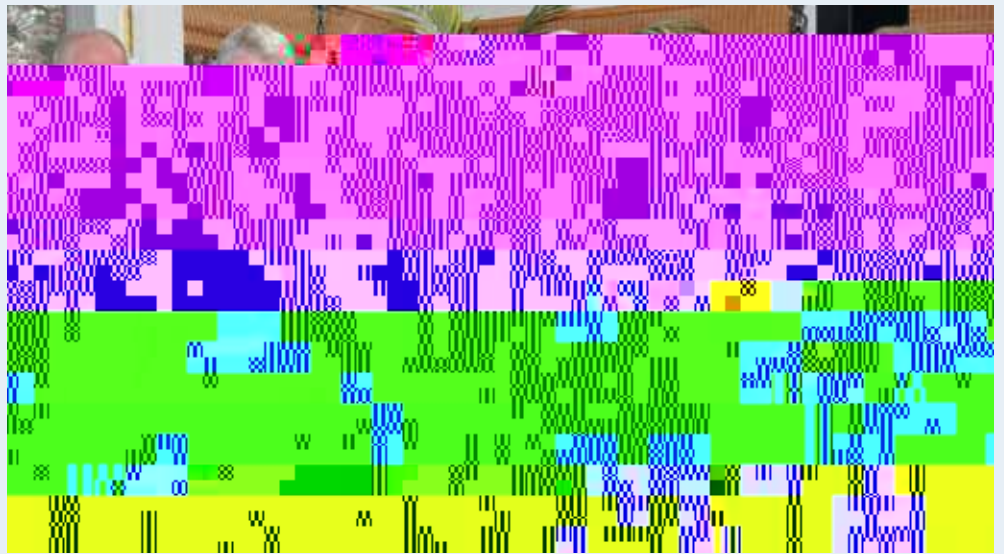
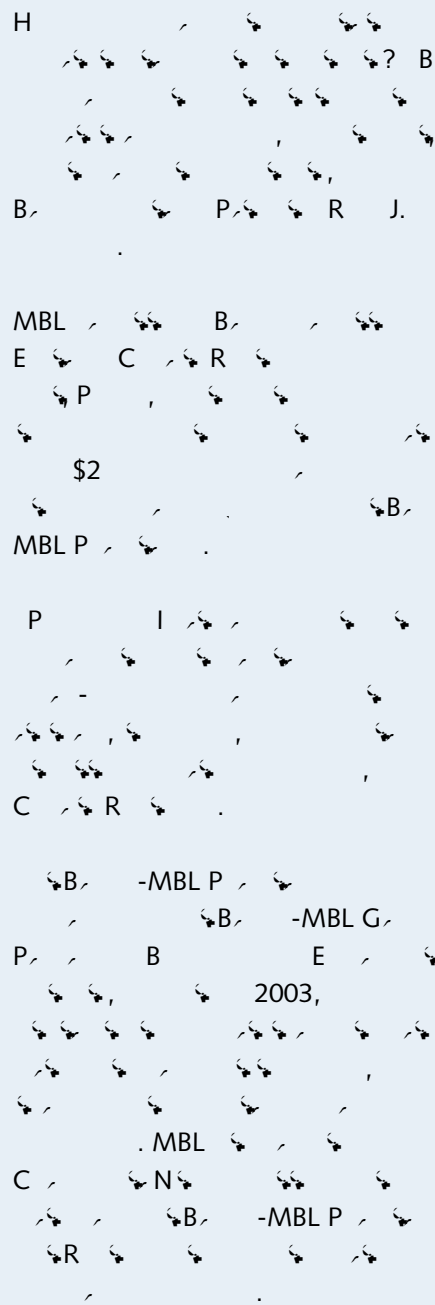
“What HHMI values about the MBL is this,” says HHMI Scientific Officer Ed McCleskey. “Obviously, the MBL courses are training the next generation of scientists. But are they doing it? By exposing students to cutting-edge techniques with the absolute latest equipment, with hands-on, one-on-one instruction from the leading researchers in the field. That’s it. That’s the number one thing. The MBL is one of very few places that do this.”

Secondly, McCleskey says, “Cross-fertilization of scientific fields is huge, and very few places do it as fundamentally as the MBL. The reason for that is the MBL courses are more than just techniques; they are flagships for whole fields. Courses like Neurobiology, Embryology, Physiology, and Biology of Parasitism try to cover an entire subject. So if you are a physicist, say, and want to learn biology, the way to do that is at the MBL.”

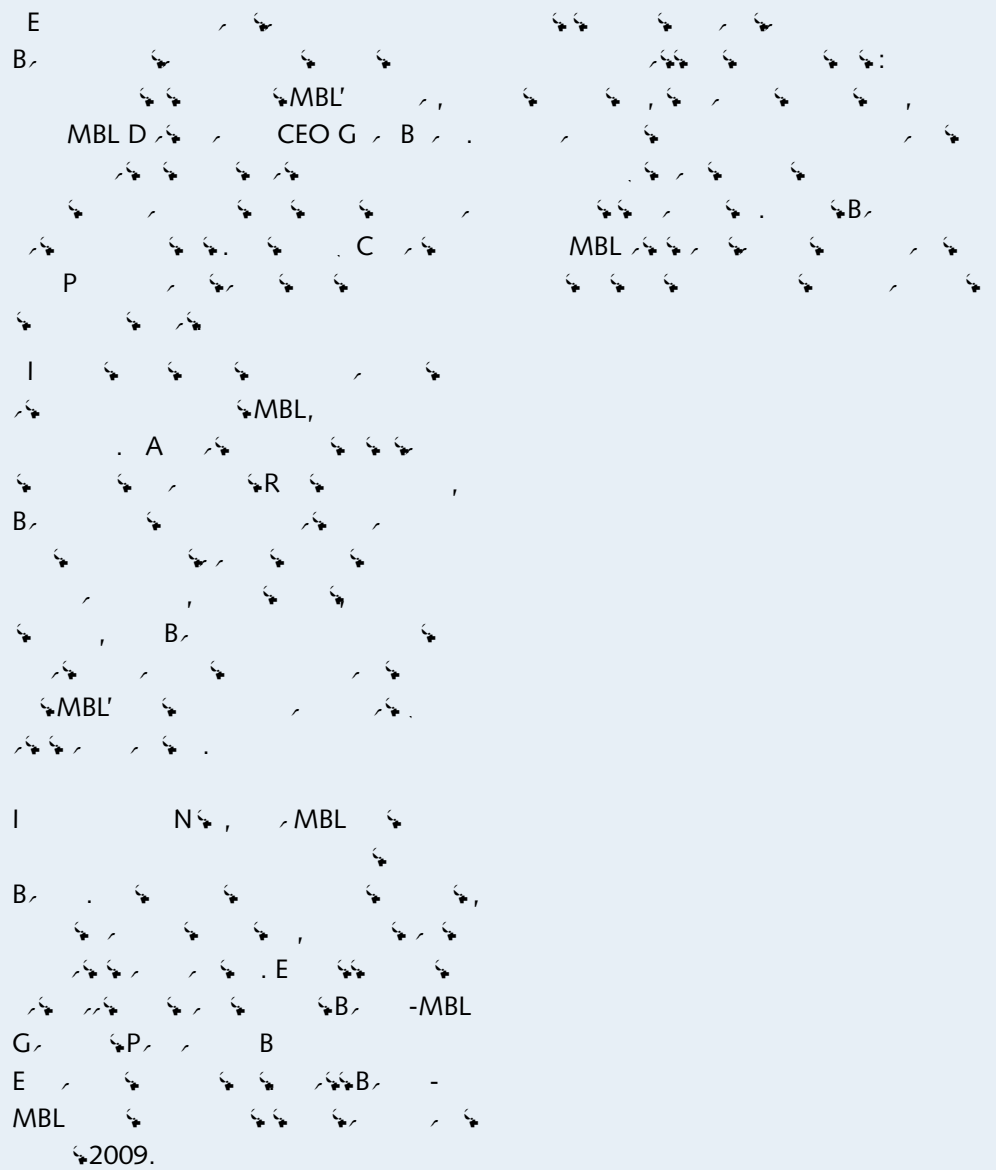
McCleskey, who is a neuroscientist, remembers well the “old Loeb.” Before he joined HHMI in 2007, he was a senior scientist at Oregon Health & Science University’s Vollum Institute in Portland, Ore. He says, “The MBL is a place where you can learn

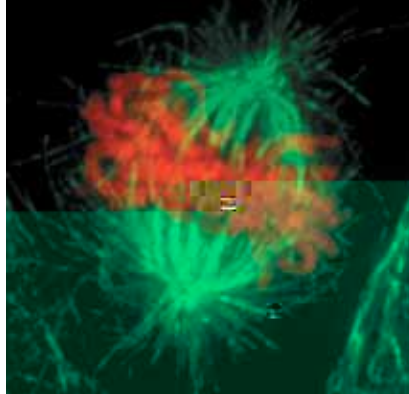






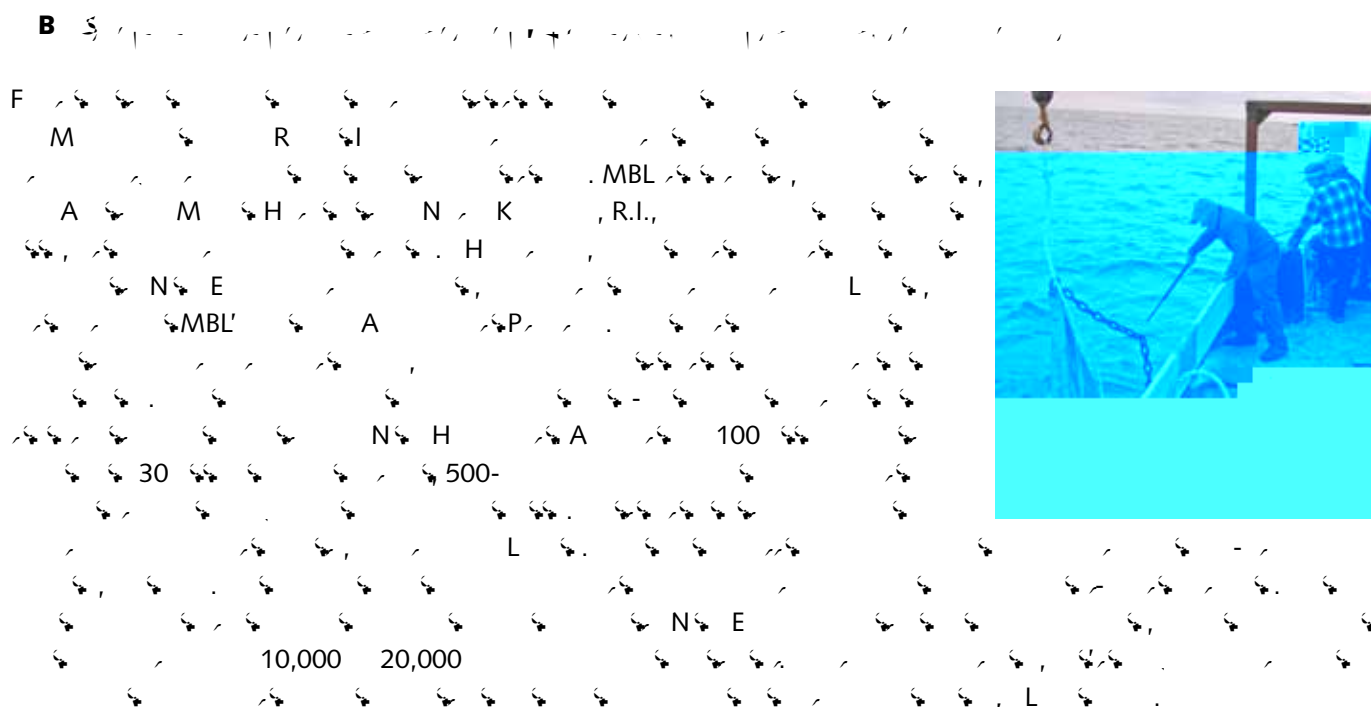
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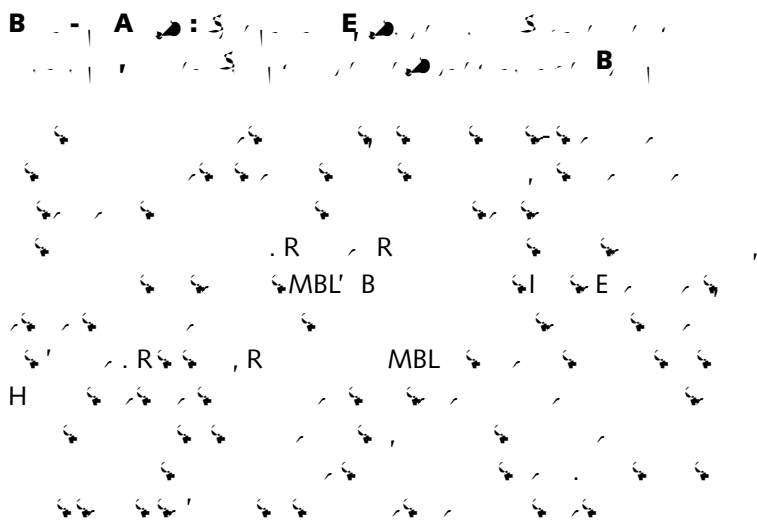
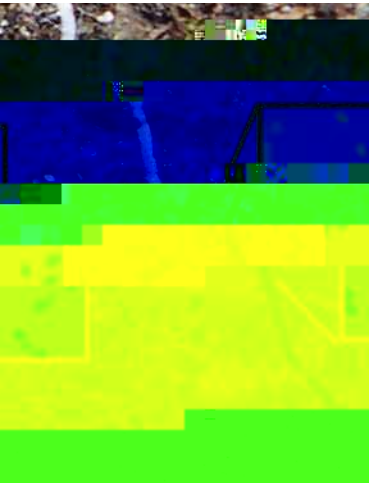


Cell division is a critical process in human development from the moment of conception on, and it is also at the heart of many diseases, including cancer. One crucial task of the dividing cell is to accurately separate the two identical strands of each chromosome (the chromatids) and send them into the two new daughter cells. Understanding the forces that drive chromatid segregation is the goal of the Kinetochose Consortium, an international group of researchers who collaborate each summer at the MBL. Recently, the group reported newly discovered interactions between sister kinetochores—the protein bundles at the contact point between the chromatids—and microtubules, the cellular “fibers” that attach to the kinetochores to pull the chromatids apart. To do this, the group developed a novel pipeline for preparing

and photographing dividing human cells, as well as computational image analysis to quantify the interplay of sister kinetochores in three dimensions. “We believe we have developed new methods and gained insights that simply aren’t available anywhere else. We couldn’t have done this work anywhere except at the MBL,” says Jason Swedlow, a professor at the University of Dundee in Scotland. In addition to Swedlow and members of his lab, the Kinetochose Consortium includes scientists from the laboratories of Gaudenz Danuser (Harvard Medical School), Patrick Meraldi (ETH Zurich, Switzerland), and Andrew McAinsh (Marie Curie Research Institute, England). (*J. Cell Biol.* 188: 665–679, 2010).



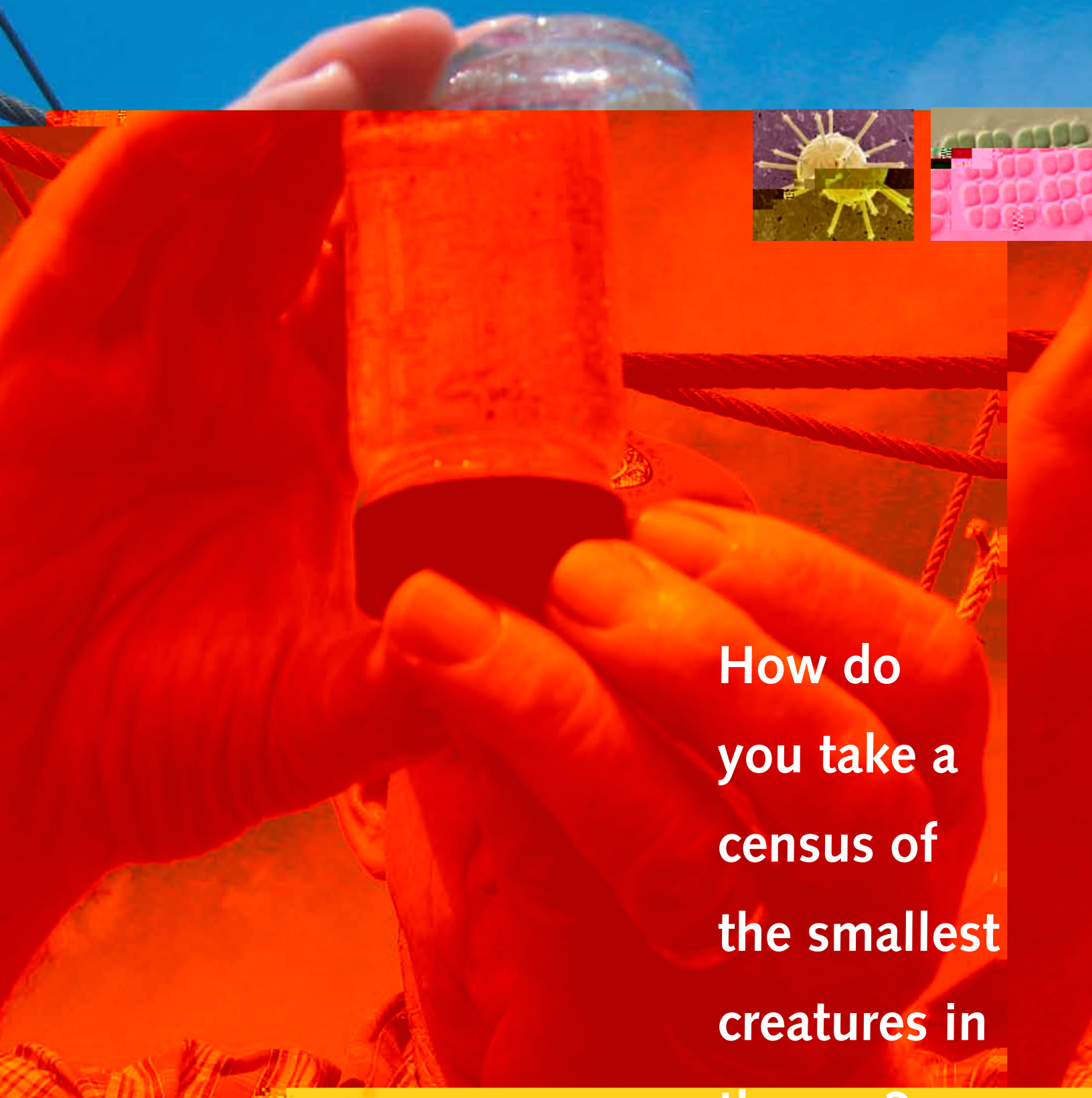








# STRENGTH IN NUMBERS



How do  
you take a  
census of  
the smallest  
creatures in  
the sea?





...  
**Susan Windham-Bannister**

**MBL** Upon your appointment as president and CEO of the Center, you embarked on a “listening tour” around the state to meet with people in the life sciences industry, academia, government, disease advocacy groups, and in the investment community. What messages emerged?

**SWB** The life sciences community understood that while the state’s \$1 billion Life Sciences Initiative is a great start, there was a real need for the Center to prioritize, to target our investments toward closing gaps and addressing major unmet needs. So our priorities are, first, to invest in our academic institutions and medical centers. Massachusetts is known for life sciences discovery and innovation, and these institutions play a critical role in that pipeline. Our second

priority is supporting young companies because, especially in this economy, it’s hard for them to get working capital. Third, we want to make sure the entire Commonwealth has the infrastructure it needs to drive discovery and development. Our investment in the renovation of Loeb Laboratory is one example of that. And our fourth priority is workforce development. One of the primary reasons companies choose to locate in or relocate to Massachusetts is our workforce. A final objective is to make sure there is a strong life sciences “ecosystem” in Massachusetts. We want to connect the dots, make sure the major players know each other and provide forums for their interaction, because that supports discovery, collaboration, and leveraging.

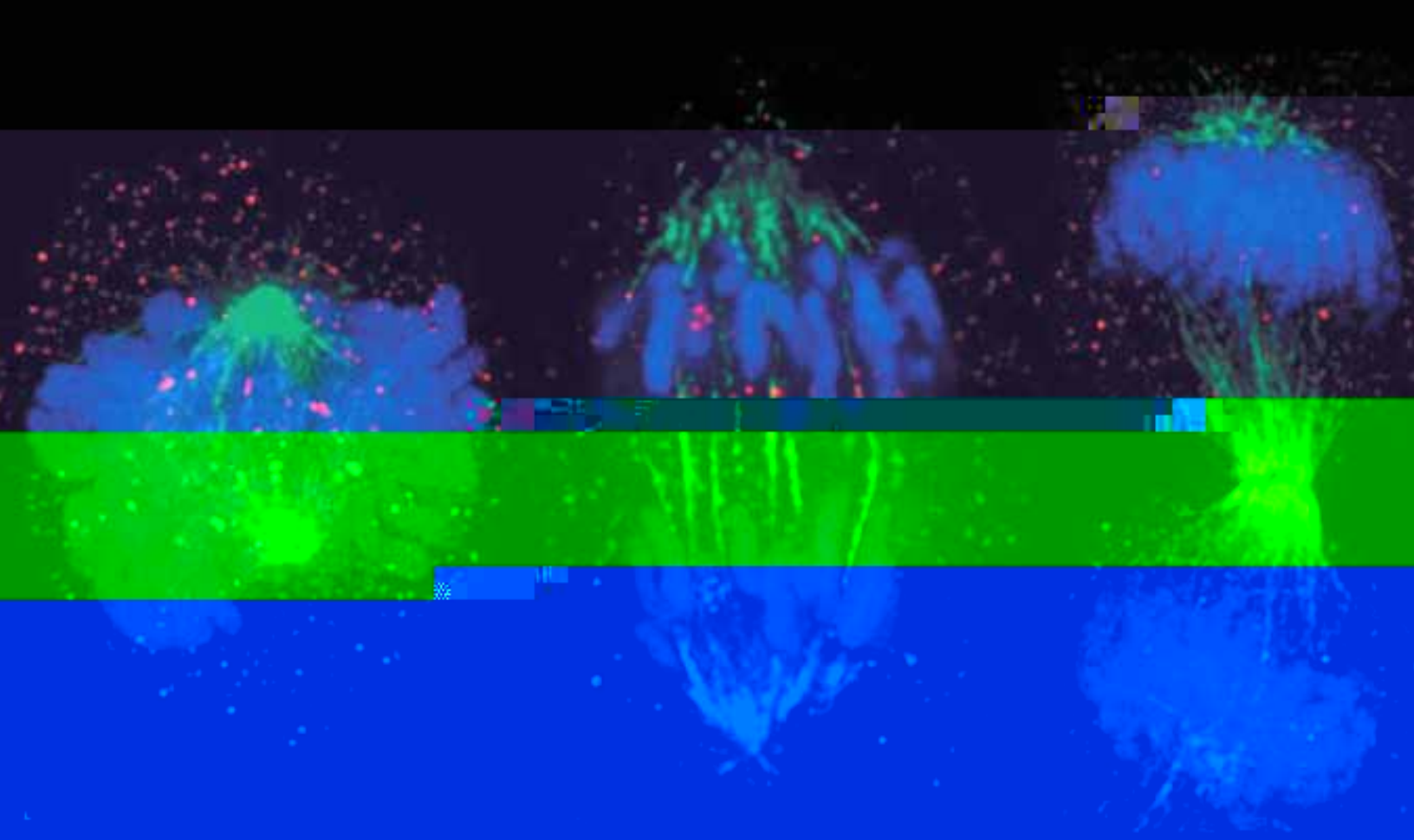




ACCOLADES

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# Catalyst

IN THE NEXT *MBL CATALYST*

## Where Are They Now?

They are exploring the Earth, caring for cancer patients, continuing Nobel Prize-winning research, inspiring students of science. Some lead government agencies, others provide medical care in remote Third World regions. MBL alumni are all over the world, making good use of the ideas and know-how they acquired at the MBL.