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Star by star, Southern Cal builds strength in bioscience

By Peter Monaghan

Raymond C. Stevens and Peter Kuhn, two of the country's most successful researchers of molecular structures and processes and their application to pharmaceutical-drug manufacture and medical treatments, have become the latest hires in what the University of Southern California is billing as its "game-changing" enlistment of biomedical scientists.

In short order, the university has recruited dozens of prominent figures as it shifts its studies in life sciences from describing disease to predicting the likely course of people's illnesses. It has intently sought out "rainmakers" who bring along federal and private support and the near-guarantee that plenty more of it will rain down on the Los Angeles institution.

Mr. Stevens, who returns as a professor of biological sciences and chemistry to the university where he earned his doctorate, and Mr. Kuhn, a professor of biological sciences, were both most recently at the Scripps Research Institute. They will bring a combined 50 staff researchers to Los Angeles from La Jolla, 110 miles down Interstate 5.

Mr. Stevens says the lure for him, as for many other leading bioscientists, has been Southern California's emphasis on "convergent bioscience," a blend of biology, medicine, biotechnology, and engineering that corrects a trend that has persisted since Leonardo da Vinci drew his "Vitruvian Man" in about 1490: "Since that time, we've been dissecting science more and more and more," to now end up with 130 subdisciplines in medicine, 60 in biology, and 40 in chemistry, he says. "Now is the time to merge and bring all these things back together."

Bioscience research centers near and far can expect Southern California to tempt their leading lights to join it. In a recent address to the faculty, the university's president, C. L. Max Nikias, said that thanks to good recession management five years ago,



Raymond C. Stevens and Peter Kuhn *Photos by Peter Zhou*

and a galloping capital campaign that is already nearly two-thirds of the way to its \$6-billion goal, "we can recruit anyone we want."

In the past four or five years, it has recruited 75 new professors and institute directors to its Keck School of Medicine, and has assigned medicine and health 45 percent of its total budget, up from 14.

Mr. Kuhn, a German-born, SUNY-trained specialist in the physics and mathematics of cancer metastasis, says Southern

California's approach has a strong appeal. "Doing it this way, science is really fun," says Mr. Kuhn, who has found a way to detect and characterize cancer cells using a blood sample. "You work together on incredibly relevant problems to find solutions that are truly meaningful."

Southern California officials announced his and Mr. Stevens's appointments last month at a groundbreaking ceremony for the Michelson Center for Convergent Bioscience, named for **Gary K. Michelson**, a retired orthopedic spinal surgeon who donated \$50-million on the proviso that it spark technology transfers. He, like Mr. Kuhn and Mr. Stevens, has spun off companies that capitalized on his inventions and techniques.

University officials forecast a 10-year outlay of \$1-billion to "convergent bioscience." With further recruiting, the Michelson Center is expected to house about 25 more research teams. At the groundbreaking, officials announced the appointments of two other Scripps scientists, **Vadim Cherezov**, a structural biophysicist, and **Vsevolod (Seva) Katritch**, a computational biologist, whose departures will further roil the waters at the prestigious but financially troubled La Jolla facility.

Mr. Stevens, who has created therapeutic molecules used in breakthrough medications and has founded three National Institutes of Health research centers, says his decision to move was influenced, in part, by his experience as founding director

of the iHuman Institute at ShanghaiTech University, a role he assumed in 2012 after going to China on sabbatical.

There, he saw that Chinese bioscience-research institutions had not hesitated to adopt English as a scientific lingua franca to further their commitment to convergent bioscience. The observation informed his thinking about how best to improve communication at Southern California among bioscience researchers from disparate fields with varying languages and

kinds of conceptualization. In particular, he wants to help the university spread its ideas about convergent science to California schools and colleges.

As part of that effort, Mr. Stevens has approached students in the university's School of Cinematic Arts and its digital-arts division with this pitch: "You can create the next great movie, or you can use the same approaches to show how the human body works in great detail."

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Two Scripps Research Biomedical Labs Moving to USC

By Chris Jennewein

A pair of Scripps Research Institute scientists will bring their biomedical labs to the University of Southern California and anchor the work that will be done at a new health-science facility being funded in part by a \$50 million donation from retired surgeon Gary Michelson, the university announced Thursday.

Earlier this year La Jolla-based Scripps explored a possible merger with USC, but shelved the idea because of faculty criticism.

USC President C. L. Max Nikias is expected to take part in a late-morning groundbreaking ceremony for the USC Michelson Center for Convergent Bioscience, which will house laboratories, a Center for Electron Microscopy and Analysis and microscopy imaging technology facilities.

University officials said researchers will use the facility "to generate the bioscience discoveries that build a better, healthier future."

Among those researchers will be two Scripps scientists — Raymond C. Stevens and Peter Kuhn — who will move their

labs to the university and bring about 50 researchers with them. Stevens will serve as USC's provost professor of biological sciences and chemistry, while Kuhn will be the dean's professor of biological sciences at the USC Dornsife College of Letters, Arts and Sciences.

"Ray Stevens and Peter Kuhn are among the world's most influential biomedical scientists, whose research on molecular structures and processes have led to important advances in medical treatments and pharmaceutical drugs," USC Provost Elizabeth Garrett said. "Their arrival enhances USC's leadership in creating consequential research at the intersection of science and engineering."

According to the university, Stevens has pioneered research into human cellular behavior. He has also helped create therapeutic molecules that led to breakthrough drugs for conditions ranging from influenza to childhood diseases to neuromuscular disorders to diabetes. Stevens has founded four biotechnology companies and three National Institutes

of Health centers.

"We came to USC because of the opportunity to converge the sciences and dramatically increase our understanding of the structure and function of the human body at the atomic scale," Stevens said. "USC has the world's number-one cinematic arts school, including expertise in digital art, which we think will be critical to bridging scientific and engineering disciplines."

Kuhn is the co-director of an NIH Physical Sciences Oncology Center, working to learn more about how cancer spreads through the body. He also led the invention of a method for detecting and characterizing cancer cells with a simple blood test. At Scripps, he established the translational science program, and he previously served as a physics professor at Stanford.

"USC unites the best of the best, who all align on the vision of improving human health with scientific breakthroughs and bring outstanding scientific competencies to the table to make this vision a reality," Kuhn said.