

AUGUST 20, 2015

STRATEGY

STARTING EARLIER AT GSK

By Mark Zipkin, Staff Writer

[GlaxoSmithKline plc](#) is extending its “buy-over-build” strategy for research with a new arm of academic outsourcing targeted at even earlier stage projects than the translational and clinical alliances it already has in place. With a pair of deals in July covering six U.K.-based academic organizations, the company is building ties in basic research that bring it back to a space it had all but abandoned.

“I think we’re almost defining a new phase of interaction within the industry,” said David Powell, director of the Crick-GSK open science collaboration. “What we’re now doing as a company is going back into the very basic biology stage, an area that we haven’t existed in for a very long time.”

The first deal, with the [Francis Crick Institute](#), is an “open science” initiative that aims to utilize GSK’s researchers and platforms to learn about targets and pathways before the discovery stage of R&D, and includes a plan to train new scientists from both organizations. Each partner will fund its own participation, although exact costs have not been disclosed.

The second partnership is a multilateral collaboration dubbed the Experimental Medicine Initiative to Explore New Therapies (EMINENT), which is coordinated by [University College London](#) and includes [Imperial College London](#), the [University of Cambridge](#) and Newcastle University, and is funded by £8 million (\$12.5 million) each from GSK and the [Medical Research Council](#) (MRC). Like the Crick deal, the focus is on disease mechanisms, although the initial scope will be limited to GSK’s areas of expertise at its Stevenage campus — immune and inflammatory diseases.

The deals follow the June launch of the Seattle-based [Altius Institute for Biomedical Sciences](#), a research-oriented not-for-profit launched by GSK to develop genomics tools for improving target selection in drug discovery.

But unlike the Altius partnership, in which GSK invested \$95 million to advance methods for analyzing gene regulatory networks, the July deals aim to answer questions focused on characterizing diseases and disease mechanisms. The hope is that improved understanding of the underlying biology will reduce the attrition rates of GSK compounds that reach the clinic.

Although GSK spokesperson Eleanor Bunch told BioCentury the timing of the Altius, Crick and EMINENT deals within

three weeks was a coincidence, Powell said GSK is clearly engaging more actively with the idea of investing resources in early biology.

“There is a recognition by GSK in general that we need to do more in the basic science area,” he said. “A lot of what we’re doing is setting the tone for downstream translation research and trying to ensure better success in those later translational stages. Our belief is that by working more collaboratively on disease characterization and mechanisms, that is a way of ensuring better success later on.”

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David Powell, GSK

In the last five years, GSK has signed 11 research deals with academic organizations, all but one of which are not designed to move compounds into the clinic, and none of which are run through a specific program at the pharma. Only 5 of those deals focus on basic research. (See “GSK’s Preclinical Academic Grab,” page 7)

In addition, GSK has numerous alliances with academic researchers through its Discovery Partners with Academia (DPAC) program and Discovery Performance Units (DPU). But according to Bunch, the new partnerships cover much earlier activities, as DPAC involves “collaborative projects in the translational space” and the DPUs form relationships in the clinical space. (See “California Dealing,” page 6)

She added that because the new deals are in “the early biology space” they should give rise to hypotheses about targets that the DPAC groups can then pick up and use in drug discovery.

UP THE CRICK

STRATEGY

CALIFORNIA DEALING

Just as [GlaxoSmithKline plc](#) announced two new sets of academic collaborations in the early preclinical space, its Discovery Partnerships with Academia (DPAc) unit announced a bench-to-bedside collaboration to develop a therapy against a target for leukemia, the company's first such partnership to come from its new San Diego office.

In the deal, DPAc will partner with [University of California San Diego's](#) Catriona Jamieson, associate professor of medicine and chief of the Division of Regenerative Medicine at UCSD.

Jamieson's group has identified a key mechanism of malignant cell proliferation in chronic myelogenous leukemia (CML) and other blood cancers, and her work has shown that uncontrolled RNA editing can lead to cancer stem cell renewal.

The collaboration aims to generate a compound targeting RNA editing to bring forward into clinical trials.

GSK will partner Jamieson with a co-leader from DPAc who has a complementary skill set, as well as team members from GSK's Platform Resources Group during high throughput screening, as the researchers search for targets.

While DPAc has historically focused on European partners, its expansion in the U.S. targets North American researchers at top-tier universities, said Carolyn Buser-Doepner, VP and global head of DPAc, and the company is hoping to build more agreements with the [University of California](#) system.

Buser-Doepner said that GSK is looking for partners who have a target in mind, some degree of target validation and disease specificity, and "very clear line of sight into the clinic — so if you identified a way to therapeutically intervene with that target that you would know where to go with it."

— Mark Zipkin

The Crick deal was set in motion in 2013 between GSK and the institute's precursors, the MRC's National Institute of Medical Research and [Cancer Research UK](#), who all met at Stevenage to discuss overlap between the company's and the academics' interests in basic science and disease mechanisms.

Under the agreement, projects can be initiated by either GSK or Crick scientists and will be carried out by integrated teams, whose findings will be published.

After a series of meetings, the partners launched three projects — in cancer, HIV and malaria — that arose from ongoing academic research, through which the company's resources and staff could help answer mechanistic questions. The relationship isn't pinned to specific therapeutic areas, and the partners intend to ramp up to as many as 15 projects by 2016.

"We want to have this very porous relationship between the Crick and GSK," Powell said. "One of the things that I think sets us apart is Crick scientists and GSK scientists working side by side in GSK and at the Crick Institute. We need to do things that we wouldn't be able to do without each other."

For example, he said, "We could add to the science of those projects through the provision of compounds that might be able to help from a chemical biological point of view, or certain types of antibody reagents that may be able to help drive the biology from a tool antibody point of view. And there are some platforms that we have available at GSK that might not be available to scientists in the Crick."

Howard Marriage, entrepreneur-in-residence at the Crick Institute, told BioCentury that the data around the pharma's compounds can also add to understanding diseases in a unique way. "The information that drug companies learn about targets and pathways is really applied to discovery," he said. "That was one of the intriguing areas that we thought they could bring to science questions."

He added: "We're not writing the question as, 'Is this particular enzyme target pathway truly relevant in a disease?' It's, 'We know it's involved in this disease, can we understand more about it?' This type of knowledge isn't an area that pharmaceutical companies engage in these days."

Although there could be downstream commercial potential, both GSK and the Crick insist that the research is the primary focus. As a consequence, the partners aren't pegging expectations of new IP on the deal.

"The expectation from my perspective is that if we expose projects that could be translatable, we'll have another discussion about that," said Marriage.

Powell added that although one measure of success will be that some of the projects lead to a translational phase, further involvement with any part of GSK would involve separate agreements.

EMINENT DOMAIN

In contrast to the Crick deal, GSK's collaboration with the MRC and the EMINENT partners is geared to connecting basic

research to clinical activities, in addition to exploring basic disease biology.

Richard Marshall, head of GSK's Fibrosis Discovery Performance Unit, told BioCentury that finding a better way to translate from preclinical models to patients is one of the biggest challenges the industry faces, and the EMINENT collaboration offers the academic labs an opportunity to hit the ground running.

GSK'S PRECLINICAL ACADEMIC GRAB

Select preclinical research collaborations between **GlaxoSmithKline plc** (LSE:GSK; NYSE:GSK) and academic organizations or research institutes since 2011. Consortia and networks involving other companies, deals with GSK's Discovery Partnerships with Academia (DPAc) program or Discovery Performance Units (DPUs), and licensing deals are not included. Source: *BCIQ: BioCentury Online Intelligence; BioCentury Archives*

DATE	INSTITUTIONS	DISEASE AREA	DISCLOSED VALUE	PURPOSE
July 2015	Francis Crick Institute	Infectious disease	Unavailable	Conduct pre-translational basic research in infectious diseases
July 2015	Imperial College London; Medical Research Council (MRC); Newcastle University; University of Cambridge; University of Glasgow	Autoimmune disease, inflammation	£16 million (\$25 million)	Form the Experimental Medicine Initiative to Explore New Therapies (EMINENT) to perform basic research on disease mechanisms, with an initial focus on autoimmune and inflammatory diseases
June 2015	Altius Institute for Biomedical Sciences	Undisclosed	\$95 million	10-year deal to develop basic research technologies and approaches for decoding control of genes and how cell systems function in healthy and disease states
February 2015	Neomed Institute	Undisclosed	Unavailable	Create the Neomed Biologics and Vaccine Center of Excellence in Montreal to develop biologics and vaccines
November 2014	University of Edinburgh	Neurology	Unavailable	Two-year deal to conduct drug discovery research to develop new treatments for brain diseases
April 2014	University of Texas MD Anderson Cancer Center	Cancer	\$57 million	Perform basic research towards development of immunotherapies for cancer through MD Anderson's Moon Shots Program
March 2014	European Bioinformatics Institute of the European Molecular Biology Laboratory (EMBL-EBI); Wellcome Trust Sanger Institute	Undisclosed	Unavailable	Form the Centre for Therapeutic Target Validation (CTTV) to perform basic research and use genome sequencing with big data tools to validate drug targets
December 2013	University of Manchester; Cancer Research UK	Cancer	Unavailable	Develop cancer drugs targeting an undisclosed protein involved in epigenetic regulation
April 2013	Agency for Science Technology and Research (A*STAR)	Undisclosed	Unavailable	Develop evidence-based formulation (EBF) products for emerging markets under a five-year deal
May 2012	Yale University	Undisclosed	Unavailable	Design and develop proteolysis targeting chimeric molecules (PROTACs)
October 2011	University of Edinburgh	Gastrointestinal	Unavailable	Discover and develop products to treat pancreatitis

“The traditional academic funding model is: you do one piece, you go back, you seek further funding to proceed to the next step,” he said. “The MRC are really keen, as are we all, to try something a little different, where you could have a number of stepping stones.”

University scientists will submit proposals to a selection panel composed of experts from both inside and outside the collaboration. Funded projects will be peer reviewed at each milestone but then have the opportunity to progress to the next experiments quickly.

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“The idea is that it can be a little more flexible, a little more nimble,” Marshall said. “You can follow the science, you can come up with a new hypothesis based on the data you generated, and move to an experiment without having to wait many months or years for another funding round.”

Under the agreement, researchers from the five U.K. universities will have access to the most mature compounds in GSK’s pipeline — including marketed products and molecules in clinical development — to use for probing disease mechanisms in preclinical and clinical experiments.

GSK will retain all IP related to its existing compounds, but the researchers will have rights to any potential therapeutics

developed in the future resulting from the research funded through EMINENT.

“Our vision of it is GSK scientists can bring any interesting assets they may hold and they can discuss freely all the data they have around the asset and how it might interact with different receptors and pathways,” said Stephen Oakeshott, program manager for translational research at MRC. “Then they can work with the academics within the network to design experimental programs to really probe disease mechanisms.”

GSK sees the network as a chance to get top minds thinking about its compounds, and to exploit that talent in a mutually beneficial way to use the molecules to learn more biology.

“Fundamentally, we want to access novel and innovative thinking, and give the high-quality academic community in the U.K. a chance to work with and use our expertise and our compounds,” said Marshall. “The PI for these projects will be an academic leader, but the idea is that there will be an area of science that we can really collaborate in because there’s mutual interests.”

The preclinical work will be funded by MRC, and GSK will fund the clinical work and offer operational support, but all studies will be conducted at academic sites by the university researchers. ■

COMPANIES AND INSTITUTIONS MENTIONED

Altius Institute for Biomedical Sciences, Seattle, Wash.
Cancer Research UK, London, U.K.
Francis Crick Institute, London, U.K.
GlaxoSmithKline plc (LSE:GSK; NYSE:GSK), London, U.K.
Imperial College London, London, U.K.
Medical Research Council (MRC), London, U.K.
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University of California San Diego, La Jolla, Calif.
University of Cambridge, Cambridge, U.K.
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University of Glasgow, Glasgow, U.K.

REFERENCES

Parmley, S. “GSK aims higher in genetics.” *BioCentury Innovations* (2015)

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