NYU Langone Medical Center
www.med.nyu.edu/research/office-therapeutics-alliances

Academic drug discovery on a virtual fast track

Through its nimble Office of Therapeutics Alliances, NYU Langone Medical Center is harnessing the therapeutic potential of its world-class research by partnering with external experts in commercial drug discovery and development to advance the next generation of medical therapies and diagnostics.

NYU Langone Medical Center, one of the preeminent academic medical centers in the United States, boasts a long tradition of being at the forefront of basic, translational, and clinical research. Among the center's most notable achievements are its contributions to the eradication of polio, the control of tuberculosis and yellow fever, the advancement of vaccines for hepatitis B and malaria, and the development of blockbuster drugs such as Remicade (infliximab) and Sutent (sunitinib malate).

Much of this success can be attributed to the establishment of productive industry partnerships by NYU Langone's technology transfer office, the Office of Industrial Liaison (OIL), to guide promising research through the process of translation into actual products. Over the past decade, NYU Langone has created 50 new biomedical startups and achieved top ranking for licensing income among US universities.

However, translation of academic research into commercial applications—whether drugs, diagnostics, or devices—has become much more challenging in today's risk-averse industry environment, where academic projects are increasingly regarded as being too early in the development process for partnering.

To continue driving innovation, NYU Langone established the Office of Therapeutics Alliances (OTA) in late 2013 to de-risk drug discovery and early-stage development projects to make them more attractive to industry.

Now entering its third year of operations, OTA has over 20 projects at different stages of development, several of which are partnered with industry. The office is looking to partner with additional biopharma companies, entrepreneurs, investors, and disease foundations to progress its expanding pipeline of projects.

Virtual translation

Traditionally, academic drug discovery has relied on individual researchers to advance their own programs through external funding, as well as on in-house screening and on support provided by technology transfer offices to commercialize inventions. In today's more risk-averse environment, such approaches are not enough to facilitate dealmaking activity with industry.

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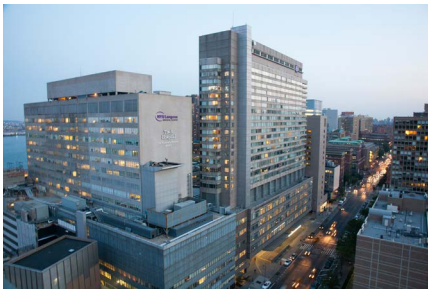

The NYU Langone Medical Center Office of Therapeutics Alliances has implemented a multi-step virtual biotech model to optimize and accelerate the translation of its world-class research into therapeutics.

OTA's mission is to bridge the gap between promising idea and actionable project by de-risking select projects to fit industry's investment criteria and to provide OIL with a robust pipeline of assets for establishing successful licensing partnerships.

To accomplish this, OTA has borrowed a page from the commercial world and implemented a multi-step virtual biotech model. First, it proactively identifies projects that address unmet medical needs. After conducting an in-depth scientific and business review, OTA engages external industry experts to draft a work plan of key drug discovery activities, which OTA financially supports and manages alongside the academic investigator. Working closely with OIL, OTA ensures that it also maximizes the creation of intellectual property to further enhance value.

Once a work plan has been developed, OTA contracts part or all of the work to external consultants and contract research organizations that specialize in the project's specific needs, very much the way a virtual biotech does it. In doing so, OTA not only generates industry-grade data, but also allays reproducibility concerns in industry.

"The OTA model recognizes the strengths of NYU Langone researchers is in their highly specialized expertise in disease biology and doesn't expect them to be equally knowledgeable in drug discovery. OTA combines the best of both worlds—our innovative biologists and seasoned drug developers—and manages their efforts," said Robert J. Schneider, associate dean for OTA and OIL.

OTA partnering

OTA sets itself apart from other academic accelerators by combining (a) a nimble and efficient virtual biotech approach and (b) a 'build to buy' approach whereby industry partners are engaged early to delineate de-risking strategies they consider necessary for partnering specific assets. Thus OTA is interested in exploring opportunities related to all therapeutic areas and medical technologies, and at any stage—from target discovery to early-stage development.

Current projects include collaborations with MRC Technology to develop therapeutic antibodies for inflammatory osteolysis; with the startup iβeCa Therapeutics, developing drugs targeting the oncogenic Wnt pathway; with the startup ENB Therapeutics, targeting the endothelin B receptor in melanoma; and with undisclosed venture capital (VC) firms and big pharma companies.

"In a very short time, OTA has had a very positive impact not just on deal terms, reflecting OTA's value added, but more importantly on our ability to forge partnerships earlier than we otherwise would have, and with more experienced teams to maximize the likelihood of products being successfully developed," said Abram Goldfinger, executive director of OIL.

To meet diverse industry needs, OTA allows flexible structuring of collaborations and licensing of its portfolio activities. For instance, potential partners can choose to become engaged in a project as it reaches key milestones. Alternatively, such partners may be involved from an early stage by cofunding and codesigning a project work plan with OTA in return for future rights, such as a right of first negotiation.

"Industry partners—pharma, biotech, or VCs—looking to invest in early-stage assets are primarily concerned with data reproducibility and validation. OTA's mission is to generate such data," said Nadim Shohdy, director of OTA. "Our mission is to engage partners around their interest in a project and to amass the data they need to ink a deal. Better data mean more valuable intellectual property, prominent partners, attractive financial terms and, ultimately, a greater likelihood that NYU Langone research gets translated into drugs that can help patients."

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