

Core Partner Strategy Opens Doors for Research Collaboration Across Earth and Sky

New Horizons

by WHITNEY WEEKS

Tapped because of his involvement with the undergraduate and graduate Materials Science programs and his work in the field of nanoscience, Assistant Professor of Physics James H. Dickerson found himself in Cape Town, South Africa in March 2007 as part of a delegation of fellow Vanderbilt faculty and administrators visiting the University of Cape Town (UCT).

Dickerson, a faculty member in the Department of Physics and Astronomy, returned from the trip excited about the potential for international collaboration with two members of the UCT faculty he'd just met. Creating opportunities for international partnerships was the mission of his trip, but no one could have imagined that a twenty-five minute presentation would develop into a series of joint experiments that would ultimately lead to a recent patent application and ongoing research collaborations.

The delegation, which included several members of the physics and astronomy department, former Vanderbilt Chancellor Gordon Gee, and Joel Harrington, Assistant Provost for International Affairs, had a two-fold mission. Rather than call each other partners in name only, Vanderbilt and UCT agreed to become genuine "core partners," throwing wide open the doors for possible collaborations in multiple colleges, departments, and research groups at both insti-

tutions. The other purpose of the visit was a three-day workshop that involved astronomers and physicists from both institutions discussing each other's research and exploring specific avenues for collaboration and exchange.

The idea for Vanderbilt's Core Partner strategy came to fruition a mere two years ago. The Vanderbilt International Office (VIO), guided by the recommendation of the Advisory Council for International Affairs, decided to implement the Core Partner strategy as a way to move away from the "more is better" model of international partnerships used by many of Vanderbilt's Level I research university peers. Instead of employing a broad and too often superficial definition of 'partner,' VIO developed this strategy to spur new international research collaborations, and, at the same time, deliberately and methodically form university-wide relationships with select universities in specific regions across the globe.

Already this new approach to international collaborations is increasing the ease with which collaborative agreements are entered into and is simultaneously, and equally importantly, creating a previously unknown depth of relationship between Vanderbilt and its core partner institutions. This new level of relationship brings with it benefits such as increasing the likelihood of even more university-

to-university collaborations and exchanges, and also raises awareness about the prominence of Vanderbilt within the core partner's surrounding community and geographic region.

Dickerson's experience with meeting, discussing, and eventually collaborating with two UCT colleagues is an excellent example of how the Core Partner strategy brings people together to see how connections can be made. During Dickerson's presentation on that initial trip to UCT, he spoke about research trajectories at Vanderbilt and mentioned his own work on the nanoscience of rare earth materials. That immediately resonated with David Thomas Britton and Margit Harting, both professors in the Department of Physics at UCT.

"In post-symposium briefings, we found we had a very nice cross-over of research interests," says Dickerson. "We decided to continue talking and do very preliminary types of exploration about possible collaborative efforts between our respective research groups."

During that first visit, the three professors only had a few hours in which they could discuss their shared research interests, but even in that brief time, they exchanged enough information to suspect a natural collaboration existed between their two research groups. Dickerson later returned to South Africa to follow up with these initial discussions, and both Britton and Harting have since visited Vanderbilt, resulting in a new international collaboration on novel metal-nanoparticle composites, including joint manuscript submissions and a patent application.



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—Dr. James H. Dickerson, Assistant Professor of Physics



There are a lot of good universities out there, but it doesn't make sense to be too broad. Once we took into account the geographic regions, we wanted to look for universities comparable to Vanderbilt in their breadth of academic coverage as well as the quality of their offerings.

"As is well known in much of the natural sciences, collaborations can develop with faculty and scientists anywhere. For us, it was very fortuitous that things my research group can do—materials we can develop—are materials that the group in UCT was really seeking out," says Dickerson. "Because of that match, this relationship of having UCT as a Core Partner is even more greatly facilitated by the possibility of making more easy the exchange of ideas, graduate students, undergraduate students, senior faculty, senior staff between the universities by decreasing the level of existing bureaucracy."

make sense to be too broad,” says Ron Schrimpf, Advisory Council member, Professor of Electrical Engineering, and Director of the Institute for Space and Defense Electronics. “We looked for geographical diversity, and in particular we wanted to cover some of the regions where there is a lot of development happening. Once we took into account the geographic regions, we wanted to look for universities comparable to Vanderbilt in their breadth of academic coverage as well as the quality of their offerings.”

In all, three criteria must be met in order for an institution to be considered for a core partnership. It must demonstrate research prominence in areas similar to Vanderbilt. It must possess disciplinary breadth by housing at least six counterparts to Vanderbilt’s ten colleges and schools. And it must be strategically located in terms of geopolitics, economics and accessibility. In addition to meeting the

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three criteria, a core partnership cannot be entered into unless there is a strong willingness by senior leadership at both institutions to commit the necessary resources to the success of the endeavor. From the beginning, it was agreed that pomp and circumstance without a real commitment of resources and talent would be unacceptable.

And then there’s the “V” factor. In every instance, before an invitation for becoming a core partner was extended, myriad people at Vanderbilt vetted the universities under consideration. Conversations and recommendations from the university’s deans and faculty were instrumental in creating the final list of potential partners, and in every instance of a core partnership being formed, multiple Vanderbilt collaborations and partnerships already existed.

Five core partnerships have been entered into since 2006—Fudan University (China), University of Melbourne (Australia), University of Cape Town (South Africa), Pontifical Catholic University of Chile (Chile), and University of São Paulo (Brazil). Already, all are well on their way.

Time and again, Vanderbilt faculty offer up examples of how because of a particular core partnership, they are made aware of unique collaborative opportunities. After Vanderbilt’s core partnership was announced with the University of Cape Town, Robert Scherrer, chair of Vanderbilt’s Department of Physics and Astronomy, was immediately contacted by a UCT physics professor.

“He e-mailed and said we should try to get something going,



Keivan Stassun’s collaboration with UCT to construct a robotic telescope has led to research by a Vanderbilt graduate student in South Africa last spring. A UCT graduate student will come to Vanderbilt this fall to help analyze the telescope’s data.

I knew his name from journals, but hadn’t met him before,” says Scherrer. “The core partnership provides a framework to work with particular universities that might not have existed before and spurs new collaborations—and those are always a good thing.”

Keivan Stassun, Associate Professor in the Department of Physics and Astronomy, and his UCT partners are working together on a telescope project being used to search for planets around other stars like the sun, a project whose beginning predates the core partnership announcement.

As part of Stassun’s current collaboration, a small robotic telescope was constructed in South Africa to collect data. The information gathered is physically sent to Vanderbilt for processing and analysis. Future phases of collaboration are expected to involve stu-

dent and faculty exchanges as well as the publishing of co-authored papers. Already a Vanderbilt graduate student has spent the spring semester doing research with a South African astronomer, and plans are underway for Vanderbilt to host a UCT graduate student this summer to assist in the process of analyzing the telescope’s data.

The collaborations of Dickerson and Stassun are but two examples of a range of partnering that is currently taking place between Vanderbilt’s colleges and schools and their peer entities at core partners around the world. There are five additional collaborations between UCT and Vanderbilt in various stages of development or implementation. At the University of Melbourne, Vanderbilt’s first core partner, the number of collaborations is a very encouraging twenty plus. Even greater numbers are anticipated in the coming years.

“If these are going to be meaningful institutional relationships, they will take time,” says Harrington. “We’ve made great strides in two years, but long relationships are not built overnight with a single agreement. A large number of individuals going back and forth over a period of years and following where the collaborations lead will truly yield what we’re looking for. We’re definitely on the right path.”

While that path certainly involves encouraging collaborations with core partners, VIO staff and Advisory Council for International Affairs members have been adamant that the intent of this new strategy is one that should broaden research opportunities, rather than limit them in any way. “We don’t want to constrain any of the researchers on campus,” says Schrimpf. “If there is a natural reason to collaborate with someone not on the list, they are free to do and actually encouraged to do so.”

The potential for university seed funding, a decrease in bureaucracy, and an increase in the ease of sharing of students, faculty, and materials alike makes core partners more and more appealing to Vanderbilt faculty and researchers. As the depth of relationship increases with each core partner, all individuals at collaborating institutions—regardless of research area or faculty versus administrative function—benefit.

“It goes beyond a graduate student visiting with a core partner institution for a week or two,” Dickerson says of his own experience with a core partner institution. “It allows us to have relationships develop with ease between the whole universities that otherwise would exist between single departments. Collaborations can seem like they’re happening just down the hallway when you aren’t having to deal with the hurdles that would otherwise exist working with an international institution by yourself.”

With every successful collaboration, another strengthening tie between Vanderbilt and some of the finest institutions in the world is made. These carefully identified universities are not mere partners on official-looking paper, but they are truly changing the way the international community understands and appreciates Vanderbilt.

For more information about Vanderbilt’s core partners, visit www.vanderbilt.edu/vio and select ‘collaborations.’

VIO GRANTS PROGRAM

Getting Collaborations Started

The Vanderbilt International Office (VIO) Grants Program provides funding to a variety of international research partnerships and exchanges. With grants given in the \$4,000 to \$15,000 range, the program offers seed money that supports international collaborations in their earliest stages.

As of its one-year anniversary in March 2008, the program is already seeing success. In its very first round of awards last year, VIO received just nine applications. The program has received more than 50 applications in the months since and hopes to see those numbers continue to rise.

“This is something we are really proud of, as it demonstrates that international collaboration is on the rise at Vanderbilt,” says Melissa Smith, administrator of the program.



Melissa Smith

Two levels of grants are awarded. Category A grants of up to \$4,000 support exploratory meetings. Category B grants award up to \$15,000 to support up to one semester of work. The latter grants require matching funds from a dean or other internal source. Typically, recipients are also supported at some level by the international institution with which they are partnering.

“We hear from faculty time and again that it is a challenge to find funding to initiate new international collaborations. The VIO Grants Program meets that need, providing the seed funding necessary to get the ball rolling,” says Smith. “The hope is that these funds help the collaborators lay the groundwork to successfully apply for larger grants to sustain their research.”

As with all Vanderbilt International Office programs and initiatives, the ultimate goal of the grants program is to encourage international collaborations and exchanges and promote Vanderbilt to the international academic community. While projects with any peer institution are eligible for the grants, VIO hopes more and more collaborations will involve those institutions with which Vanderbilt shares a core partnership.

With each passing round of grants awarded, applications indicate that faculty are increasingly aware of—and interested in—the potential for well-matched work with these core partners.

For more information, visit www.vanderbilt.edu/vio and select ‘funding.’