

FABI 20 Years

THE ROAD TO RESEARCH EXCELLENCE

THE FABI STORY



UNIVERSITEIT VAN PRETORIA
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FABI

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THE ROAD TO RESEARCH EXCELLENCE

Prepared by Prof. Mike Wingfield, Founder and past Director of FABI on the occasion of the Institute's 20th Anniversary, January 2018.



This history of the Forestry and Agricultural Biotechnology Institute (FABI) was prepared by Professor Mike Wingfield, Founder and Past Director of FABI (1998-2018) on the occasion of the Institute's 20th Anniversary in January 2018. For more information regarding FABI, please visit the Institute's website: www.fabinet.up.ac.za



THE FABI STORY

IN PURSUIT OF RESEARCH EXCELLENCE

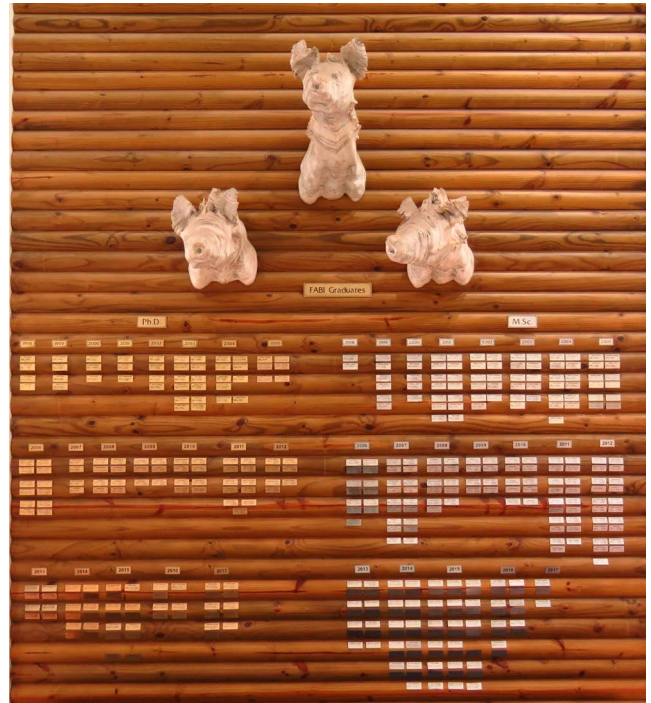
INTRODUCTION

When I first agreed to a suggestion from my colleagues that I might write the “FABI story” as part of the 20th Anniversary of the Institute, the task seemed quite easy to achieve. I would return to one of my favourite parts of the world, a remote area on the east coast of South Africa and reflect on the past 20 years. The task of writing the FABI story has turned out to be much more challenging than I could have imagined. I will explain further shortly.

Returning to Pullens Bay could not be a more apt area to begin to think about writing the FABI story. It was right here on the sandy beach, underneath the beautiful coastal milkwood trees that Brenda and I debated during the Christmas break of 1997 what the new Institute might be called. Brenda has always been good at coming up with names and the name FABI was hers. There could not have been a better name for exactly what we hoped to do: to aggressively promote the future of Forestry (and forests) and Agriculture in South Africa and globally, through the application of the most modern scientific methods available to us. I have often said in meetings during the course of the past 20 years that the “F” in FABI stands for so many things that we believe in - FABULOUS, FANTASTIC, FUNGI, FORESTRY, FOOD, FUTURE-DRIVEN, FUN and many more!

FABULOUS FABI - The “F” in FABI stands for so many things that we believe in - FABULOUS, FANTASTIC, FUNGI, FORESTRY, FOOD, FUTURE-DRIVEN, FUN and many more!

The challenge of writing a concise history of FABI lies in the fact that histories deeply reflect not only the knowledge of a topic by the authors, but also their impressions and their perceptions. Authors of such documents usually make note of the fact that the opinions expressed are their own and that they do not necessarily reflect those of others. In telling the FABI story, I must acknowledge that I am obviously biased in some respects. I am sure that, particularly in the early days, there were discussions held and decisions made where I was not directly involved. In this regard, I can only tell the “story” as I know it and up front I apologise to those people that might have contributed to the establishment and growth of FABI and of whom I was not aware. But let me start at the beginning...



The primary focus of FABI research has always been on research excellence and outstanding education at the postgraduate level. By the end of 2017, more than 480 students had completed M.Sc. or Ph.D. degrees at FABI.

IN THE BEGINNING

The beginning - FABI started with a phone call from Prof. Johan van Zyl, then Vice-Chancellor and Principal of the University of Pretoria, late in 1996. As some might say, the rest is history.

From my perspective FABI started with a phone call from Prof. Johan van Zyl, then Vice-Chancellor and Principal of the University of Pretoria late in 1996. I remember the moment clearly. I was sitting in my little “home office” in Bloemfontein working on a student manuscript when I answered that call. I had never met Johan but I had heard of him. This was because I had learned how he had led the merger of the Faculties of Science and Agriculture at the University of Pretoria - a strategic move that in my youthful exuberance appeared to be what we should be doing at the University of the (then) Orange Free State (UFS). Let me



The Tree Protection Co-operative Programme (TPCP), established in 1989 with Board Members (L-R) Neville Dennison (Mondi Forests), Mike Shaw (Sappi), Peter Roberts (ICFR), John Tew (H.L.H) and Mike Wingfield (Director), was the catalyst for the establishment of FABI.

not tell that story here, save to say that I “burned my fingers” by clearly sticking my “young” nose in where it did not belong. I digress, so let me return to Johan’s phone call!

Johan introduced himself and then suggested that I might consider moving to the University of Pretoria along with the research team that we had established at UFS. This suggestion came as a shock and my first words were “this is impossible, we have established very deep roots in Bloemfontein!”. Indeed, shortly before that time, we had enjoyed the official inauguration of the new forest pathology laboratories, established with substantial funding from the South African forestry company Sappi. After some years of negotiating the funding and then the construction of these wonderful new facilities, the idea of moving seemed completely untenable. Johan’s response was polite and clear “if you are scared to discuss a move, I fully understand”. Whether he intentionally chose the word “scared” I do not know, but he had clearly unsettled me in suggesting that I might not be susceptible to considering new and exciting challenges.

Some months later I was due to pass through Pretoria on a trip to South America and Brenda persuaded me that I should make an appointment to see Johan. This meeting ended very differently to what I had imagined might ensue. We met in the Vice-Chancellor’s office and I talked about the programme at that time known as the Tree Pathology Co-operative Programme (TPCP) that we had established in Bloemfontein, with the support of three large South African forestry companies. By that time, the TPCP had grown to a team of about 56 staff members and postgraduate students working on various disease and insect problems affecting plantation forestry in South Africa and abroad. Thinking back to that meeting, I have to imagine that Johan was not particularly interested in these details; I suspect he already knew a lot more about our team in Bloemfontein than he let on!

After a relatively short meeting in the Vice-Chancellor’s office, Johan asked me to have dinner with him. My guess is that he must have cancelled some other much more important meeting to make time for us to continue talking in a more relaxed atmosphere accompanied by a glass of red wine. We proceeded to the well-known

Pretoria restaurant Pachas, where Johan began to sketch out some of his ideas: that we might consider moving the TPCP to Pretoria and where he would support the establishment of a new Institute to accommodate the team. He was thinking big! I remember saying in parting that “if you are thinking in these terms I will commit to considering the proposal”. He made only one request: this was that he would like to meet Brenda and I agreed to pass on that message to her. You can already tell that there was conspiring going on in the background.

After a relatively short meeting at the beginning of 1997 in the Vice-Chancellor’s office, Prof. Johan van Zyl asked me to have dinner with him. By mid-1997, the first FABI buildings were already being constructed!

The next day I flew overseas on a long trip ending in Mexico. On my way home, the South African Airways flight from Miami stopped in Cape Town as this was the first port of entry and I needed to enter South Africa there. I used the opportunity to phone Brenda. She told me that I needed to fly directly to Johannesburg rather than returning home and to meet with Johan. In her words “he has big plans and you need to listen to him”. And it was more or less at that point that our

decision was made to move to Pretoria. This was early in 1997. By mid-year, the first FABI buildings were already being constructed!

Once we (Brenda was clearly a key player) had made the decision that we would move to Pretoria, I knew that I would need to broach the matter with leaders in the South African Forestry Industry. By that time, the Tree Pathology Co-operative Programme (TPCP) was nearly ten years old. I had initiated the programme with the three largest South African forestry companies in 1990 after a period of negotiations in 1989. The TPCP had by that stage already gained substantial national and international recognition. Funding was secure and supported by the University of the Free State collaboratively with virtually all South African Forestry companies and various other stakeholders such as the National Research Foundation.

At this point, I had one major concern. This was that I needed to engage with the members of the Board of the TPCP and explain to them that I felt that a move to Pretoria would be in their interest. I had no doubt that this was true and that they would benefit strongly from the planned move. But the “Captains” of the forestry industry had supported the development of a very strong research team in Bloemfontein and this was despite the fact that Bloemfontein was in the heart of the agricultural crop growing region of South Africa. Very distant from where their plantations were based! How might they respond to moving a team that they had



Members of the TPCP research team in Bloemfontein in 1998 and most of whom moved to Pretoria to establish FABI.

supported strongly? I rather hesitantly arranged to have a beer with one of the Board members and wondered how he might view my news. When I eventually built up sufficient courage to broach the topic he said to me “Mike, we have all been wondering when you would discuss these plans with us”. What a shock this was for me! Professor Johan van Zyl had clearly met with various of the key stakeholders before he approached me to consider a move. I learned a lot from this lesson!

The next step was to inform my then employer of our plans. This was not easy given that the UFS had been a very supportive and positive employer. We had really enjoyed our near ten years in Bloemfontein, having had the opportunity to establish a strong research programme and we made many good friends in the process. Our move from Stellenbosch to Bloemfontein nearly a decade previously had been met with amazement by many of our friends and colleagues. A move from the mountains, wine farms and sea was neigh on insane to many. But I will always say that our time in Bloemfontein was a very happy one where we were able to get to know many wonderful and genuine people. As Prof. Piet Lategan (the engineer of the Stellenbosch to Bloemfontein move) often said “people cry when they move to Bloem and they cry when they leave”. I can only but agree. Thus, informing our employers that we would be leaving Bloemfontein was not easy. This was made doubly so because there really was no good reason, other than our belief that the move would be good for us personally, for our colleagues and students, for Forestry and for Science in South Africa.

It is said that people cry when they move to Bloemfontein and they cry when they must leave. I can only but agree. Thus, informing our employers that we would be leaving Bloemfontein was not easy. We had been treated well, had the opportunity to build a major research programme and we were happy.

The next step was to inform our staff and students of our plans to move. I remember clearly the Monday Morning Meeting (these were later to become an “institution” in FABI) in April where I discussed this topic. We had a wonderful team of staff members and students at that time. In all about 50 and we wanted them to have the best possible transition, either to new leadership or to move with us. I was amazed when virtually every team member came to tell me individually that they wished to move with us. There were of course a few members of the group that could not move due to family and other considerations. We tried our best to find appropriate new opportunities for them. In all, the group that moved from UFS to Pretoria included 56 staff members, M.Sc. and Ph.D. students and postdoctoral Fellows. These were the “trail blazers” - the FABI “starter pack” - and they all played a crucially important role in the establishment of the new Institute in Pretoria.



Construction of the FABI Main building began in mid 1997. The building was occupied, albeit not entirely complete, in April 1998. The girl in the picture is seven-year-old Beverley Wingfield.

GETTING STARTED IN PRETORIA

Other than Prof. Johan van Zyl, two members of the University of Pretoria leadership played a key role in our decision to move and also in the process of establishing a structure for the new Institute. They were Prof. Robin Crewe and Henk Huisman. Visionary academics who could see the future. We owe them a great debt of gratitude.

The move to Pretoria from Bloemfontein was complex and this occurred over approximately 12 months. There were many meetings held in Pretoria to decide on how FABI might be structured. Meetings with architects, construction engineers and, importantly, with members of the University of Pretoria leadership. Other than Prof. Johan van Zyl at the helm, there were two members of the University of Pretoria leadership that played a key role in our decision to move, but also in the process of establishing a structure for the new Institute. These were Prof. Robin Crewe, the Dean of the Faculty of Natural and Agricultural Sciences where FABI would be “housed” and Prof. Henk Huisman, the Head of the Department of Genetics. Together with the Heads of Departments that would form the Advisory Committee (ADCOM) for FABI (I will return to this point later), these two remarkable and visionary academics must share a large portion of the credit for bringing FABI to the University of Pretoria and in guiding it on the path to research excellence.

A first step in getting started in Pretoria was to refurbish laboratories on the sixth floor of the “new Agriculture” building (also known as the Landbou Gebou) on the University of Pretoria East campus. That work began concurrently with the building of the first FABI “main building”, a project that would extend well into 1998. Thus, the first team members to move to Pretoria in September 1997 were accommodated on what became known as “FABI Sixth Floor” - facilities that FABI continues to occupy. The “second wave” of new FABIans moved during December 1997/ January 1998 and they were also accommodated on FABI Sixth Floor. In most cases the “second wave” of new FABIans were made up of those in the group that had children who needed to begin the new school year in January of 1998.

The third and largest team of new FABIans to move from Bloemfontein occupied the new FABI Main building (for those who know us less well, this is the single story red tile-roofed building across from the Agriculture building). This was in April of 1998 and I was part of that move. I have to admit that I felt, at the time, that the move was premature. The new building



There are many stories relating to the fish pond in the FABI main building, perhaps the most significant is how it influenced negotiations leading to the establishment of the Institute. In this picture Mr. Eddie Simpson (Merck) delivers the first fish to the newly built pond.

was far from complete. The water system was not fully functional, tiling was not complete and telephones were yet to be installed. I suggested to Prof. Johan van Zyl that we delay our move. His answer was “Mike, you need to move now and to be on site to oversee the settling process”. I was not entirely happy with this view but in retrospect, I have to admit that he was correct. We needed to get started and to begin to integrate with new colleagues at the University of Pretoria.

As difficult as it might be to believe, it was only a month or so before we moved into the FABI Main building that I eventually signed an employment contract with the University of Pretoria. Looking back on that situation, I can understand why Johan felt anxious about my signing on the “dotted line”. He had committed the Council of the University to some very substantial investments on the understanding that I would be moving and take up the role as FABI’s first Director. And in my mind, there was no doubt that this would happen. But I was perhaps too conservative and I wanted to be sure that we would be functional as rapidly as possible. One stumbling block that I remember clearly was the completion of the fish pond that would have a prime position in the very centre of the FABI Main building courtyard.

A major stumbling block that I remember clearly was the completion of the fish pond. This was planned to have a prime position in the very centre of the FABI Main building courtyard. An unusual story but it is also one that conveys some important lessons. It is often the “little things” and not the obvious great accomplishments that are best remembered.



FABI was formally opened by Prof. Johan Van Zyl a year after the building had been occupied.

At this point you might be wondering why a fish pond was of any consequence to a project that had many much more important goals. Allow me to digress briefly here to share this story. I do so because I believe it says a great deal about the importance of stories and about what people remember. When we inaugurated the new Sappi wing of the Microbiology building in Bloemfontein, we installed a small portable fish pond in the courtyard to add some “colour” to the new environment. It was also linked to the fact that I had returned from a visit to Asia and remember a Japanese colleague of mine once saying that water and fish were important elements that brought peace and tranquillity to one’s workplace. At the inauguration ceremony of the Sappi building, we placed seven goldfish in the pond and named them Genus, Species, Taq, Polymerase, P, C and R. Months later, when I discussed with the then Sappi Director the fact that we would be moving to Pretoria, his first question to me was “what about the fish?”. Clearly we needed to have a fish pond in FABI and that we needed to move the fish with us from Bloemfontein.

Although Johan had agreed to us having a fish pond in FABI, there was an objection to this by the Head of Facilities. He made the point that fish ponds had been banned from the campus due to problems with their maintenance. On the day that I eventually signed my employment letter in Johan’s office, I told him that I was unhappy that the fish pond was not being built. His words on the telephone to the Head of Facilities I cannot repeat here. But the fish pond was built, I signed my employment contract and I was also made to sign a commitment to maintain the fish pond without support from UP Facilities and Services. In retrospect fish ponds while beautiful are painful to maintain and the FABI fish pond has given us many headaches and maintenance continues to be problematic. But it also captured an important part of the FABI story; it needed to be there at the time that the first FABI main building was established. It also focused my mind on the fact that sometimes it is the little things that are remembered and that these should not be forgotten.

By September 1998, most of our team of 56, along with their wives, husbands, partners, children and pets had moved to Pretoria. The last or “fourth wave” of new FABlans moved more or less at that time. Every person that moved with us has stories to tell. Each person had special needs and desires. I will, for example, never forget Prof. Anna-Maria Oberholster’s need to move a small herd of cattle to Pretoria and especially how Prof. Johan van Zyl made that possible. I hope at some time that we might capture these stories in a more extensive narrative than the one that I am able to share at this time.

ESTABLISHING A STRUCTURE FOR FABI

There was no “blueprint” as to how FABI might function, other than a broad mandate to build a stand-alone postgraduate structure with a focus on forestry and agricultural biotechnology. Having a clean slate on which to build the new Institute was definitely one of the keys to its success. FABI was an experiment from the very beginning.

Establishing a new Institute from a zero-base presented many challenges but it was also an incredible privilege. There was no “blueprint” as to how it might function other than a broad mandate to build a stand-alone postgraduate structure with a focus on forestry and agricultural biotechnology. Forestry, Agriculture and Biotechnology; three simple words but words that can be interpreted incredibly broadly. Consequently, it was up to the first academic leaders to establish the *modus operandi* for how FABI would operate.

Following University norms, I was tasked with writing a constitution for FABI that could be presented and approved by Senate. As a draft, I used the constitution of the Mammal Research Institute, an internationally recognised Institute in our Faculty that had originally been a stand-alone structure, but at the time of establishing FABI, was integrated into the Department of Zoology. I remember thinking that this was a rather interesting “turn of events” given that the founder director of the MRI was the world-renowned Zoologist Prof. John Skinner. John and his family lived in the little village of Irene where I grew up and where I on occasion baby-sat for his children. But more importantly, John provided me with dead rats and frogs to practice my dissection skills when I was a (not particularly good) first year Zoology student at the University of Natal in Pietermaritzburg. Although unknown to him, John had again provided me with guidance. The FABI constitution was approved by Senate and we were able to formally begin our work. FABI would have an Advisory Committee (ADCOM) including the Dean of the Faculty of Natural and Agricultural Sciences (Prof. Robin Crewe) and the Heads of those Departments housing academic staff members involved in leading FABI. At the time those Departments included Genetics (Prof. Henk Huismans), Microbiology and Plant Pathology (Prof. Eugene Cloete), Botany (Prof. Albert Eicker), Zoology and Entomology (Prof. Clarke Scholtz) and Biochemistry (Prof. Albert Neitz). My academic appointment as Chair of the ADCOM was in all of those Departments although this was never instituted operationally other than the fact that I could theoretically be an advisor of students in all those departments.



Researchers in the Tree Health Programme in FABI spend more than 1,000 person days in the field each year. The decals on the vehicle illustrate the many stakeholders involved in some of the FABI programmes and how field work can be difficult, dirty and fun.

At the outset, FABI had only two staff members that were assigned directly to the Institute. Looking back, this was a rather risky situation on which to rest a major investment. But I can also see that proving return on investment needed to underpin future commitments.

At the outset, FABI had only two staff members that were assigned directly to the Institute: myself and my personal assistant, Mrs. Rose Visser who had joined us in the move from Bloemfontein. In addition, I was given an open post to fill meaning that FABI would have two dedicated academic staff members. The open position was initially offered to Prof. Pedro Crous (now the Director of the Westerdijk Fungal Biodiversity Institute in Utrecht, the Netherlands), my fourth Ph.D. student who had taken up a position as a Senior Lecturer in the Department of Plant Pathology at the University of Stellenbosch. I would like to say that Pedro was seriously tempted to join us, but I think he also knew that our personal friendship might be seriously tested if he were to become one of the first FABI leaders. This position was then offered to another past Ph.D. student, Prof. Altus Viljoen, now Head of the Department of Plant Pathology at the University of Stellenbosch. Other members of our team that moved from Bloemfontein were accommodated as members of staff in various Departments; Prof. Brenda Wingfield in Genetics, Prof. Teresa Coutinho in Microbiology and Plant Pathology and Prof. Anna-Maria Oberholster in Genetics and Botany (now Plant and Soil Sciences). These three academics, with myself and Altus became the first members of a structure that became known as the FABI Management Committee (MANCOM).



Outstanding research accomplishments have led to FABI team members receiving prestigious awards. In this picture, Dr. Marieka Gryzenhout, Prof. Jolanda Roux and Prof. Brenda Wingfield celebrate awards received in 2007.

As the years have passed, the academic staff structure of FABI has changed. Dedicated staff members have been assigned to FABI at various points in time. At the time of the 20th Anniversary, FABI has nine dedicated academic positions. These are crucial to the stability of the Institute.

As the years have gone by, the academic staff structure of FABI has changed. Dedicated staff members have been assigned to FABI at various points in time. The third staff member specifically appointed to a FABI position was Prof. Karl Kunert. This appointment arose when the South African chemical company AECI decided to close its nascent plant biotechnology programme. This occurred very soon after FABI was established. I clearly recall a meeting that then Dean Prof. Robin Crewe and I attended at the AECI headquarters in Modderfontein to negotiate a deal where we would accommodate Karl on our staff. Karl is an outstanding plant biotechnologist and this provided FABI with a superb opportunity to expand its

The first members of the MANCOM decided on an operating structure for FABI. For example, we decided to hold a FABI group meeting every Monday morning; a structure that continues today and that our students commonly refer to as FABI MMM. These fixed structures underpin research collaboration, group unity and team spirit.

capacity in this field. Karl's move to FABI meant that our main building, initially designed with some space to grow, was now completely full. It was already clear at that time that we would need to expand the physical facilities.

The first members of the MANCOM decided on an operating structure for FABI. For example, we decided to hold a FABI group meeting every Monday morning; a structure that continues today and that our students commonly refer to as FABI MMM. We decided that attending this meeting should be compulsory for all FABI staff and students. While perhaps not always popular, this would provide a single time every week where the FABI MANCOM could provide members of the team with news relevant to FABI and particularly relating to developments on campus as well as within the Science structure in South Africa and internationally. The MMM would also provide a forum to motivate the team and to share ideas and opportunities across the rather diverse disciplines covered by the research in FABI.

Another important structure established in FABI was the Thursday Morning Student Seminars. Some of the MANCOM members had been exposed to very well established seminar programmes at other universities. We were rather surprised that some of the Departments linked to FABI did not have seminar programmes and we believed that these would be essential to the future of FABI. This was especially so because the scope of our research covered a very diverse range of subjects and we believed that our team members would benefit substantially by regular exposure to research being conducted across a wide range of disciplines. For example, at the time that FABI was established, recombinant DNA technologies were hardly used in the Plant Sciences at the University of Pretoria. FABI already had strength in this area and I can say with confidence today that the Thursday Morning Student Seminars have played a crucially important role in sharing the details of new technologies and scientific approaches across the many disciplines relevant to FABI.

An important early structure established in FABI was the Thursday Morning Student Seminars. One of the great strengths of FABI lies in the interdisciplinary nature of the research being conducted; far beyond what is possible in the academic departments. Over the years we have witnessed the amazing power of the intersections between disciplines in the research outputs of the FABI TEAM.

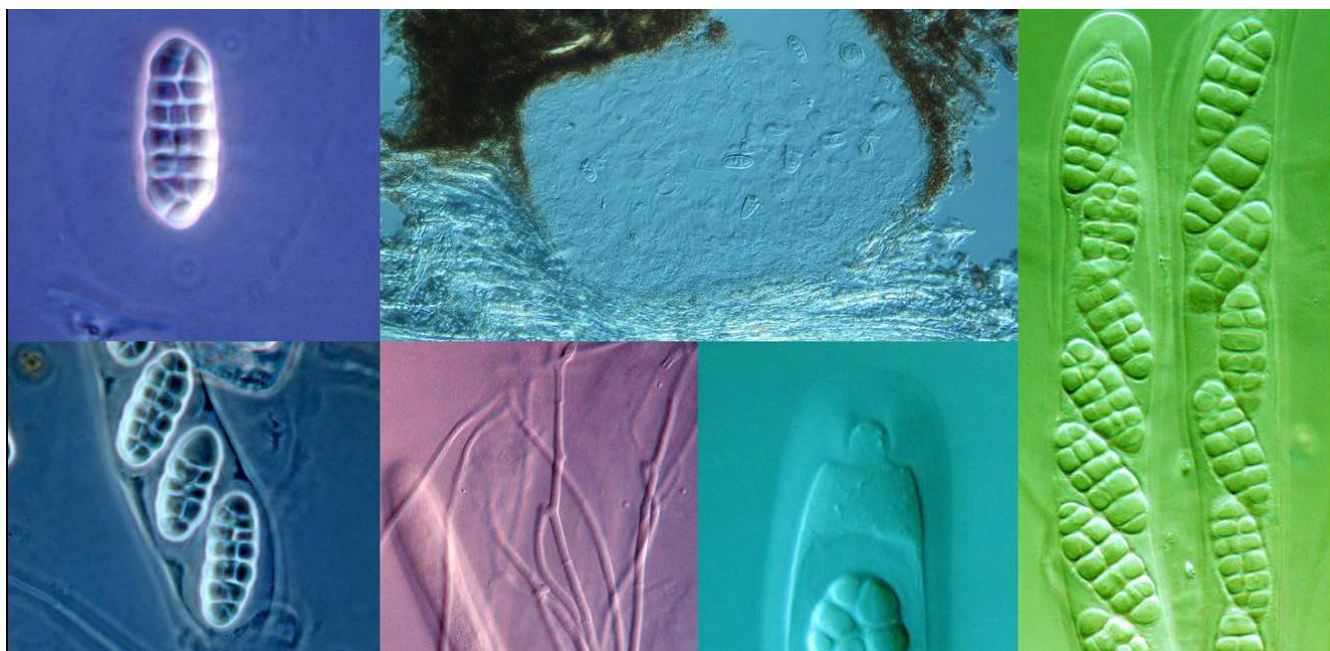
In addition to student seminars, the FABI MANCOM has facilitated regular presentations of special seminars by colleagues and scientists at the University of Pretoria, from other research institutions and Universities in South Africa and internationally. From the outset, the FABI MANCOM has always agreed that attendance of seminars and meetings should be mandatory for members of the FABI TEAM. Although this approach might be seen as somewhat dictatorial, I have no question that this approach has been crucial to the growth and development of FABI. The bottom line here is that it is all too easy, particularly for young and inexperienced students, not to recognise the importance of a team effort and especially the value of being exposed to the views and experiences of a wide diversity of other scientists and colleagues. It is always interesting for me to hear past students speak of their experiences in FABI and particularly how much they gained from attending FABI meetings. And I also remember some of these students being somewhat less enthusiastic about attending these meetings at the time that they were in FABI.

One of the most important structures in FABI is the email listserver known as FABITEAM. At the time when FABI was established, email was still poorly developed; institutional websites had only begun to appear commonly in 1995 - just three years before FABI was established. When FABI was established all team members were provided with @fabi email addresses as aliases and these addresses connected us to each other via the listserver FABITEAM@kendy.up.ac.za. Perhaps in jest, I have at times suggested that the FABITEAM listserver is the real leader of FABI. This is the most important mechanism by which we communicate with each other, sharing news items, publications of general interest and notifications

of important gatherings and opportunities for staff and students. I am not sure whether the FABITEAM list server was the first of these amazingly powerful tools to be established on the campus of the University of Pretoria, but if not, it was certainly one of the first. Today, such listservers are common and, importantly, they very easily link us to information on websites. Social Media (Facebook, Twitter etc) did not exist when FABI started but has absorbed some of this role. But in my view listservers where all participants receive all mail posted remain an incredibly important and powerful tool. It would have been difficult to build FABI without the FABITEAM listserver.

One of the most important structures in FABI is the email listserver known as FABITEAM. All FABI team members are required to join ensuring that all postings are seen by the entire group. This ensures the sharing of relevant news, interesting papers and it connects FABIans to the FABI website (www.fabinet.up.ac.za) where more detailed information is stored. In many ways the FABITEAM list server leads FABI.

In ending this section, let me briefly return to the FABI MANCOM and how it has grown over the course of the past 20 years. Membership of MANCOM was always relatively open to academic staff members of the University of Pretoria who saw value in conducting their research within the FABI structures. The requirement



FABI research has led to the description of many hundreds of fungi, bacteria, viruses, insects and nematodes. This beautiful fungus from the Proteaceae was described in a study by Dr. Seonju Marincowitz.

was clear: their students would commit to joining the FABI TEAM (included on the FABITEAM listserver) and make attendance of FABI meetings a priority. Our approach has always been to apologise on the FABITEAM listserver when we're not able to attend meetings. This requirement included both staff and students. In addition to those academic staff members who have voluntarily chosen to conduct their research under the FABI "banner", a number of dedicated FABI staff members have been added to the FABI leadership team over the years. The first two of these positions were assigned to FABI when we were designated in 2004 as one of the South African Government's first six Centres of Excellent (the CoE Programme of the Department of Science and Technology and managed by the National Research Foundation). These positions were filled by Proff. Bernard Slippers and Jolanda Roux. Some years later, three additional posts were allocated, on merit, to FABI as part of an effort to boost the forest tree health programmes of the Institute. These positions were filled by Dr Marieka Gryzenhout, Dr Martin Coetzee and Prof. Wilhelm de Beer. At the time of the 20th Anniversary of FABI, there are nine dedicated FABI academic positions and a tenth position is allocated to the personal assistant of the FABI Director. The names of the incumbents of these

positions are listed in the FABI Biennial Report. These dedicated positions have been allocated based on merit and outputs of the Institute and they have become crucially important to maintaining the structures and the commitments of FABI. The remaining 16 academic staff members that conduct their research under the auspices of FABI and serve on the FABI MANCOM do so voluntarily and because they see value in doing so. They all have formal appointments in Departments at the University of Pretoria.

THE SOCIAL DYNAMIC

From the very outset, the FABI MANCOM recognised that it would be essential to develop a clear culture for the Institute. Simply put, FABI should also be a fun place in which to not only work hard but also to be able to enjoy the company of others. The great cultural spread of the FABIans has provided rich opportunities to absorb and benefit from the power of diversity.



Sheriff Stapelberg puts Big Chief Sitting Bull in his place at the 2017 annual meeting of the Society for the Presentation of Outrageous Findings (SPOOF).



The FABI Year End Gala Dinner and Awards Ceremony provides the opportunity to celebrate accomplishments of the past year and to have some fun, as can be seen from these FABI students from many different parts of the world.

From the very outset, the FABI MANCOM recognised that it would be essential to develop a clear culture for the Institute. It would certainly not be sufficient to bind the growing team solely through mandatory attendance of formal meetings such as seminars. A strong social structure would be essential and this should appeal particularly to students in the formative years of their careers. Simply put, FABI should also be a fun place in which to not only work hard, but also to be able to enjoy the company of others.

In mid-1998 when FABI was just beginning to function effectively, the MANCOM decided that it was time to organise a social event. At the end of 1997 and before most of the Bloemfontein group moved to Pretoria, the TPCP team had held a theme-based Year End Function. The idea for this function came from Prof. George Hudler from Cornell University who was spending a sabbatical leave with us. He convinced us to become the Epsilon Chapter of the Society for the Presentation of Outrageous Findings (SPOOF), a structure that had been established at Cornell some years previously. The new FABI team members decided that we should hold a meeting of SPOOF, together with fancy dress, presentations (including abstracts!) and a good party. Thus our first FABI social function was held in mid-1998 as a meeting of SPOOF and it was a roaring success. SPOOF has become the basis for the FABI mid-year celebration of Science and it has now been held at the University of Pretoria every year for the past 20 years. In the 19th year we were honoured to have George Hudler join us to present a keynote lecture and to see what he had started many years previously. I know that he was pleasantly surprised. SPOOF begun at Cornell and spread to four other Universities. To the best of my knowledge the only SPOOF "Chapter" that has held regular meetings is ours at FABI. Other than being an

opportunity to engage socially, the annual SPOOF meetings have provided a forum for us to laugh at ourselves. I have always believed that Science and lateral thinking are significantly stimulated by a little "wildness".

SPOOF began at Cornell and spread to four other Universities. To the best of my knowledge the only SPOOF "Chapter" that has continued to hold regular meetings is ours at FABI. SPOOF provides us with a forum for a mid-year social engagement and challenges us to laugh at ourselves. There is no doubt that this stimulates innovative thinking.



This FABI greeting card includes festive season greetings in 22 of the 28 languages spoken in FABI.

In November 2017, FABI held its 20th Year End Gala Dinner and Awards Ceremony. These functions represent a major annual event for FABI providing an opportunity to reflect on the accomplishments of the past year, to thank colleagues at the University of Pretoria and elsewhere for their contributions and to acknowledge the accomplishments of FABI students with a series of awards.

Details of these awards and past recipients can be found in the FABI Biennial Reports, but let me mention only one award. This is the FABIAN OF THE YEAR AWARD that is presented to a student who has contributed strongly to the running of FABI and importantly who has excelled academically. The recipients of this award are always Ph.D. students close to the end of their studies. Other than the reputational value of receiving a major reward, the award includes the cost of travel to attend a congress in any part of the world. It goes without saying that past FABIAN OF THE YEAR AWARD recipients have demonstrated exceptional achievement in their post FABI lives.

Arranging social functions requires a huge amount of effort and this task falls on the shoulders of the FABI Social Club which is run by students. The Chairperson of the Social Club receives a financial contribution to his or her student bursary due to the fact that this task requires considerable effort and dedication. All

Organising social functions requires a huge amount of effort. This task falls on the shoulders of the FABI Social Club which is run by students. I sometimes refer to the Social Club as the “glue between the bricks” of FABI. We believe that it is important for team members to give willingly of their time in the interests of the “bigger picture” and the Social Club provides opportunities for students from different disciplines and cultures to get to know each other.

M.Sc. and Ph.D. students are required to serve on the Social Club once during their degree term.

Because FABI has a very large student base - typically in excess of 150 M.Sc. and Ph.D. students, it is possible to have a large number of Social Club members each year. This spreads the work load, which includes the responsibility for advertising seminars as well as providing post-seminar refreshments and organising social events such as SPOOF and the year end function.

PHYSICAL GROWTH – RUNNING OUT OF SPACE



Construction of FABI Square began in 2004. This involved demolition of two houses (top).

I remember clearly my first discussions with Prof. Johan van Zyl to discuss possibly extending the FABI Main building. His answer, while broadly positive, came as a question – “show me the return on the initial investment”. It was easy to show that the funding that FABI had sourced in the first six years far outweighed the initial investment.



Mr. Mike Edwards, Executive Director of Forestry SouthAfrica planted one of the trees to commemorate the opening of FABI Square in 2005.

By 2004, it had become obvious that FABI required significant additional space to accommodate its growing staff and student numbers. I remember clearly my first discussions with Prof. Johan van Zyl to discuss possibly extending the FABI Main building. His answer while broadly positive came as a question - “show me the return on the initial investment”. I should not have been surprised but then set about preparing a clear view of the funding that FABI had sourced during its first six years. This was an important exercise, the results of which were even surprising to me. By the sixth year, even the external (third stream) funding had far exceeded the entire first financial investment made by the University. And this did not include income linked to students graduating and publication outputs. Consequently, the Council of the University agreed to construct a building attached to FABI Main building. This three-floor facility, now known as FABI Square/Bioinformatics was completed in 2005.

Initially FABI Square was designed to have seven floors but the University was challenged by significant financial constraints at the time. The new Vice-Chancellor and Principal, Prof. Callie Pistorius

was unable to secure funding to make the larger construction possible. Consequently, the building was erected with a (very costly) foundation that could carry seven floors and the top floor has a concrete base and a false roof such that additional floors might be added later. Realistically, I cannot see this ever happening as it would most likely now be more expensive to cease operations for more than a year in order to make modifications. A much better option would likely be to demolish FABI Main building and to use that space to erect a new and larger facility.

An interesting aside regarding the construction of FABI Square was a discussion that I had with the project team concerning the inclusion of a fish pond in the building. Fully aware that some of the team had been involved in the discussions (and tensions) regarding the fish pond in FABI Main building, I thought it would be fun to raise the idea - clearly in jest. I was taken more seriously than I expected and will never forget the shocked faces at that meeting! While I had no intention of fighting for another fish pond, we did include a rather beautiful mosaic fish pond in the floor tiling at the centre of the courtyard in FABI Square. I hope that this story will be remembered in years to come. It relates to an important conceptual issue relating to building a research culture.

By the time that the FABI team occupied FABI Square, virtually every inch of the new building was filled. This left no space for growth despite the fact that research success was leading to new projects and space needs.

By the time that the FABI team occupied FABI Square, virtually every inch of the new building was filled. This left no space for growth despite the fact that research success was leading to new projects and space needs. An option to resolve this problem arose when a decision was made to build a new facility to house the Department of Plant Science (previously Botany). The initial plan was for FABI to take over the Bioinformatics floor of FABI Square and to move Bioinformatics to the new Plant Sciences Complex. Such a move would have consolidated FABI research operations, but the costs of moving the Bioinformatics infrastructure outweighed the cost of FABI occupying a floor of the Plant Sciences Complex. This is what eventually happened and FABI now occupies a wing of the Plant Sciences Complex, together with the FABI Main building, two floors of FABI Square and the entirety of the sixth floor of the Agriculture Building. The space occupied by FABI is rather spread out on the East campus of the University of Pretoria, but the structures that bind FABI's operating system (Monday Morning Meetings, Seminars, Social events etc) allow the team to operate quite effectively.



FABI Square was formally opened in 2005.

GROWING RESEARCH PROGRAMMES

The team that launched FABI included 56 members, five of whom were academic staff and the remainder were students (M.Sc., Ph.D.), postdoctoral Fellows and a few administrative/technical staff.

The initial research programme that gave rise to FABI was the Tree Protection Co-operative Programme (TPCP) that moved from the University of the Free State to Pretoria. The team that launched FABI included 56 members, five of whom were academic staff and the remainder were students (M.Sc., Ph.D.), postdoctoral Fellows and a few administrative/technical staff. As FABI has grown during the course of the past 20 years numerous new research programmes have been established. I will not include all of these here (they are well illustrated in the last FABI Biennial Report) but will mention a few because they specifically illustrate areas of growth and opportunity.

The South African Forestry Industry was a major stakeholder in the establishment of FABI and it

has continued to grow research projects in the Institute. As molecular biology-based technologies emerged that could contribute to tree growth and development, the Industry showed increasing interest in this field. A fledgling programme known as the Molecular Screening Co-operative Programme (MSCP) was established together with the CSIR in the early years of FABI's growth with an aim to screen trees for resistance to pests and pathogens. This was led by Prof. Brenda Wingfield, with support from Dr. Colin Dyer then at the CSIR and later to become the Director of the Institute for Commercial Forestry Research (ICFR). The focus of the MSCP was narrow and mainly on disease resistance. The needs of the Forestry Industry were much greater and included for example a focus on tree growth and fibre traits. This need was filled with the appointment of Prof. Zander Myburg who had been linked to the Bloemfontein team as an M.Sc. student (with Proff Anna-Maria Oberholster and Brenda Wingfield) and who had proceeded to North Carolina State University for a Ph.D. focused on tree biotechnology. Zander joined the University of Pretoria in 2003 and with his team has become a key part of FABI. His impressive tree biotechnology programme has strong support from the Forestry Industry and is known as the Forest Molecular Genetics Programme (FMG), details of which can be seen in the last FABI Biennial Report.

The appointment of Prof. Zander Myburg resulted in the development of the Forest Molecular Genetics Programme (FMG). This has become one of the largest programmes in FABI. Other smaller research programmes are set to grow in a similar way.

When the Tree Protection Co-operative Programme (TPCP) was established in 1989 at the University of the Free State, the focus was strongly on tree disease problems. At the time the South African Forestry Industry had embarked on clonal production of *Eucalyptus* species and new disease problems such as *Cryphonectria* canker were emerging as important. However, from the outset, the TPCP provided the Industry with support both in the fields of pathology and entomology. For example, as the Sirex Woodwasp problem emerged in South African pine plantations, the TPCP became engaged in studying the biology of this insect pest. The Programme also had a long history of studying and dealing with problems linked to infestations of pine-infesting non-native bark beetles. In 2003, the Board of the TPCP challenged the TPCP to provide them with an integrated pest management system covering both insect pests and diseases affecting the Industry. What was the Tree PATHOLOGY Co-operative Programme became the Tree PROTECTION Co-operative Programme in that year. This also marked the starting point of a major invasive forest insect pest biological control programme, which has become one of the largest programmes of its kind in the world. This new initiative has also been important to the growth of FABI as a whole. The TPCP,

based at FABI, is now the largest single programme in the world dealing with tree health problems in forest plantations. The base of the Programme is clearly in South Africa, but it is integrated with many other tree health projects and programmes globally.

The TPCP, based at FABI, is now the largest single programme in the world dealing with tree health problems in forest plantations. The base of the Programme is clearly in South Africa but is integrated with many other tree health projects and programmes globally.

In 2003, the South African Department of Science and Technology (DST) embarked on a new initiative to establish formal science Centres of Excellence in the country. A country-wide call was issued for preliminary proposals to establish these CoEs. Professor Brenda Wingfield persuaded me that we should submit a proposal and I have to admit that at the time, I was not particularly keen to do so. My reticence lay in the fact that we were heavily committed to current projects and that we might battle to deal with another major initiative. Brenda was adamant that we needed to pursue the opportunity and agreed to lead the initiative and to write the proposal. My understanding was that more than 70 proposals were received. Thirteen respondents, including the Tree Health Biotechnology proposal submitted by FABI, were invited to submit full proposals. This was an exciting time, but came over the December vacation when most South Africans take time off from work as the submission deadline was very early in January. Nonetheless, we committed ourselves to producing the strongest possible



Field work and engagement with industry stakeholders has always underpinned research projects in FABI.

proposal. By mid 2004, we were advised that we had been awarded one of the first six CoEs supported by the Department of Science and Technology and managed by the National Research Foundation. This became the DST-NRF Centre of Excellence in Tree Health Biotechnology (CTHB) based at FABI.

In 2004 we were awarded one of the first six Centres of Excellence supported by the Department of Science and Technology and managed by the National Research Foundation. This became the DST-NRF Centre of Excellence in Tree Health Biotechnology (CTHB) based at FABI. The CTHB has had a huge impact on postgraduate student outputs, lifting the research bar and in leveraging new funding from Industry and Government.

As I write this narrative, we are about to enter into the last year of a third five-year term of the DST-NRF Centre of Excellence in Tree Health Biotechnology (CTHB) at FABI. The CTHB and all five of the first South African CoEs have excelled in ways that could not have been anticipated when they were first established. There have been regular international reviews of these programmes and they have all received glowing reports, both in terms of international achievement and impact. But the future of the first six CoEs is currently in question. The Department of Science and Technology decided in 2017 that they would not be supported to continue in the same manner as they have done for the first 15 years. However, the Department has also expressed a clear appreciation for the importance of these first six CoEs



Meetings of the Directors of Centres of Excellence have provided superb opportunities for FABI team members to engage with leaders from Government such as the South African Minister of Science and Technology, Honourable Naledi Pandor, in this photo.

and that they have all become very relevant national assets. Proposals for continuation underpinned by a new and revised approach are being considered and I am hopeful that our new proposal will be accepted. Loss of any of the first six CoEs would certainly mean a huge loss of capacity for Science and Education in South Africa.

The Tree Protection Co-operative Programme (TCP) and the Forest Molecular Genetics Programme (FMG) are the two largest projects in FABI and they make up about seventy percent of the student/staff component of approximately 240 FABIans. Other programmes, while somewhat smaller, provide important research support for Agriculture and Forestry in South Africa. Many of these are set to grow substantially in the future. They include the Avocado Research Programme (leader: Prof. Noëlni van den Berg), the Bacterial Genomics and Tree Health Programme (leader: Prof. Fanus Venter), the Chinese Eucalyptus Research Centre (CERC)-FABI Tree Protection Programme (leader: Prof. ShaiFei Chen), the DST-NRF Centre of Excellence in Tree Health Biotechnology (leader: Prof. Emma Steenkamp), the DST-NRF SARCHI Chair in Fungal Genomics (leader: Prof. Brenda Wingfield), the Cereal Foliar Pathogens Programme (leader: Dr Bridget Crampton), the Diversity and Evolution of Rhizobia Associated with Native Woody Legumes (leader: Prof. Emma Steenkamp), the Eucalyptus and Pine Pathogen Interactions Programme (leader: Prof. Sanushka Naidoo), the Macadamia Protection Programme (leader: Dr Gerda Fourie), the Molecular Plant-Pathogen Interactions Programme (leader: Prof. Dave Berger), the Molecular Plant Physiology Programme (leader: Dr Juan Vorster), the Potato Soft Rot Research Programme (leader: Prof. Lucy Moleleki), the Phytobacteriology Programme (leader: Prof. Teresa Coutinho) and the Seed Science and Pathology programme (leader: Prof. Terry Aveling).



The tree health team at FABI was awarded one of the first six South African Government Centres of Excellence in 2004. This picture with Minister of Science and Technology Hon. Mosibudi Mangena (centre) includes many people that influenced the growth of FABI such as Prof. Cheryl de la Rey (Vice-Chancellor and Principal of UP) and Prof. Robin Crewe (past Senior Vice-Principal of UP) and Prof. Khotso Mokhele (past President of the National Research Foundation).

STAKEHOLDER ENGAGEMENT

Deeply entrenched stakeholder engagement has been a crucial element of the growth and successes of FABI.

Deeply entrenched stakeholder engagement has been a crucial element of the growth and successes of FABI. In this regard, it is important to reflect on the nature of FABI's stakeholders. In my view, this is a very broad community including the University of Pretoria where we are based, our research collaborators/partners nationally and internationally, our Industry partners, Government departments, our students and the public. Engaging effectively with this very diverse community can be challenging, but the FABI Team has demonstrated great success in achieving this goal.

Postgraduate students, both nationally and internationally, are attracted to successful research programmes and the reputation of the research leaders that lead them. FABI includes a team of approximately 160 M.Sc. students, Ph.D. students and postdoctoral Fellows. These students come from many countries of the world with approximately 30 mother-tongue languages spoken in the Institute. FABI students represent the driving force (the engine room) of the Institute and they participate deeply in deciding upon our operational structures. I believe that FABI is unusual in promoting a free-thinking environment with a strong component of hearing the views of the team members and incorporating good ideas into our structures. As I have noted previously, the FABITEAM email listserver has played a role in encouraging open sharing of ideas. Our student "stakeholders" represent a highly diverse cultural community that have decided upon and defined some of the most successful FABI projects.

Our student "stakeholders" represent a highly diverse cultural community that have decided upon and defined some of the most successful FABI projects. These students come from many countries of the world with approximately 30 mother-tongue languages spoken in the Institute.

It is obvious that research outputs cannot be achieved without adequate funding. In a country such as South Africa where funding from national agencies is relatively limited, successful research teams typically have strong support from Industry or other stakeholders that require research support. Industry partners have been hugely



The FABI Team has benefitted from the guidance of many intellectuals and science leaders. Prof. Jonathan Jansen, President of the Academy of Sciences in South Africa, in this photograph, is one of those academics that has provided such leadership.

important in supporting most research programmes in FABI. It is important that we acknowledge their support. My experience in drawing research support for FABI has been that a "leverage" model works best for University-based research. This requires a very delicate "balance" and a clear understanding of the "value proposition" of the various stakeholders. For a University, the key goal is to provide outstanding education and to drive reputational value through high quality research outputs such as publications. In contrast, while industry might enjoy the notion that they are supporting education (the smiling faces of enthusiastic young scientists are always attractive), their aim is clearly to drive shareholder value and to maximise profits. FABI researchers have shown considerable success in promoting an understanding amongst key stakeholders of how such partnerships can work and how they can serve diverse and different goals.



The invasion of South African pine forests by the Sirex Woodwasp (*Sirex noctilio*) provided one of many examples where University-Industry collaboration can provide solutions to threatening pest problems.



Establishment of the FABI Biological Control Centre has made it possible to provide the Forestry Industry with world-class research to manage invasive insect pests.

The oldest research programme in FABI is the Tree Protection Co-operative Programme (TPCP). This programme beautifully illustrates the power of a leverage model for research funding where a University partners with Industry, Government and other bodies to catalyse research outputs.

The oldest research programme in FABI is the Tree Protection Co-operative Programme (TPCP). And this programme beautifully illustrates the power of a leverage model for research funding. When the TPCP was first established, it was clear that funding would come collectively from the University and from the Industry partners (members). The University provided

most of the infrastructure and academic staff salaries. The Industry funding mainly covered running costs. Bursaries for students came from a variety of sources, but mainly from the University and the National Research Foundation. As the programme grew and demonstrated value to the University and the Industry stakeholders, funding became available from various other sources. These included international partners, various new national and international research funding structures and others. Currently the funding structure includes many different partners, but the important catalyst is University support. It is crucial to recognise the University's role in leveraging the other sources of support. There is a delicate balance here where reduced University funding will surely result in reduced funding from other stakeholders. I believe that where the University desires to grow research funding, it must be prepared to invest. FABI successes have taught me that wise investments in research typically show impressive returns. The choice of areas

in which to invest should never be made on promises of outputs, but on demonstrated achievements. In my experience, the idiom “If wishes were horses, beggars would ride” holds true. Likewise “talk is cheap but money buys the whiskey”.

The choice of areas in which to invest should never be made on promises of outputs but on demonstrated achievements. There are many examples of this in FABI. Research investment by Universities is essential. Deciding where to make these investments is as important as the investments themselves.



The Tree Protection Co-operative Programme (TPCP), established in 1989, provided the catalyst research team on which FABI was built. Picture taken on the occasion of the 21st anniversary of the TPCP including (L-R) Mike Shaw (Sappi), Neville Dennison (Mondi) and John Tew (H.L.&H) who were the three founder Board Members representing forestry companies.



Providing research support to industry stakeholders has underpinned the success of FABI programmes. In this photo, FABI students are inoculating pine seedlings with an important pathogen in order to select resistant planting stock for the Forestry Industry.

CONCLUDING THOUGHTS

I realise that this narrative fails to capture many details of how FABI was established or many of the initiatives and ideas that have underpinned the growth of the Institute. I often remark that FABI is filled with interesting stories that underpin the passion and commitment of the large number of individuals that have been involved in building a remarkable Institute. An Institute that has achieved a very obvious national and international footprint as well as recognition for research and educational excellence. The fact that this has occurred in a relatively short period of time is in itself remarkable. This achievement is thus a culmination of the efforts of many people and not only those who work in FABI but also in various structures of our home University and in the institutions of our stakeholders nationally and internationally.

Team effort is unquestionably a key issue that has underpinned the success of FABI.

Team effort is unquestionably a key issue that has underpinned the success of FABI. The importance of teams and team building in the research environment is an issue of particular interest to me. I recall that in the early days of FABI, at one of my annual January inaugural lectures, that I made reference to that commonly used statement “there is no I in the word TEAM”. This I believe is a somewhat confused idea because it might suggest that power of individual achievement is less important than that of the group. This cannot be further from the truth! I believe that in research, individual achievement, individual excellence and individual innovation is crucially important. The key to winning must be to foster, promote and recognise individual achievement while connecting individual strengths in a collective base of excellence. Many of the larger groups in FABI have shown this to be possible. Individuals in these teams have achieved substantial recognition exemplified by important awards, impressive National Research Foundation ratings and other commendations. There is little

While there might be no “I” in TEAM, there are two “I”s in WINNING. They represent the power of individual accomplishment. It is ironic that funding organisations commonly require evidence of team work but the accomplishments of individuals working in large teams are often overlooked. This is a problem that needs to be seriously interrogated.



FABI academic staff members have been actively encouraged to take sabbatical leave. This picture of Prof. Bernard Slippers, Director of FABI 2018 onwards, with his wife Jana and their daughters, Yvonne and Mia, illustrates some of the interesting challenges provided by these research opportunities.

question that excellence in research, including in the biological sciences where FABI operates, is increasingly achieved by large teams of scientists. While the teams achieve excellence, it is imperative that the individuals in these teams are also appropriately recognised. Ironically, some funding organisations promote (even require) intra- as well as inter-institutional team work, yet penalise academics when they are evaluated individually. While there might be no “I” in TEAM, there are two “I”s in WINNING. They represent the power of individual accomplishment.

FABI was an experiment from the very beginning. The Institute was established without a “blueprint”. The *modus operandi* for the Institute emerged organically and this has been one of the keys to its success.

Success in research is typically achieved over long periods of time. And this is true for many of FABI's deeper accomplishments. A good example emerges from the University of Pretoria being recognised in 2017 global analyses as being one of the top two institutions for the study of fungi (Mycology). Most of this achievement arises from work that has been done in FABI over the past 20 years. There is little question in my mind that support from the Department of Science and Technology for the DST-NRF Centre of Excellence in Tree Health Biotechnology (CTHB) contributed very substantially to this achievement. The bottom line is that this achievement has emerged over a long period



Ratings by the National Research Foundation (NRF) are important metrics by which to monitor scientific achievement and FABI academics have a proud record of impressive ratings from the NRF and continuously seek improvement in this important metric of scientific achievement. In 2014, Proff. Mike and Brenda Wingfield were proud to receive NRF "A" ratings at the same awards ceremony.

with a team of Mycologists in FABI working in close collaboration, not only amongst themselves but also with very substantial global reach.

I have often times made the point that I view FABI as an experiment. The Institute was established without a "blueprint". The *modus operandi* for the Institute emerged organically. And it has continued to change over time. At the ten-year mark, FABI's structure and focus had changed dramatically from the original broad plan. As we mark our 20th anniversary, it is fair to say that many aspects of FABI are rather different to those of ten years ago. I often hear reference to the so-called "FABI Model" and I contest the fact that there is any one clear model to establish FABI-like successes in other disciplines. I rather believe that freedom to operate outside the normal constraints of, for example, a University Department has allowed FABI to experiment with new ideas and projects. Some have failed and have been abandoned; others have been hugely successful and have been promoted and even absorbed into the structures of the University, as well as other institutions.

It is a simple business principle that wise investment provides substantial returns. I believe that Universities and other research bodies can make focused investments in "winners" while still attending effectively to other key performance indicators.

So what might a University do to promote research excellence such as that which has emerged from the establishment of FABI at the University of Pretoria? This is a question that I have been asked many times and there is clearly no one simple answer. What I am sure about is that success is driven by "champions of causes". And FABI has benefitted from some amazing "champions" - champion academics, champion students and champion stakeholders. But champions need support. Excellence grows excellence, successes grow new successes. It is naïve to believe that once

success has been achieved, this will be entirely self-sustaining. Universities need to identify the obvious “achievers” and to invest in them with research support. If these choices are wisely made, they will surely demonstrate substantial returns on investment. My advice here based on FABI experiences is that young “rising stars” need to be identified and they need to be provided with meaningful support. The original South African National Research Foundation (NRF) model of funding the “winners” was hugely successful and it transformed research achievement in South Africa. It is a model that might be considered elitist (this was a

source of criticism of the NRF funding model) but it is one that works. It is a simple business principle that wise investment provides substantial returns. I believe that it can be applied with wisdom while still achieving other important goals that Universities and funding bodies need to achieve.

And what of the future? FABI has an incredible foundation and I have no doubt that the Institute is set on an upward trajectory. Many of the lessons learned in growing FABI on its road to research excellence will surely underpin important future decisions. FABI has an outstanding MANCOM. A team of academics committed to promoting top quality postgraduate education and increasingly lifting the research “bar”. Students come from many different parts of the world to be part of this amazing team and I have no doubt that this will continue to be true in the future. The biological sciences are transforming our world with new technologies making it possible to improve the lives of people. Fibre and food security will be increasingly important in the future and FABI will surely contribute to achieving this important goal!

FABI has an incredible foundation and I have no doubt that the Institute is set on an upward trajectory. Many of the lessons learned in growing FABI on its road to research excellence will surely underpin important future decisions.



