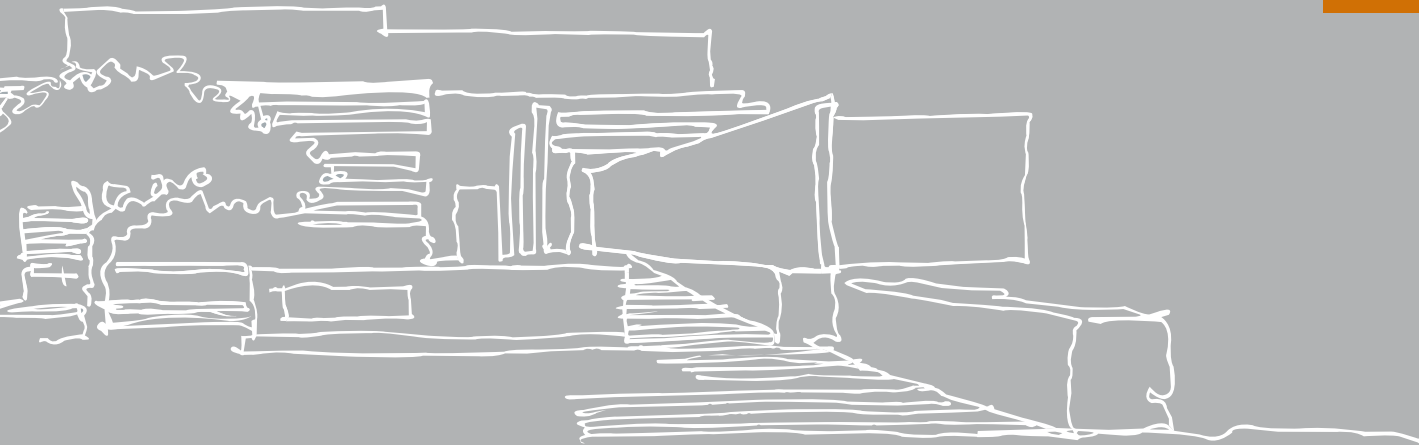


ANNUAL REPORT
2012

A CREATIVE SPACE FOR THE MIND



stias

STELLENBOSCH INSTITUTE FOR ADVANCED STUDY
STELLENBOSSE INSTITUUT VIR GEVORDERDE NAVORSING



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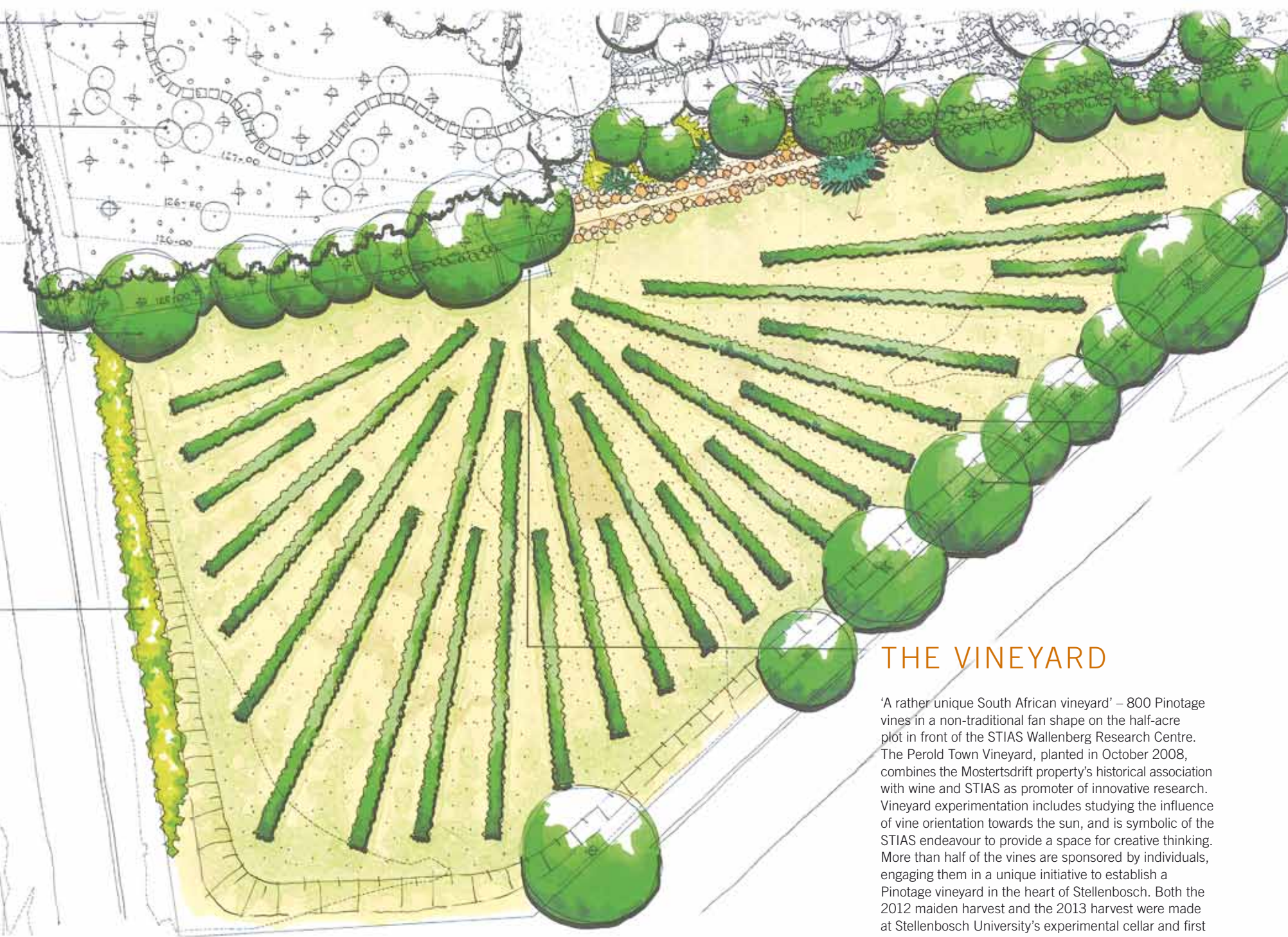
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A CREATIVE SPACE FOR THE MIND



THE VINEYARD

'A rather unique South African vineyard' – 800 Pinotage vines in a non-traditional fan shape on the half-acre plot in front of the STIAS Wallenberg Research Centre. The Perold Town Vineyard, planted in October 2008, combines the Mostertsdraif property's historical association with wine and STIAS as promoter of innovative research. Vineyard experimentation includes studying the influence of vine orientation towards the sun, and is symbolic of the STIAS endeavour to provide a space for creative thinking. More than half of the vines are sponsored by individuals, engaging them in a unique initiative to establish a Pinotage vineyard in the heart of Stellenbosch. Both the 2012 maiden harvest and the 2013 harvest were made at Stellenbosch University's experimental cellar and first indications are that a quality wine is in the making!



FACILITIES

STIAS is situated on a part of the historic Mostertsdrift, one of the first wine farms in the Stellenbosch area dating back to 1691.

Stellenbosch University bought the property in 1996 and made it available to STIAS in 2001. The old Cape Victorian manor house, wine cellar and outbuildings are situated on 2,6 ha of parkland. The manor house was restored and rebuilt in 2002 to serve as the STIAS headquarters. The library of the manor house is used by researchers and academics for seminars and workshops. In 2003, the outside of the wine cellar was restored, and the inside was redesigned and refitted

as a modern research facility. SACEMA, the South African Centre for Epidemiological Modelling and Analysis, a Centre of Excellence supported by the Department of Science and Technology, is the present occupant of the cellar.

With the opening of the Wallenberg Research Centre in 2007, STIAS acquired one of the most modern facilities specially designed for advanced research. The centre houses up to 20 researchers at a time, with well-equipped seminar facilities and state-of-the-art equipment. It also provides a home to the National Institute for Theoretical Physics (NiThEP). The conference and workshop facilities are associated with quality service, and provide a premier venue for conferences and workshops in the Western Cape.

During 2012 a number of refurbishments were undertaken.





CHAIRMAN'S FOREWORD

STIAS can look back over a successful year: it continued to consolidate and increase the impact of its academic programme and made significant progress with some major challenges identified in 2011.

At the time we endeavoured to:

- Continue entrenching STIAS in the academic fabric of South Africa and gain further acceptance of STIAS as a member of the international community of similar institutes.
- Intensify our African focus and establish longer-term research projects anchored in global challenges as they are faced by our continent.
- Build on our current funding basis to explore new avenues which should ensure the long-term financial stability of STIAS.

In pursuit of these objectives the STIAS Board and Management could once again draw on the generous support and able guidance of a number of our long-term supporters and benefactors:

- The Marianne and Marcus Wallenberg Foundation continued their funding of the fellowship programme and engaged a number of experts to help develop the programme and the annual STIAS-Wallenberg Round Table meeting.
- The Knut and Alice Wallenberg Foundation invited STIAS to submit a funding proposal to 'increase its role as a national facility, and expand its African footprint and interaction with African scholars and scientists, in particular with a younger cohort of researchers'.
- The Bank of Sweden Tercentenary Foundation invited STIAS to submit a funding proposal for its African programme, including support for younger African researchers, and for digital communication and dissemination of research results and activities at STIAS.
- The Donald Gordon Foundation has reaffirmed its long-standing support for STIAS 'to maintain and expand its role as an address for leading global thinkers'.
- Stellenbosch University Council responded to these commitments with a resolution to support STIAS at a level comparable to the expected Knut and Alice Wallenberg grant, assist STIAS in establishing a Trust for fundraising to ensure the long-term financial independence of STIAS, and extend the lease agreement with STIAS for use of the facilities at Mostertsdrift to 99 years.

The financial support (totalling an expected R80 million over five years) provides STIAS with a firm platform for the medium-term sustainability of its programme. Read together with the lease agreement, it also underscores the independence of STIAS which remains a cornerstone of its long-term future. STIAS is now certainly poised for a significant contribution to the African research agenda and we look forward to work with a larger number of local foundations and funders to achieve this.

To the whole STIAS team – Board, Management, Academic Advisory Board, Fellowship and Research Programme Committee, the STIAS employees, and, of course, all the STIAS fellows without whom there would be no STIAS – a sincere word of thanks for making STIAS the relevant and treasured 'creative space for the mind' it set out to be.

Desmond Smith
Chairman of the Board



DIRECTOR'S MESSAGE

STIAS is coming of age: in 2012, 63 fellows and 18 visiting scholars from around the globe participated in the programme for a total of 150 fellowship months.

The STIAS programme continues to reflect an emphasis on projects which draw on an interdisciplinary basis, are considered relevant to the (South) African context, and often address very topical issues of the day – a golden thread which runs through the year's 43 fellows' seminars and eight public lectures.

A number of important milestones were reached in 2012, and many well-publicised achievements underline the quality and vibrancy of the STIAS programme:

- The introduction and further consolidation of the fellowship categories 'Artist-in-residence' and 'Young scholar' has strengthened the scope and status of the STIAS programme.
- South African writer Ingrid Winterbach, a STIAS fellow in 2011, received the prestigious NB Publishers' 2012 award for new novels for *Die Aanspraak van Lewende Wesens*, the bulk of which was written at STIAS; Ivan Vladislavic, like Winterbach, an M-Net Literary Award winner in 2011, spent six months at STIAS in 2012/13, and venerable South African playwright Athol Fugard completed his first ever play in Afrikaans at STIAS; he directed the first performance of *Die Laaste Karretjiegraf* at the Fugard Theatre in Cape Town.
- Athol Fugard and Njabulo Ndebele accepted invitations as permanent visiting fellows of STIAS, joining Nobel laureates Sydney Brenner and Gerard 't Hooft, and Neil Turok and Manuel Castells who have this status.
- Castells was honoured with the international Holberg Prize established in 2003 by the government of Norway to raise an awareness of the value of academic scholarship within the arts, humanities, social sciences, law and theology, either within one of these fields or through interdisciplinary work. It is widely perceived to complement the Nobel prizes which do not cover these fields.
- The Marianne and Marcus Wallenberg Foundation (MMWF) appointed Ms Maud Olofsson, former Deputy Prime Minister of Sweden, to facilitate planning of the annual STIAS-Wallenberg Round Table meeting envisaged as a national platform of interaction between academia, industry and government. Ms Olofsson visited STIAS in February and October to plan the first meeting on broad energy issues in South Africa, including investment and technology choices in the SA power sector, putting the round table programme well on track for March 2013.
- STIAS had the privilege to host the Directors of two Institutes for Advanced Study of considerable international repute: Eliezer Rabinovici of the Israel IAS at the Hebrew

University in Jerusalem visited STIAS towards the end of March to discuss possible ways of interacting with the STIAS group of international Institutes for Advanced Study; earlier in March Patrick Dewilde from the TUM-IAS at the Technical University Munich visited STIAS to explore possible avenues of collaboration and participation in the 2013 STIAS-Wallenberg Round Table meeting.

Some challenges remain, in particular expanding STIAS links with African academics. At the same time the quality and scope of the STIAS programme at all levels – academic, administrative and social – is certainly appreciated. David Freedberg, Pierre Matisse Professor of the History of Art and Director of the Italian Academy for Advanced Studies in America at Columbia University, captured his STIAS experience as follows (often echoed in other exit reports):

"The exceptional qualities of STIAS as a research environment start from the ground up. The building in which it is housed is probably the finest – in terms of the purposes it was designed to serve – of all the Institutes for Advanced Study I have known. It offers extraordinary advantages which many do not have: a beautiful building in magnificent physical and architectural surroundings, all the resources of an old university town, and – above all – a center in a country that is full of challenge and possibility, fundamental to the future of a continent that is developing in directions that still remain to be determined. The challenge, and these very directions, are as likely to be defined at a place like STIAS as anywhere else, and every opportunity should be taken to offer Fellowships to the best scholars of any age, race or gender.

"In all these respects STIAS has become an institute for advanced study that ranks with the finest in the world, and has done so in a remarkably short space of time. It has achieved more than any other in terms of its importance to the academic and intellectual image of the country in which it is located. It both reflects and embodies the distinction of a young country which for many years was kept out of the mainstream of international academic life."

We look forward to build on this in 2013!

Hendrik Geyer
Director of STIAS

2012 AT A GLANCE

The STIAS Young scholars programme kicks off in earnest. Four Young scholars visit STIAS and 63 fellows undertake research here in 2012. Of these, three are Artists-in-residence: Athol Fugard, Aryan Kaganof and Ivan Vladislavic.



JANUARY 2012
Aryan Kaganof,
Artist-in-residence

APRIL 2012

Njabulo Ndebele accepts an invitation to become a permanent visiting fellow of STIAS.



APRIL 2012

Derek Hanekom, Minister of Science and Technology, (here with Hendrik Geyer, Bernard Lategan and Desmond Smith) visits STIAS.



MAY 2012

Manuel Castells, Wallis Annenberg Chair in Communication Technology and Society at the University of Southern California, and permanent visiting fellow of STIAS, is awarded the 2012 Holberg International Memorial Prize for 'outstanding scholarly work in the fields of the arts and humanities, social sciences, law and theology'. The prize, established in 2003 by the government of Norway to raise an awareness of the value of academic scholarship within the arts, humanities, social sciences, law and theology, either within one of these fields or through interdisciplinary work, is widely perceived to complement the Nobel prizes which do not cover these fields.



MARCH 2012

The 2012 Rose Award is presented by Rose Charities International to Dr Andrew Macnab, 'for outstanding humanitarian assistance to those in need'. The citation on Dr Macnab's award reads: 'For unstinting commitment to care for the homeless and disenfranchised youth of Uganda, his love of helping others by passing on his own knowledge, and his continual efforts to contribute what he can where he can to a world of almost endless need.'



Neville Alexander (here with Hendrik Geyer, Bernard Lategan and Breyten Breytenbach) was a keynote speaker at the October 2009 STIAS conference in Berlin on historical memory: Dealing with the Past, Reaching the Future

From left: Johannes van Niekerk,
Joel Stern, Hendrik Geyer



OCTOBER 2012

Joel Stern, Chairman of Stern Stewart & Associates in New York, lectures at STIAS. Stern is widely regarded as a leading authority on how finance policy and strategy should be directed to create and sustain shareholder value in an organisation. He conceptualised the Economic Value Added (EVA) measurement and management system which is internationally accepted as an industry standard and applied across sectors subject to specific interpretation.

OCTOBER 2012

Jan-Hendrik Hofmeyr, member of the STIAS Fellowship and Programme Committee, is awarded a fellowship at the Berlin Institute for Advanced Study. He will be at the Institute from 15 September 2014 to 15 July 2015.



DECEMBER 2012

Rehearsals commence of Athol Fugard's (STIAS Artist-in-residence 2011 and 2012) first-ever play written in Afrikaans. *Die laaste karretjiegraf* is scheduled for performance at the Fugard Theatre until 23 February 2013.

DECEMBER 2012

Athol Fugard becomes a STIAS permanent visiting fellow.



AUGUST 2012

The STIAS community is deeply saddened by the news of Neville Alexander's untimely death. He was an intellectual par excellence, with wisdom and insight gained from the hard realities of life. His integrity and personal sacrifice for a democratic South Africa made him an iconic figure.

SEPTEMBER 2012

The Afrikaans novel, *Die aanspraak van lewende wesens*, by Ingrid Winterbach (STIAS Artist-in-residence 2011 and winner in NB Books competition Die Groot Afrikaanse Romanwedstryd) is published.

OCTOBER 2012

The former Swedish Deputy Prime Minister (2006–2010) and Minister of Enterprise and Energy (2006–2011), Maud Olofsson, visits STIAS to assist in the planning of the first STIAS-Wallenberg Round Table meeting, scheduled to take place in March 2013.



From left: Russel
Botman, Maud
and Rolf Olofsson,
Hendrik Geyer



NOVEMBER 2012

A book comprising a collection of essays on the South African transition to democracy published in Romanian by the founding Director of STIAS, Bernard Lategan, is launched in Bucharest. The book, printed by Curtea Veche Publishers, resulted from an initiative of Basarab Nicolescu, a 2011 fellow.



STIAS FELLOWS AND PROJECTS

During 2012 STIAS consolidated its fellowship programme, achieving a 75% occupancy rate. Sixty-three STIAS fellows and 18 visiting scholars participated in the STIAS programme.

STIAS was sadly deprived of the participation by two prominent African scholars in its programme: Justin Ukpong, former Vice-Chancellor of Veritas University in Abuja, Nigeria, and Dani Wadada Nabudere, former Executive Director, Marcus Garvey Pan-African Institute in Upper Mooni, Uganda, both died unexpectedly shortly before coming to STIAS.

The STIAS research programme covers all disciplines and places emphasis on cross-pollination between different disciplines. STIAS projects are undertaken either individually or in groups, and centre on finding innovative and sustainable solutions to global issues, in particular those affecting South Africa and the African continent. There is no formal application process and STIAS fellows are identified in consultation with a number of stakeholder and advisory structures. Unsolicited proposals will not be considered but STIAS will, however, respond to enquiries and brief letters of intent.





Top row, from left:
David Freedberg, Chabani
Manganyi, Heribert Adam,
Kogila Moodley, Andrew
Macnab, Paulin Hountondji,
Brian Child, Njabulo Ndebele

Wolfgang Huber

Olle Inganäs

Ulf Gerdtham

Eliezer Rabinovici and
Hendrik Geyer

Bottom row, from left:
Arthur Ray, Richard Sikora,
Dianne Newell and Marcello
Barbieri

Gerhard Maré

Thomas Elmqvist

Ivan Vladislavic and
Athol Fugard



SELECTED PROJECT PROFILES

Theunis Roux (University of New South Wales)

The politics of judicial review in South Africa

South Africa's turn to liberal constitutionalism has attracted wide interest from comparative judicial politics scholars. Prior to this project there had been little serious scholarly work done on the politics of constitutional adjudication in South Africa. This project filled that gap by exploring the political constraints under which the South African Constitutional Court operated from 1995-2005 ('the Chaskalson Court'). In particular, it investigated how the Chaskalson Court was able to negotiate those constraints while remaining faithful to law. In so doing, the project drew on a rich tradition of North American political science and legal scholarship and applied this body of knowledge to South Africa for the first time.

The main piece of research emanating from this project will be published by Cambridge University Press in March 2013, under the title: *The Politics of Principle, The First South African Constitutional Court, 1995-2005*. There are further planned publications which include a journal article that develops chapter 2 of the *Politics of Principle* book into a conceptual framework for the comparative application of US judicial decision-making models.

N Chabani Manganyi (University of Pretoria)

Moments of awakening: Apartheid and the making of a psychologist

Moments of Awakening, is the last project of a trilogy of life writing projects initiated in 2005. The completion of the first two projects in the series in 2011, opened up an opportunity for the completion of the last project in the trilogy. Conceived as what is sometimes termed intellectual autobiography, the manuscript covering the story of the life and work of a black clinical psychologist in the dark and sombre days of Apartheid, was completed during 2012 and is currently in the process of being published.

Mario Giampietro (Autonomous University of Barcelona)

Exploring the limits of conventional quantitative analyses in the study of complex systems

Research focused on an exploration of the limits of conventional quantitative analyses of complex systems in the context of science for governance (quality assurance in the production and consumption of quantitative analysis for use in decision-making processes), and the development of alternative, post-Newtonian quantitative approaches based on an application of hierarchy theory (multiple scales) and biosemiotics (the special status of autopoietic systems). The research addressed the epistemological challenges of the representation across multiple scales of the water metabolism, energy metabolism, and land use of socio-ecological systems and resulted in the acceptance of several scientific papers which will be published in 2013.

In addition, a considerable amount of time was dedicated to drafting a proposal for funding for the EDULINK II Call which aimed to establish a long-term collaboration between Stellenbosch University (including the Centre for Studies of Complexity) and the Autonomous University of Barcelona with the goal of applying complex systems theory to the field of science for governance, using as a case study Multi-Scale Integrated Assessment of Energy Systems. The resulting proposal entitled *Participatory Integrated Assessment of Energy Systems to Promote Energy Access and Efficiency (PARTICIPIA)*, has been selected for funding (500 000 Euro over three years).

Raymond Suttner (Rhodes University, UNISA)

Chief Albert Luthuli: an interpretation

This is an ongoing study of the legacies and meanings of Chief Luthuli's life in history and today. During 2012, while at STIAS, research was conducted into Luthuli's theology as well as treatment of the Chief as a gendered subject. The research was undertaken initially for a limited short biographical study and also towards a long-term more substantial biography. These works try to unpack the character of Luthuli's Christianity, what Luthuli understands by 'God's will, holy and perfect' and notions like 'divine discontent'. It also examines the relationship between rationality, passion and sacrifice in Luthuli's life, comparing this with that of Mahatma Gandhi, amongst others. The range of identities that comprise Luthuli's life and how these interface is scrutinised. Particular attention is given to the principle of non-violence and how it is manifested in Luthuli's life and its relevance today.

Gerhard Maré (University of KwaZulu-Natal)

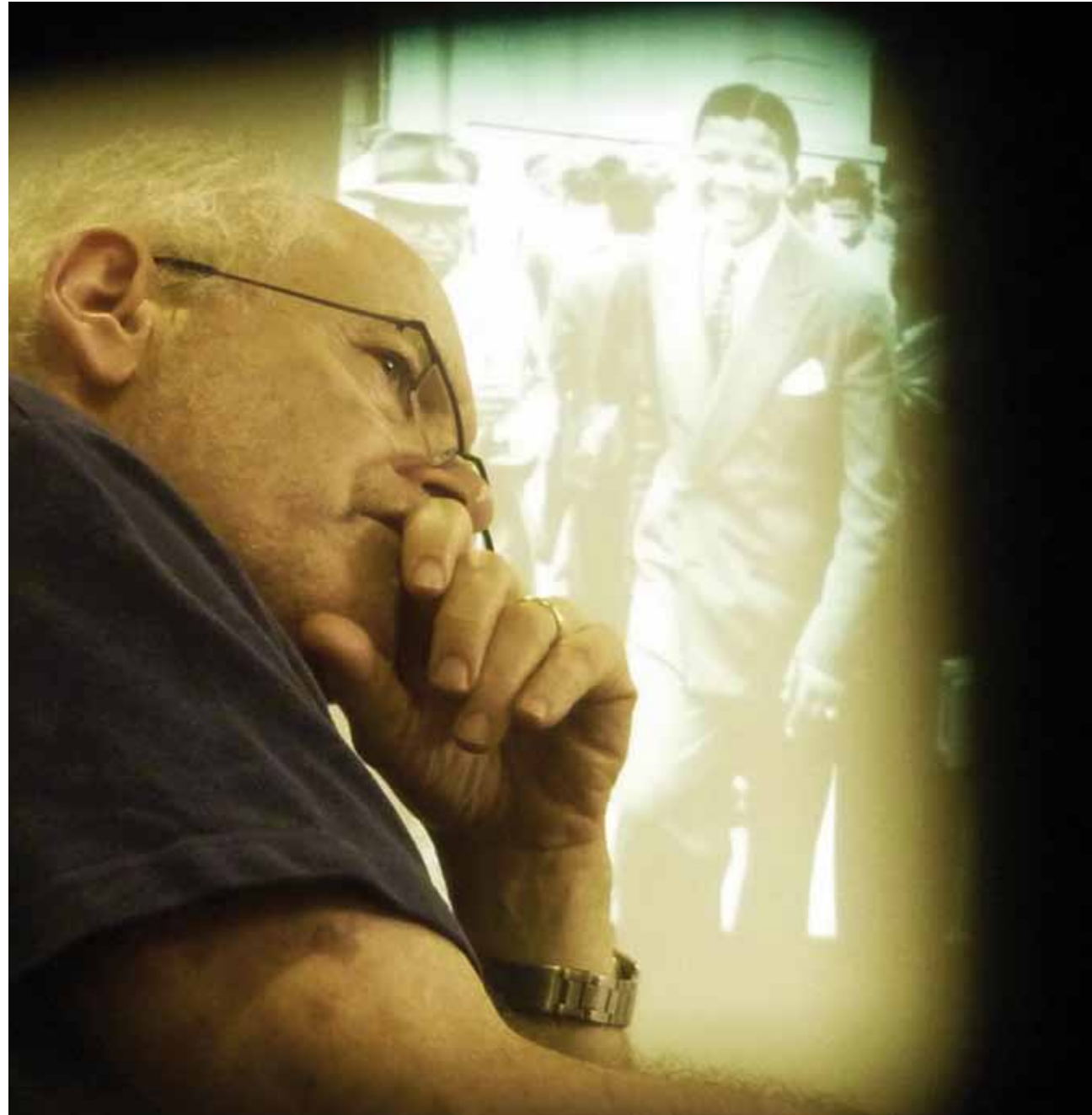
All too real: race thinking and thinking about race in post-1994 South Africa

While the transition to a democratic society in South Africa in 1994 marked fundamental changes on many levels, especially the political, there have been disturbing continuities on other fronts, with consequences that are not often fully acknowledged or debated. Capitalism and its production of inequalities is one such continuity. But it is race as a sense-making notion and system of human classification – the *sine qua non* of race-based redress – that is explored. What are the reasons for such continuities, and what are the intended or unintended consequences of making citizens also into specimens of race categories?

The data had been collected and the arguments developed and tested over years of teaching, research and publications, individually or in collaboration. While at STIAS a book under the working title *All too real: race thinking and thinking about race in South Africa* was under completion. The manuscript will be submitted to a publisher by mid-2013.

Facing page, left: Chief Albert Luthuli, recipient of the Nobel Peace Prize in 1960, at the Nobel Prize Award Ceremony in Oslo, Norway in 1961

Right: Raymond Suttner at a 2012 STIAS seminar



SELECTED PROJECT PROFILES continued

Lev Ginzburg (SUNY at Stony Brook) and John Damuth (University of California, Santa Barbara)

Ecological elimination as a major evolutionary force

Biological populations fluctuate but seem generally stable in the long run. Species evolve slowly, or even seem to be more or less in 'stasis' for much of their existence. Multispecies communities are recognisable over thousands or even millions of years. Both experiment and theory agree that evolution can occur rapidly under the right conditions, and ecological change can occur even more rapidly. Nevertheless, at large scales the structure and character of biotic systems show recurrent characteristics and themes that appear to manifest general criteria of stability, which are largely independent of specifics of taxonomy or habitat.

The underlying hypothesis of this project is that much of the structure and stability seen at the macro level, in both evolution and ecology, is the result of an ongoing process of selective elimination of unstable or marginal configurations. Selective elimination processes are powerful non-adaptive evolutionary forces, and they are not specific to biological systems. The evolution of the planetary system or, for example, of the rings of Saturn has been driven by the elimination of many physical bodies. It is hypothesised that elimination processes in biology are different only in that the forces of evolution continually generate biological systems that approach or transgress eliminative boundaries, and thus elimination is a never-ending process. Much of biological thinking starts with the view that, given enough time, anything can evolve by adaptive natural selection.

The authors think that it may be a fruitful perspective at this stage of existing knowledge to investigate first the forbidden states of ecology and evolution – 'forbidden' not because they cannot occur, but because they cannot last. Work on a new book, conditionally entitled *Systemic Elimination: How non-adaptive selection explains macroscopic laws*, commenced at STIAS. This book will be published, in all likelihood, in 2014.

David Attwell (University of York)

JM Coetzee: a critical biography

The Nobel laureate JM Coetzee is the subject of more books, dissertations and essays than any other writer in all of South Africa's literature. While his roots lie in the Western Cape (with periods of his childhood spent in the Koups region of the Karoo), the influences on his writing are pan-European and American. His novels and nonfictional essays are read and studied throughout the world, and they are frequently regarded as definitive in debates in postcolonial and world literature. His influence is felt in the fields of fiction studies, comparative literature, translation, literary theory, aesthetic philosophy and ethics.

Following on John Kannemeyer's biography (2012), David Attwell will be the first scholar to make extensive use of the 155 boxes of Coetzee's papers recently acquired by the Harry Ransom Humanities Research Center at the University of Texas at Austin. During his fellowship at STIAS (from March to May, 2012), Attwell drafted the early chapters of a new study that traces the genesis of the novels through Coetzee's handwritten drafts and notebooks. Combining genetic criticism and biography, Attwell explores the ways in which Coetzee's fiction is grounded in experience and then transformed through successive revisions. Provisionally entitled *Face-to-face with time: the authorship of JM Coetzee*, the book will be published in English and Dutch in 2014.

Brian Child (University of Florida)

Institutional ecology, sustainable use and community-based natural resource management

The issue of rhino and elephant poaching in Africa has risen to global prominence in the last year. This is a complex problem involving rural land use and poverty, conservation policy, rapidly changing global economic and governance patterns, and international trade. Unfortunately there is a strong tendency to apply simplistic solutions like trade bans to this complex challenge, and these predictably fail.

However, in a continent where wildlife is rapidly disappearing, southern Africa is an outlier – wildlife on private land has more than quadrupled, and these successes are being transferred to communal lands, albeit with uneven success. This is the result of a paradigm shift in wildlife policy where the rights to use and benefit from wildlife are devolved from the state to private landholders and communities.

The purpose of this project was to develop a deeper understanding of the economics and governance of wild resources in southern Africa, particularly in the context of rural poverty. This project has multiple outputs. In the first, Brian and Graham Child have submitted a book entitled *Safari hunting, institutional reform and incentive-led wildlife recovery in southern Africa* for publication. The second output was to further the theory and practice of community conservation, and especially issues of governance and land use economics. Articles on wildlife economics, community governance, and the application of the sustainable use approach to rhino conservation were published, and progress was made on a book *Foundations of community based natural resources management* and an accompanying practical manual entitled *Micro-governance in CBNRM in Southern Africa*.

Facing page: Voëlfontein, Coetzee family farm and homestead in the Koups district near Leeu-Gamka, Karoo



“While at STIAS ... I have also written a complete draft chapter entitled Karoo, which is about Coetzee’s relationship to the Karoo as this is expressed in a little-known short story, *Nietverloren*, the memoir, *Boyhood*, and the novels *In the Heart of the Country* and *Life and Times of Michael K*.”

David Atwell
University of York

SELECTED PROJECT PROFILES continued

**Mark Colyvan (University of Sydney),
John Damuth (University of California,
Santa Barbara) and
Lev Ginzburg (SUNY at Stony Brook)**

Ecological laws – analogies and allometries

The question of whether there are laws in ecology is important for a number of reasons. If, as some have suggested, there are no ecological laws, this would seem to distinguish ecology from other branches of science, such as physics. It could also make a difference to the methodology of ecology. If there are no laws to be discovered, ecologists would seem to be in the business of merely supplying a suite of useful models. These models would need to be assessed for their empirical adequacy but not for their ability to capture fundamental truths, or the like. If, on the other hand, ecology does have laws, this prompts further questions about what these laws are and why even the best candidates for ecological laws fall short of what might be expected of laws.

This STIAS project addressed these issues with the aim of clearing up some of the confusion in both the biological and the philosophical literature. Two forthcoming papers offer defences of the view that analogical reasoning is a legitimate form of reasoning in science, and that such reasoning forms the basis for a good case for the various allometries to be seen as legitimate ecological laws. Results from this project will also be incorporated into Mark Colyvan's book in progress, *Thinking About Ecology* (Oxford University Press).

Thomas Elmqvist (Stockholm University)

Urbanisation, biodiversity and ecosystem services – a global assessment

The project at STIAS involved the final coordination of the first global assessment of how urbanisation is affecting biodiversity and ecosystem services. Even though there is growing awareness that cities affect almost every ecosystem on earth, significantly contribute to the loss of biodiversity, and are increasingly vulnerable to environmental change, thus far there has not been any global analysis of the environmental impacts of urbanisation. In response to this, a global assessment was called for in 2010 by the 193 parties of the Conference of the Parties (COP 10) to the Convention on Biological Diversity (CBD).

The assessment *Cities and Biodiversity Outlook* consists of two publications. The first, *Cities and Biodiversity Outlook – Action and Policy*, intended for policy makers, was launched at the COP 11 meeting of the CBD in Hyderabad in October 2012 (www.cbd.int). The second *Urbanization, Biodiversity and Ecosystem Services: Challenges and Opportunities*, is the scientific analysis and assessment underpinning action and policy.

The main conclusion of the assessment could be summarised in:

1. Urban areas are expanding faster than urban populations. Half the increase in urban land across the world over the next 20 years will occur in Asia, with the most extensive change expected to take place in India and China.
2. Urban areas modify their local and regional climate through the urban heat island effect and by altering precipitation patterns, which together will have significant impacts on net primary production, ecosystem health and biodiversity.
3. Urban expansion will globally draw heavily on natural resources, including water, and will often consume prime agricultural land with knock-on effects on biodiversity and ecosystem services elsewhere.
4. Future urban expansion will often occur in areas where the capacity for formal governance is restricted, which will constrain the protection of biodiversity and management of ecosystem services.

The assessment highlights important knowledge gaps, and alongside challenges of understanding and forecasting patterns of land use change and urbanisation, there are also significant gaps in knowledge about biodiversity and ecosystem services, such as the ranges of species of concern and connections between various ecosystem processes across spatial and temporal scales. Furthermore, the interactions between the urban core area, urban hinterlands and the urban-rural gradient and ecosystem processes are still poorly understood. The broad questions integrating natural and social sciences in studying the effects of climate change on urban ecosystems, and the way these changes impact people's well-being, need urgent research attention.

The conclusion is that there are no global panaceas to urban biodiversity and ecosystem management, or to sustainability. Each city has a distinctive cultural heritage, development history, planning tradition and social structure. However, as centres of human innovation, and perhaps the most active frontier of our impact on the planet, cities offer enormous opportunities to reimagine and invent a different kind of future with room for humans and other species to thrive. Cities may well be where we secure a globally sustainable future – one that establishes responsible environmental stewardship at the heart of public interest.

Siamon Gordon (University of Oxford)

Macrophages in human tissues-phenotypic diversity in health and disease

Macrophages represent a heterogeneous family of white blood cells which are widely distributed throughout the body. They play an essential role in homeostasis during development and throughout adult life, but display considerable plasticity in their response to infection, inflammation, cancer and blood vessel occlusive diseases. This is due to their adaptability in recognition via surface receptors, signalling, altered gene expression and ability to produce products for secretion which affect both their local and systemic environment. Experimental studies in mice have revealed a great deal about the properties and functions of macrophages, but knowledge in humans is markedly deficient, except for monocytes, their precursors in blood, which are readily available for study.

This project reviewed what is known about major macrophage populations in human tissues such as liver, lung, gut, spleen, brain, and their alterations within tissues in various diseases. A chapter on macrophages and related white blood cells was completed for a revised textbook, *Wintrobe's Haematology*, due to be published in 2013. This emphasises the human system, with a review of state-of-the-art basic science, and its relevance to clinical practice. In addition, a special issue, for publication in 2013, of an international journal, *Seminars in Immunopathology*, dealing with macrophage heterogeneity and function in different organs of the body, was edited to which an own review article was contributed.

Marcello Barbieri (University of Ferrara),
Joachim de Beule (Young scholar, Vrije
Universiteit Brussel),
Jan-Hendrik Hofmeyr and
Stefan Kühn (Stellenbosch University)

The beginning of Code Biology

The genetic code appeared on Earth at the origin of life, and the codes of culture arrived almost 4 billion years later, at the end of life's history. Today it is widely assumed that these are the only codes that exist in nature, and if this were true, we would have to conclude that codes are *extraordinary exceptions* because they appeared only at the beginning and at the end of evolution. In reality, various other organic codes have been discovered in the last 25 years, but so far they have been isolated cases, known to a few specialists only. Hence the project of bringing them together into a unified field of research. This field is Code Biology, the study of all codes of life, and in particular of the codes that appeared on Earth after the genetic code and before the codes of culture. Its purpose is to bring to light all the organic codes that exist in nature and to explore their theoretical implications, starting from the revolutionary idea that the great events of macroevolution were associated with the appearance of new organic codes.

The research carried out at STIAS in 2012 by fellows Marcello Barbieri and Joachim de Beule, in collaboration with Jan-Hendrik Hofmeyr of Stellenbosch University and his master's student Stefan Kühn, had the goal of turning the project of Code Biology into a reality by creating an international society, a database, a glossary and a website. All these results have been achieved and are now available at www.codebiology.org. As for future developments, a series of international conferences in Code Biology has been organised, and the first of them is scheduled to take place in Paris in May 2014.

“The preservation of
a free and leisured
environment,
interdisciplinary
discussion, formal
and informal, in this
beautiful setting,
should remain the
primary goal of
this Institute.”

Siamon Gordon
University of Oxford



SELECTED PROJECT PROFILES continued

Lucie Laflamme (Karolinska Institute) and Marie Hasselberg (Visiting scholar, Karolinska Institute)

Mobile teleconsultation and acute care of burn injuries in resource-poor settings

Telemedicine in injury emergency care is most valuable in resource-poor settings, e.g. when hospital emergency staff needs expert advice on diagnostics and choice of treatment. The visual nature of burn injuries makes this expert consultation possible based on camera phones; a more recent and far less expensive form of telemedicine called mobile telemedicine (mHealth). Image capture, transmission, and receipt can be done quickly without loss of image resolution from/to any location within range of a mobile phone signal.

A multidisciplinary research project started in June 2012 with the aim of developing, pilot testing and rolling out such an mHealth system in the Western Cape in South Africa. A series of research activities were undertaken to better understand the type of burn injuries sustained in the region, identify potential barriers to the use of the system among hospital staff, determine how the mobile phone application should be conceived, and specify the clinical validity of the overall system. The project is a joint collaboration between researchers from Karolinska Institute (KI) in Stockholm, Department of Public Health Sciences, and Stellenbosch University's Division of Emergency Medicine.

In October 2012, Lucie Laflamme and Marie Hasselberg (KI) came to STIAS from where they could follow the project developments more closely and also conduct major parts of a systematic review of the literature on telemedicine and injury emergency care to better assess the state of knowledge. The systematic review will be submitted for publication early in 2013.

Facing page: Baseline data collection and fieldwork at participating hospitals in the Western Cape prior to piloting the information system to better assess the burden of burn injuries

Eric Freyfogle (University of Illinois)

Private property rights in land and resources: problems and possibilities

South Africa is one of many nations that have reason to reconsider their institutions and patterns of private property rights in land and natural resources, giving thought to the history, benefits, and costs of existing laws and ownership, and considering particularly the ways that change in property law could assist in the achievement of national goals.

This project – part of a larger, on-going effort – considered the ways that private ownership can add to or detract from human flourishing, with flourishing defined broadly to include individual welfare, social relations, community well-being, and ecological sustainability. It also considered the degree of flexibility in private ownership systems by using as a counterpoint the substantial legal change that took place in the property law of the United States during the century beginning with the American Revolution. Both aspects of the project were designed to shed light on possibilities for change in South African law, consistent with the ability of private ownership to continue fulfilling its roles in promoting economic development, stabilising civic society, and enhancing individual freedoms.

Work at STIAS resulted in two substantial legal articles. One article, *Property Law in a Time of Transformation: The Record of the United States*, surveys legal change in the US and offers parallels with legal change that might make sense in South Africa. It is being revised for publication in the *South African Law Journal*. The second article, *Private Ownership and Human Flourishing*, undertakes an all-things-considered look at the various ways that a well-crafted system of ownership can promote widespread flourishing. It is being revised for publication in the *Stellenbosch Law Review*, and will be expanded into a larger, book-length treatment of the subject.

“I’m grateful to everyone at STIAS both for inviting me here and for making my stay so enjoyable and productive. My work was all the more productive, because of the chances I’ve had to interact with other fellows.”

Eric Freyfogle
University of Illinois

SELECTED PROJECT PROFILES continued

Paul Nugent (University of Edinburgh)

Wine, temperance and South African connectivity c.1900 to the present

Although European expertise and markets have been seen as integral to the Cape wine story before the 20th century, South African exceptionalism has tended to reign thereafter. This project sought to restore the 20th century industry to its global historical context. It explores the dynamic interaction between three strands of connectivity that have been mediated by South Africa's complex regulatory system.

The first is the exchange of viticultural and oenological knowledge between the Cape, Europe, Australasia and North America. At several junctures, such as the development of technologies for cool fermentation in the 1950s, South Africa was at the forefront of innovation. The project sought to understand the generation and reception of new knowledge and why innovation sometimes stalled.

The second strand is the relationship between notions of quality that interacted with changes in consumer preferences. Although the internal market for wine was skewed by the racially-exclusive provisions of the 1928 Liquor Act, research uncovered a much more extensive international market for Cape wines before 1960. An investigation into the push to expand the domestic market involved an analysis of market research, advertising and brand development, largely through a close reading of the Distell archive.

The third strand deals with the temperance movement and its effects on the development of a mass market for wine. An analysis was made of the debates about health and social cohesion generated by anti-alcohol campaigners from the turn of the century to the present. More detailed research will be undertaken in the Cape Archives – in particular working through the voluminous files of the Women's Christian Temperance Union which belonged to a truly global movement. The history which Paul Nugent seeks to unravel is one that is highly germane to the current liquor debate in South Africa.

Several chapters of a book manuscript have been written while a book chapter was published in 2012 and a journal article has been accepted for publication.

**Christopher Fuchs (Perimeter Institute for Theoretical Physics),
Marcus Appleby (Perimeter Institute for Theoretical Physics),
Howard Barnum (Los Alamos),
David Mermin (Cornell University),
Rüdiger Schack (University of London) and
Christopher Timpson (Young scholar, University of Oxford)**

Tightening the consistency of Quantum Bayesianism

Great revolutions in physics only happen every 250 years or so, and when they do the world is turned upside down. Most recently, this started to happen with Max Planck's discovery of the quantum in 1900. For though the quantum theory that arose from it by 1925 had become our most accurate and powerful physical theory ever – the theory ultimately responsible for almost all of modern technology – its world turning has never stopped. To this day, the physics community remains in a state of deep confusion over what quantum theory is saying about the nature of reality.

But a few have had heart, and this is what this STIAS project was about – tackling what is considered the central mystery of quantum theory: the ways in which, as Albert Einstein put it, “God plays dice” with the universe.

Quantum Bayesianism, or QBism, is an effort to interpret all the probabilities arising in quantum theory in terms of the Bayesian conception of the notion that probabilities quantify subjective degrees of belief, rather than objective features of nature.

In the words of the project leader: “This way of looking at quantum theory, we believe, greatly relieves many of the foundational conundrums associated with the theory, and also gives a very natural framework for many of the recent developments in quantum information processing and computing. Our discussions, arguments, and collaboration along with the quiet office time provided by the Wallenberg Centre, enabled our group to make significant progress – progress that we could not achieve in our separate locations before. For instance, one in the group, a 15-year gentle skeptic of the whole effort, had an epiphany while at STIAS, and his own consequent influence has had repercussions

around the world. One example: Nobel prizewinner Theodor Haensch in Germany has now taken note of QBism and even been giving his own lectures on the subject. When years from now the founders of QBism look back on the most significant events in the theory's development, our time at STIAS will perhaps be the most key of all”.

Athol Fugard (Artist-in-residence)

Karretjie People of the Karoo

“My first three months in 2012 was to embark on the very daunting challenge of my first ever Afrikaans play. The three months of this year saw the completion of that play and my preparation for the start of rehearsals. I owe everything to STIAS. I will use the special STIAS performance in January 2013 to express my abiding gratitude to you personally and to all of your team, starting with the wonderful Ms Maria Mouton, for their support of this maverick ‘fellow’. And let me say again that the wonderful lunches that Ms Goldi van Heerden laid on for us during which, together with the provocative seminars I attended, my aging mind was stimulated as never before in my 80 years, and that it all added up to me feeling intellectually stimulated in a way I never thought possible.”

*Facing page, top left, from left:
Christopher Timpson, Rüdiger Schack,
Chris Fuchs, Marcus Appleby,
Howard Barnum and David Mermin*

Right: Paul Nugent



“..., it was once more a privilege to meet remarkable visiting fellows from around the world. In particular I loved the collaborative working habits of a group of visiting physicists working on a project they believed would extend knowledge significantly in the area of physics they were working on.”

Njabulo Ndebele, University of Cape Town



SELECTED PROJECT PROFILES continued

Rosalind Morris (Columbia University)

'1973/2012 – A striking resemblance': labour, mines, and the historical politics of strikes in South Africa

Time at STIAS in 2012 permitted work toward the completion of a book manuscript entitled *Unstable Ground*, based in long-term ethnographic research in South Africa's gold-mining communities. During the period of the fellowship, and prompted by the events at Marikana in August, writing while at STIAS focused on the 'after-lives' of gold, including the ways in which the emergent power of labour in the platinum mining sector has led to fissures not only within the labour movement generally, but in the conceptualisation of class as a principle structuring society and political representation, and as an analytic frame for grasping the nature of poverty in the post-apartheid era.

Arguing against a quick identification of Marikana with Soweto via the iconography of state violence (as is common in the mass media), the study attempted to link Marikana to a history of strikes that did and did not assume a generalised form in the period since 1973-74, when the Durban strikes moved from textile and manufacturing to the mining sector. In the process, it has been necessary to account for the different kinds of political speech that are enabled by different media and media forms in different contexts.

Emerging from this endeavour is a new conception of 'the political', in which the necessity of resembling something other than oneself in order to be heard (as when miners are likened to children via the iconography of Soweto, or read as primitives in a dramaturgy mediated by popular cultural iconicities), is matched by a sense that political forces embody a foreignness which may be either mobilised or aggressively disavowed, depending on circumstance.

Aryan Kaganof (Artist-in-residence)

Mobile filmmaking

This project entailed further refining and developing the technological apparatus necessary for the creation of broad quality digital film media from a mobile source taking into cognisance the specific advantages that such a breakthrough would have for millions of previously disadvantaged South African citizens whose access to the 'mainframe' of the digital grid is extremely limited.

South Africa is the country in Africa with the most developed mobile phone penetration and accordingly the potential for mobile phone generated narratives is immense.

Key phrases such as 'local memory', 'indigenous knowledge' and 'tactical media' informed practice.

The most significant results of the stay at STIAS were the following:

1. *STELLENBOSCHED*. This 9-minute short film was selected for the International Competition of the Oberhausen International Short Film Festival. It was the only South African film to be selected. The film was conceived, filmed and edited during the six-month stay at STIAS.
2. Aryan Kaganof received the 2013 Africa Magic Viewer's Choice Award for Best Achievement in Editing for the film *Man On Ground*, which was edited whilst Artist-in-residence at STIAS. The film deals with the hostility towards African foreigners displayed by South Africans in the so-called post-apartheid period and the complete inability of the democratic disposition to find a solution to this Afrophobia (incorrectly called xenophobia by the media).
3. An ongoing project in Smartie Town and Slabtown, two neighbourhoods in Stellenbosch where appalling living conditions contribute to crime, drug addiction and a general quality of life that has no place in a democracy. Recent gains in this project have been the delivery of laptop computers and mobile phones to residents in Smartie Town to enable them to document their living conditions, as well as a campaign to provide residents of the shacks in Slabtown with tarpaulin for their leaking roof tops.

Dianne Newell (University of British Columbia)

Small islands of work at the rough edge of the world: two book projects on Canada's Pacific northwest coast history and ethnology

The first outcome of this linked books project was the completion of a draft of one of the book manuscripts, *A Whiff of Fish: Islands of Work at the Rough Edge of the World*, which is a capstone historical-geographical-intellectual study of the workings and impact of the Pacific northwest salmon cannery coast. The manuscript will be submitted to McGill-Queen's University Press in 2013.

A second book, which was re-envisioned and three chapters drafted while at STIAS, explores the achievements later in life of a central, if understudied, figure in the development of North American ethnology and Canadian scientific thought in the early 20th century, the Canadian Pacific slope archaeologist and documentary filmmaker/photographer, Harlan I Smith.

Details were also finalised on the co-authored literary biography with Victoria Lamont of the Canadian-American science fiction writer, anthologist, critic, and activist, Judith Merril, *Judith Merril: A Critical Study*, and published in June 2012.

*Facing page: STELLENBOSCHED,
a short film by Aryan Kaganof*

A woman and a man are seated on a train bench, looking out a window. The woman, in the foreground, wears a denim jacket and a headband. The man, behind her, wears a dark jacket. A "no smoking" sign is visible on the window. The scene is brightly lit by natural light from the window.

STELLENBOSCHED

a film by

ARYAN KAGANOF

“I must say that the STIAS fellowship and residency was one of the most fruitful of my entire career.”

Aryan Kaganof
Artist-in-residence

SELECTED PROJECT PROFILES continued

Wolfgang Huber (Humboldt University)

Basic questions of ethics

Today ethics have to be formulated for pluralistic societies that encompass a variety of basic convictions. At the same time there is a growing interest in practical challenges for ethical reflection – whether these challenges originate in the progress of life sciences, in the process of economic globalisation or in violent conflicts. It is therefore time to bridge anew the gap between meta-ethics and applied ethics. For this purpose the human life cycle is used as starting point for the selection of ethical issues that are discussed. All questions are debated in the dimensions of personal, professional and institutional ethics. The perspective is an ethics of responsibility that emphasises the overlapping consensus of different worldviews. A first version of the book *Ethik* was finished during the stay at STIAS in 2012. This book will be published in German in 2013, there are already plans for an English translation. The book is understood as a contribution to the STIAS project on Faith and Fabric.

Stephen Clingman (University of Massachusetts)

Double Vision

The project is a work of creative non-fiction, which explored issues of identity, boundaries and vision. These issues, which emerge strongly from the South African experience, have been Clingman's concern for many years as a scholar, literary critic and biographer. In *Double Vision*, he approaches these issues from the perspective of his own life – of his growing up in South Africa and his travels and relocations later in life. In particular, the implications of a birthmark under his right eye, which both set him apart and came to affect his vision – doubling and dividing it in various ways, were explored. Though there was no straightforward symmetry, there were wider resonances for a country where markings create both identities and boundaries, and profoundly affect ways of seeing. The project also has significance for a country developing new visions in and through the markings of its birth. Time at STIAS resulted in the completion of a second draft of the manuscript, which has been submitted to further revisions.

Olle Inganäs (Linköping University)

When solar current is cheap, plentiful and lasts all night through...what then of coming energy systems in Africa?

The current upheaval of conditions for electricity generation across the globe heavily affects areas close to the equator. Wind electricity is now cheaper than electricity from coal power plants in Australia and South Africa, both major carbon producers. Organic photovoltaic systems currently give more than 10% conversion efficiency from sunlight. Further developments could make this form of electricity competitive with fossil-based electricity in sun-rich latitudes.

To make electricity available when the sun is down, is critical for use of the technology. New materials are needed for a scalable electrical storage, matching the eminent scalability of organic photovoltaics. A 2012 publication by Inganäs and Milczarek in *Science*, entitled *Renewable Cathode Materials from Biopolymer/Conjugated Polymer Interpenetrating Networks* revealed how cheap biopolymers from trees can be used for charge storage. Analysing the technological trajectories that plentiful photovoltaics and storage could take in an African setting was the primary task in this project. A first level analysis has indicated that the supply of electricity for household consumption, is reasonable for projected technology performance. A more appropriate size of such small electrical networks, with organic solar cells and wooden batteries, would be that of a collection of households, a local industry with needs for electricity for machinery, or a school, hospital or administration building.

David Freedberg (Columbia University)

Art and neuroscience: from empathy to inhibition

Scholars in the humanities continue to resist the possible applications of the cognitive neurosciences to the understanding of cultural phenomena. No rigorous effort has been made to bring recent developments in the study of the neural substrate of the relationship between emotional and motor responses to the understanding of the visual arts.

Recent work on the phenomenon of embodied simulation, supplements older theories of empathy and felt bodily emulation of what is seen (or even implied) in a visual work of art. The further question of the cortical monitoring of autonomic responses to visual phenomena has begun to receive attention from neuroscientists, but remains neglected by students of visual images. Research in this area was brought to a close at STIAS by considering the role of inhibitory and disinhibitory processes in the brain in the formation of aesthetic judgement. The time at STIAS enabled David Freedberg to complete a long-standing project on the neuroscience of responses to art, as well as helping to lay the groundwork for still newer research into the possibilities of motor rehabilitation through looking.

In the course of his stay at STIAS this work, and political and artistic developments within South Africa, also led him to return to his much earlier interests in violence towards images (iconoclasm, censorship) and produced a number of fruitful publications and interventions.

Reinette Biggs (Young scholar, University of Stockholm)

Regime shifts in social-ecological systems and Initiating the Southern African Programme on Ecosystem Change and Society

Regime shifts are large, persistent changes in the structure and function of complex systems such as intertwined social-ecological systems (SES). Regime shifts in SES often have large impacts on ecosystem services (such as freshwater, food production and climate regulation) with considerable consequences for human livelihoods, health and security. There is evidence that the likelihood of regime shifts is increasing at local to global scales due to extensive anthropogenic pressures on the environment, and that it threatens human prosperity and the potential for long-term development and poverty eradication in developing regions such as Africa.

This project was part of an ongoing project to synthesise and compare different regime shifts that have been documented in SES, including the drivers of these shifts, impacts on ecosystem services and human well-being, and implications for poverty alleviation, in order to better understand how SES may be managed to avoid undesirable regime shifts. The stay at STIAS provided the opportunity to carry out an initial synthesis, with key outputs including a new version of the online Regime Shifts Database (www.regimeshifts.org), and resulted in an academic paper introducing the database, a paper analysing global drivers of regime shifts, and a paper reviewing the underlying principles for enhancing resilience of ecosystem services.

Another important aspect of the visit to STIAS was the initiation of the Southern African Programme on Ecosystem Change and Society (SAPECS), a regional case study linked to the international Programme on Ecosystem Change and Society (PECS) which is coordinated by the Stockholm Resilience Centre in Sweden. Together with three colleagues from Sweden (Garry Peterson, Line Gordon and Maria Tengö) and two from CSIR in South Africa (Belinda Meyers, Luthando Dziba) a scoping workshop with 35 leading SES researchers from South Africa and Sweden was held which developed an initial science plan that has identified three key objectives for SAPECS, namely: 1) to conduct syntheses and comparative analyses that improve understanding of SES and ecosystem services in southern Africa, 2) to mainstream knowledge

into policy and practice, and 3) to grow the community of researchers, students and practitioners engaged in SES research. A one-day colloquium supported by STIAS was also held that gave 25 students the opportunity to present their work and interact with the senior SES researchers. Key outputs to date are a paper introducing SAPECS, a conceptual framework for understanding the different ways in which ecosystem services can contribute to poverty alleviation, and a paper outlining a social-ecological approach to assessing and monitoring ecosystem services.

Arthur Ray (University of British Columbia)

History wars and indigenous rights

Indigenous rights claims remain a central, unresolved human rights issue in Australia, Canada, New Zealand, South Africa and the United States. These countries, which are former British colonies, have intertwined but divergent legal, intellectual, and cultural traditions. In these countries judgments about 'history' are essential for the determination of compensation for past abuses and recognition of existing indigenous rights. This requires the judiciary, or quasi-judicial bodies, to make difficult choices among conflicting interpretations of aboriginal history during the post-European contact era.

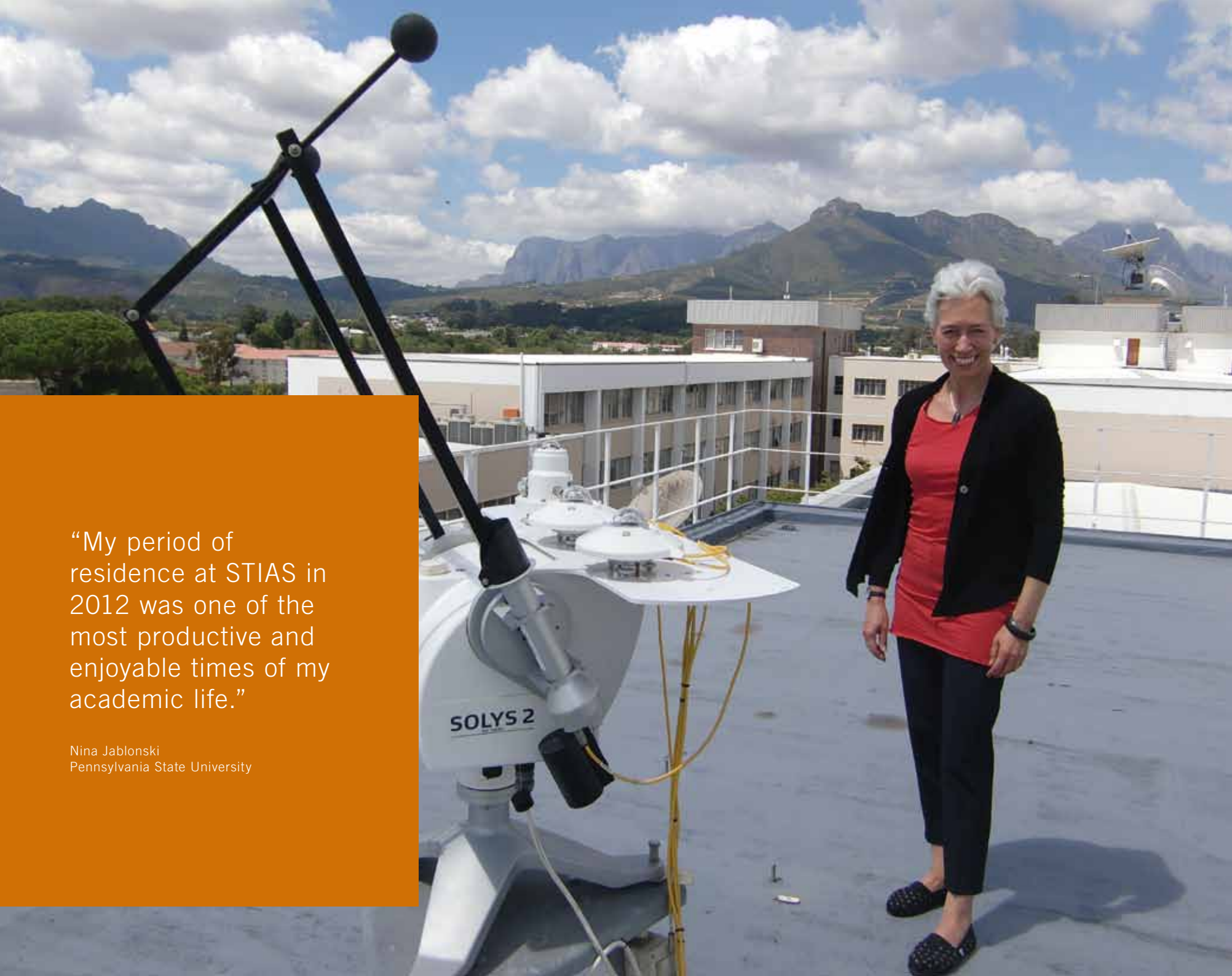
This project addressed three fundamental questions:

1. How have the forums and procedures offered by commissions and tribunals, and the reforms made by the judiciary, enabled these institutions to access history and make judgments about that history in indigenous rights claims?
2. How have judicial decisions, and those of commissions and tribunals, influenced public understandings of national historical narratives and thereby altered the political-legal environment in ways that affect subsequent claims adjudications?
3. What useful lessons for future approaches to aboriginal claims can be drawn from a comparative history of past and current adjudication practices in Australia, Canada, New Zealand and the United States?

Two articles (one for a journal and another a chapter for a monograph) were completed at STIAS and have been submitted for publication. An own monograph with the working title *History and Land Restitution Claims: A Comparative Examination* is nearing completion with submission to the publisher expected in 2013.

“STIAS is indeed a world-class institution – housed in a facility that will inspire many important academic, policy, and cultural-social contributions.”

Ralph Christy,
Cornell University

A woman with short white hair, wearing a red top, black cardigan, and black pants, stands on a rooftop. To her left is a large white telescope labeled 'SOLYS 2' with a black arm extending upwards. The background shows a cityscape and a mountain range under a blue sky with white clouds.

“My period of residence at STIAS in 2012 was one of the most productive and enjoyable times of my academic life.”

Nina Jablonski
Pennsylvania State University

SELECTED PROJECT PROFILES continued

Nina Jablonski
(Pennsylvania State University) and
George Chaplin (Visiting scholar,
Pennsylvania State University)

Human skin pigmentation: further studies of its evolution, biological consequences, and social meaning

The work at STIAS in 2012 involved, primarily, the development of infrastructure for a research project, which will investigate how variations in skin pigmentation and ultraviolet radiation (UVR) intensity affect the production of vitamin D in human skin. The project has two major components: the measurement of UVR, specifically UV-B, and the measurement of human parameters related to vitamin D production. In connection with the first component, a new UV-A/-B monitoring facility associated with the Solar Thermal Energy Research Group of the Department of Mechanical and Mechatronic Engineering at Stellenbosch University was established with funds from a John Simon Guggenheim Memorial Fellowship awarded to Nina Jablonski, and matching funds from the Dean of Research and Innovation at Stellenbosch University.

The second component of the project involved development of research collaborations with members of the medical faculties of Stellenbosch University and the University of Cape Town. It involved the measurement of serum vitamin D levels and skin pigmentation in two cohorts of healthy young adults to determine if skin pigmentation is a risk factor for vitamin D deficiency among moderately and darkly pigmented people in South Africa. This is of great interest from an evolutionary standpoint because the intensity of UV-B and the degree of melanin pigmentation in the skin affect the rate of vitamin D formation in the skin. The question is also relevant to public health because vitamin D deficiencies are common in the Western Cape, and predispose affected individuals to contracting infectious diseases, including tuberculosis.

Megan Vaughan (University of Cambridge)

Psychology and changing subjectivities in southern and eastern Africa

Recent scholarship on the 'postcolonial subject' in Africa and beyond, posits a link between neoliberalism and the evolution of new subjectivities. This project aims to interrogate and complicate this analysis in relation to southern and eastern Africa. In recent years there has been a marked adoption of psychological counselling techniques and languages in the region. These 'techniques of the self' have some specific trajectories which complicate the usual analysis of the relationship between modernity and new forms of subjectivity, as described by Nick Rose and others. This project attempts to historicise this recent development by tracing in some detail the genealogies of the psychological sciences and practices in eastern and southern Africa. The research is based on work in Kenya and Malawi. Time at STIAS was utilised for an immersion into the history of the psychological sciences in South Africa, with the aim of integrating this case, with its very specific history, into the study.

Across both regions the spread of new techniques of the self has been associated with the HIV/Aids epidemic and responses to it. In Kenya and Uganda it is also linked to the 'trauma' of political conflict and to what has sometimes been described as an international trauma 'industry'. But a third strand of this history links psychology with the influence of new religious movements. In this project emphasis is placed on the role of local actors in appropriating and domesticating psychological counselling theories and techniques using detailed case studies. African counsellors and psychologists place their own interpretations on western-derived psychological theories and implement them in ways that they describe as 'culturally' appropriate. The psychological sciences have often been described as having taken the place of religious practice in the inner lives of Europeans and North Americans. In contemporary Africa, psychology and spirituality appear to be evolving forms of practice that are not mutually exclusive.

Ulf Gerdtham (Lund University)

Inequality in health: measurement, explanation and policy evaluation

The main purpose of this project was to identify and quantify the major causal mechanisms that drive the changes in socioeconomic health inequalities in Sweden. Specific aims were:

1. To model the causal relationships between health, income, employment, lifestyle and diseases;
2. To utilise new decomposition techniques for mobility indices akin to those available in the literature for socioeconomic health inequality indices;
3. To examine how changes in the distribution of risk factors and major diseases have affected the socioeconomic inequalities in life expectancy;
4. To use the models developed in 1) and the results from literature surveys on the effects of health interventions and policies, relating to, for example smoking cessation and obesity prevention in different socioeconomic groups to simulate the effects of policies on socioeconomic health inequalities.

During 2012, and overlapping his fellowship period, Ulf Gerdtham worked on a number of issues in measuring inequality in health, health care and health-related behaviour, and causality issues, which are fundamental to the project. A number of other articles/manuscripts related to health and health economics have been produced during the year. It is expected that this research will provide a scientific basis for decision-makers to better analyse and evaluate the extent to which interventions and policies widen or reduce social inequality in health. It is also expected that this research will not only be important for Sweden, but also in particular for low or middle income countries. It is the intention of the project to collaborate with researchers in China, India and South Africa.

Facing page: Nina Jablonski next to the new UVA/B monitoring sensor mounted on the Kipp and Zonnen SunTracker solar monitoring station on the roof of the Solar Thermal Energy Research Group (STERG) facility, Department of Mechanical and Mechatronic Engineering, Stellenbosch University

STIAS FELLOWS AND PROJECTS LIST

STIAS fellows

Abungu, George

Okello Abungu Heritage Consultants
Urban minds
(project leader: Paul Sinclair, Uppsala University)

Adam, Heribert

Simon Fraser University
Xenophobia, migrancy and multiculturalism
(with Kogila Moodley)

Ahlsén, Elisabeth

University of Göteborg
Health care interactions in multicultural societies
(with Jens Allwood and Claire Penn)

Allwood, Jens

University of Göteborg
Health care interactions in multicultural societies
(with Elisabeth Ahlsén and Claire Penn)

Appleby, Marcus

Perimeter Institute for Theoretical Physics
Tightening the consistency of Quantum Bayesianism
(project leader: Christopher Fuchs, Perimeter Institute for Theoretical Physics)

Attwell, David

University of York
JM Coetzee: a critical biography

Barbieri, Marcello

University of Ferrara
The beginning of Code Biology
(project leader)

Barnum, Howard

Los Alamos
Tightening the consistency of Quantum Bayesianism
(project leader: Christopher Fuchs, Perimeter Institute for Theoretical Physics)

Biggs, Reinette

(Young scholar)
Stockholm University
Regime shifts in social-ecological systems and Initiating the Southern African Programme on Ecosystem Change and Society

Brümmer, Vincent

University of Utrecht
Stellenbosch and Afrikaner theological, political and language controversies ca 1860–1948: a critical reconstruction of the arguments put forward by the various parties

Chapman, Michael

University of KwaZulu-Natal
Uses of literature: South African case studies

Child, Brian

University of Florida
Institutional ecology, sustainable use and community-based natural resource management

Christy, Ralph

Cornell University
Institutional innovations and investments: creating an enabling environment for emerging agro-enterprises in Africa

Clingman, Stephen

University of Massachusetts, Amherst
Double Vision (on identity, boundaries, and vision)

Colyvan, Mark

University of Sydney
Biological laws – analogies and allometries
(with John Damuth and Lev Ginzburg)

Damuth, John

University of California
Ecological elimination as a major evolutionary force
(with Lev Ginzburg)

De Beule, Joachim

(Young scholar)
Vrije Universiteit Brussel
The beginning of Code Biology
(project leader: Marcello Barbieri, University of Ferrara)

De Chantal Radimilahy, Marie

University of Antananarivo
Urban minds
(project leader: Paul Sinclair, Uppsala University)

D'Haese, Luc

University of Antwerpen
Socio-economic aspects of food security in a rural environment

Elmqvist, Thomas

Resilience Centre, Stockholm
Global urbanisation, biodiversity and ecosystem services – challenges and opportunities

Freedberg, David

Columbia University
The role of inhibitory and disinhibitory processes in the brain in the formation of aesthetic judgement

Freyfogle, Eric

University of Illinois
Private lands conservation in law and culture

Fuchs, Christopher

Perimeter Institute for Theoretical Physics
Tightening the consistency of Quantum Bayesianism
(project leader)

Fugard, Athol

Artist-in-residence
Karretjie People of the Karoo (a play in Afrikaans based on 'the itinerant group of sheep shearers in the Karoo who have now virtually disappeared')

Gerdtham, Ulf

Lund University
Measurement and explanation of changes in socio-economic health inequalities, evaluation of interventions, and policies to tackle them

Giampietro, Mario

Universitat Autònoma de Barcelona
Exploring the limits of conventional quantitative analyses in the study of complex systems

Ginzburg, Lev

SUNY at Stony Brook
Ecological elimination as a major evolutionary force
(with John Damuth)

Gordon, Siamon

University of Oxford
Macrophages in human tissues – phenotypic diversity in health and disease

Hountondji, Paulin J

African Centre for Advanced Studies, Porto Novo
Beyond extraversion – ways towards intellectual self-reliance

Huber, Wolfgang

Humboldt University
Basic questions of ethics

Inganäs, Olle

Linköping University
When solar current is cheap, plentiful and lasts all night through ... what then of coming energy systems in Africa? (green battery technology)

Jablonski, Nina

Pennsylvania State University
Human skin pigmentation: further studies of its evolution, biological consequences, and social meaning

James, Deborah

London School of Economics
Money from nothing: popular economies and indebtedness in South Africa

Kaganof, Aryan

Artist-in-residence
Mobile filmmaking

Macnab, Andrew

University of British Columbia
'Many Voices One Song' – health-promoting schools: evidence, strategies, challenges and prospects

Magnus, Ulrich

University of Hamburg
Law making for global crisis situations
(project leader: Jaap Spier, Hoge Raad der Nederlanden and Maastricht University)

Manganyi, Chabani

University of Pretoria
Moments of awakening: Apartheid and the making of a psychologist

Maré, Gerhard

University of KwaZulu-Natal
Race thinking and thinking about race: reflections from South Africa

Mermin, David

Cornell University
Tightening the consistency of Quantum Bayesianism
 (project leader: Christopher Fuchs, Perimeter Institute for Theoretical Physics)

Moodley, Kogila

University of British Columbia
Xenophobia, migrancy and multiculturalism
 (with Heribert Adam)

Morris, Rosalind

Columbia University
'1973/2012 – A striking resemblance': labour, mines, and the historical politics of strikes in South Africa

Ndebele, Njabulo

University of Cape Town
The boxing economy of the Eastern Cape

Newell, Dianne

University of British Columbia
Islands of work at the rough edge of the world and Archiving culture and nature: Harlan I Smith's ethnographic record of the Pacific slope

Nugent, Paul

University of Edinburgh
Wine, Temperance and South African connectivity c.1900 to the present

Penn, Claire

University of the Witwatersrand
Health care interactions in multicultural societies
 (with Jens Allwood and Elisabeth Ahlsén)

Rakotoarisoa, Jean-Aimé

University of Antananarivo
Urban minds
 (project leader: Paul Sinclair, Uppsala University)

Ray, Arthur

University of British Columbia
Indigenous rights claims

Roux, Theunis

University of New South Wales
The politics of judicial review in South Africa

Schack, Rüdiger

University of London
Tightening the consistency of Quantum Bayesianism
 (project leader: Christopher Fuchs, Perimeter Institute for Theoretical Physics)

Scholz, Roland

ETH, Zürich
Human-environment system based transdisciplinary processes

Sikora, Richard

INRES, Bonn
Food security in sub-Saharan Africa from the production, human and environmental safety standpoints

Sinclair, Paul

Uppsala University
Urban minds
 (project leader)

Spier, Jaap

Hoge Raad der Nederlanden and Maastricht University
Law making for global crisis situations
 (project leader)

Suttner, Raymond

Rhodes University and UNISA
Interpreting the life of Chief Albert Luthuli

Swart, Mia

(Young scholar)
 British Institute for International and Comparative Law
Apartheid reparations

Timpson, Christopher

(Young scholar)
 University of Oxford
Tightening the consistency of Quantum Bayesianism
 (project leader: Christopher Fuchs, Perimeter Institute for Theoretical Physics)

Udvardi, Michael

Samuel Roberts Noble Foundation
Assessing current use and future potential of legumes and symbiotic nitrogen fixation in Africa

Van Regenmortel, Marc

French National Centre for Scientific Research
The scientific method in biology and biomedicine

Van Wyk, Rias

Technoscan Centre
The language of technology

Vaughan, Megan

University of Cambridge
Psychology, neoliberalism and changing subjectivities in southern and eastern Africa

Vladislavic, Ivan

Artist-in-residence
The man in the street

Xue, Julia

Ocean University of China
Law making for global crisis situations
 (project leader: Jaap Spier, Hoge Raad der Nederlanden and Maastricht University)

Visiting scholars**Chaplin, George**

Pennsylvania State University
Human skin pigmentation: further studies of its evolution, biological consequences, and social meaning

De Gruchy, John

University of Cape Town
Mystery

Gordon, Lyndall

St Hilda's College, Oxford
Biographer

Grimshaw, Anna

Emory University
Ethnographic filmmaking: a different kind of anthropology

Hasselberg, Marie

Karolinska Institute
Mobile telephony and injury care

Hering, Janet

Swiss Federal Institute of Aquatic Science & Technology
Learning from the South African experience in water management for human welfare and ecosystem function

Krog, Antjie

University of the Western Cape
The Impossibility of Integrity: a cycle of poems amidst times of greed, corruption, violence and crude stupidities (working title for a set of Afrikaans poems)

Mazer, Susan

University of California
Plant phenology

Menon, Dilip

University of Witwatersrand
Gandhi and the discourse of civilisation and degeneration in the early 20th century

Mermin, Dorothy

Cornell University
South African fiction and poetry in English

Pikirayi, Innocent

University of Pretoria
Urban minds

Dewilde, Patrick

Director: TUM Institute for Advanced Study
 Technical University of Munich

Rabinovici, Eliezer

Director: Israel Institute for Advanced Studies

Stellenbosch University project leaders and project members

Hofmeyr, Jan-Hendrik

Faculty of Science
The beginning of Code Biology

Kemp, Gerhard

Faculty of Law
Law making for global crisis situations

Lubbe, Gerhard

Faculty of Law
Law making for global crisis situations

Rüppel, Oliver

Faculty of Law
Law making for global crisis situations

Smit, Dirkie

Faculty of Theology
Faith and fabric

STIAS LECTURE SERIES

Eight STIAS public lectures were presented on the campus of Stellenbosch University in 2012. Lectures were attended by campus communities of universities in the Western Cape and the broader public – affording them the opportunity to become acquainted with the STIAS research programme.

21 February

Fiona Forde, author
An inconvenient youth: Julius Malema and the 'new' ANC

20 March

David Mermin, Cornell University
Spooky actions at a distance? The vision of Einstein, the caution of Bohr

13 June

Curtis Marean, Arizona State University
Survivors on the edge of land and sea: modern human origins and how coastal life helped make us unique

31 July

Wentzel van Huyssteen, Princeton University
The evolution of religion: interdisciplinary perspectives on the emergence of self

28 August

Mario Giampietro, Universitat Autònoma de Barcelona
Taking the red pill: the failure of reductionism in sustainability analysis

25 September

Nina Jablonski, Pennsylvania State University
Skin colour: its evolution and meaning in the modern world

23 October

Marcello Barbieri, University of Ferrara
Code Biology – a new science of life

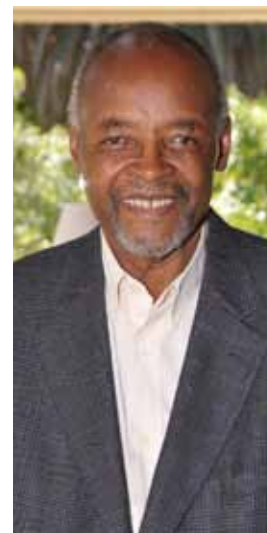
29 October

Joel Stern, University of Columbia and chairman of Stern Stewart & Co, New York
Solving the corporate governance dilemma – measurements, incentives and attention to stakeholder concerns



STIAS SEMINARS

Forty-three seminars were presented in the 2012 fellows' seminar series. Fellows and visiting scholars also presented (and/or participated in) numerous colloquia and lectures at academic departments of universities of the Western Cape. Researchers from SU and other neighbouring universities are invited to the weekly seminars on an individual basis after consultation with the speaker.



26 January

Roland Scholz
Transdisciplinarity – a new mode of doing science. From science for, to science with, society

2 February

Theunis Roux
The politics of principle: the first South African Constitutional Court, 1995-2005

9 February

Andrew Macnab
Creative space for the mind

16 February

Marc van Regenmortel
The so-called scientific method in vaccine development; will there ever be an HIV/Aids vaccine?

23 February

Claire Penn, Elisabeth Ahlsén and Jens Allwood
Health care interactions in multicultural societies

1 March

Wolfgang Huber
One year after Fukushima – the precautionary principle revisited

8 March

Reinette Biggs
Ecosystems services in the Anthropocene: anticipating and managing regime shifts

15 March

Raymond Suttner
The ANC centenary: re-reading the meanings of its history

22 March

Paulin Hountondji
What is wrong with ethno-philosophy?

29 March

Aryan Kaganof
Threnody for the victims of democracy – utilising mobile media to protect citizens from the police

4 April

Michael Udvardi
Functional genomics of symbiotic nitrogen fixation in legumes

5 April

Kogila Moodley and Heribert Adam
Integrating difference: South African experiences compared – xenophobia, migrancy and multiculturalism

12 April

Chris Fuchs and Rüdiger Schack
How quantum theory changes the way we think of the world

19 April

Chabani Manganyi
Moments of awakening: Apartheid and the making of a psychologist

25 April

Njabulo Ndebele
'Behind Sweaty Windows': a story of boxing in the Eastern Cape

3 May

David Freedberg
From iconoclasm to neuroscience: new approaches to the history and theory of images

10 May

David Attwell
JM Coetzee in/and the Karoo

17 May

Ralph Dean Christy
Small is still beautiful (small to medium enterprises as important sources of jobs in low-income communities)

24 May

Michael Chapman
Whither/wither L/literature? uses in society

28 June

Stephen Clingman
Writings on the wall: the space of transition in South Africa

5 July

Dilip Menon
Gandhi and the discourse of civilisation and degeneration in the early 20th century

19 July

Brian Child
Is wildlife 'one of Africa's greatest agricultural transformations' and can we spread its benefits to poor rural communities?

2 August

Mark Colyvan
Where are the laws? (in ecology)

This page, from left:
Reinette Biggs
Paulin Hountondji
Chabani Manganyi
Stephen Clingman

Facing page, from left:
Wentzel van Huyssteen
Mario Giampietro
Nina Jablonski
Marcello Barbieri

STIAS SEMINARS continued

8 August

Lev Ginzburg

How species interact: altering the standard view of trophic ecology

16 August

John Damuth

Population density and body size: the invisible hand of the Red Queen?

23 August

Paul Nugent

South African wine in a global context: the politics of regulation, race and consumption, c.1900-1960

30 August

Mia Swart

Apartheid reparations: is ATCA an appropriate model for obtaining reparations?

6 September

Julia Xue

Sailing stormy seas: response of ocean law and policy in the age of climate change

13 September

Dianne Newell

Contextualising the collection and transmission of traditional knowledge of Canada's northwest coast peoples: the implications for traditional ecological knowledge

20 September

Gerhard Maré

All too real: race thinking and thinking about race in post-1994 South Africa

27 September

Vincent Brümmer

Piety versus Orthodoxy

4 October

Joachim de Beule

Code Biology

11 October

Arthur Ray

Culture history wars, aboriginal land claims, and treaty rights: a comparative examination of claims-oriented research in Australia, North America, New Zealand and South Africa

18 October

Paul Sinclair and

Chantal Radimilahy

Towards an archaeology of the future – urban minds

25 October

Ulf Gerdtham

Do socio-economic factors really explain income-related inequalities in health?

1 November

Lucie Laflamme and

Marie Hasselberg

A multidisciplinary research project on mobile telephony and acute injury care in resource-poor settings

6 November

Rosalind Morris

'1973/2012 – A Striking Resemblance': labor, mines, and the historical politics of strikes in South Africa

8 November

Eric Freyfogle

Private ownership and human flourishing, with comments on a progressive theory of property

15 November

Olle Inganäs

When solar current is cheap, plentiful and lasts all night through...what then of coming energy systems in Africa?

20 November

Jaap Spier and

Ulrich Magnus

Injunctions against climate change

22 November

Rias van Wyk

Technological knowledge: a new structure

29 November

Siamon Gordon

Macrophages: from immunity to social vaccination

6 December

Megan Vaughan

Maternal mortality in Malawi: history and moral responsibility

*This page, from left:
Lev Ginzburg
Mia Swart
Eric Freyfogle
Joachim de Beule
Rosalind Morris*



STIAS (AND RELATED) PUBLICATIONS

Books

Engel U (ed)

New Mediation Practices in African Conflicts.
Leipzig Universitätsverlag, Leipzig (2012)

Huber W

Christian responsibility and Communicative Freedom: A challenge for the future of pluralistic societies. Collected essays. Willem Fourie (ed) LIT Verlag, Münster (2012)

Joas H

Die Sakralität der Person: Eine neue Genealogie der Menschenrechte. Suhrkamp Verlag (2011). (This book appeared in Portuguese in 2012 and in English (Hans Joas, *The Sacredness of the Person. A New Genealogy of Human Rights.* Georgetown University Press, Washington, DC) in 2013)

McCloskey DN

Bourgeois Dignity: Why Economics Can't Explain the Modern World. University of Chicago Press, Chicago (2011)

Rylander S

Nelson Mandela. Historiska Media, Lund (2012)

Spier J

Shaping the Law for Global Crises. Eleven International Publishing, The Hague (2012)

Van Beek UJ (ed)

Democracy Under Stress: The global crisis and beyond? SUN MeDIA, Stellenbosch (2012)

Van Haute P and Geyskens T

A Non-Oedipal Psychoanalysis?: A Clinical Anthropology of Hysteria in the Works of Freud and Lacan (Figures of the Unconscious). Leuven University Press, Leuven (2012)

Zaretsky E

Why America Needs a Left: A Historical Argument. Polity Press, Cambridge and Malden (2012)

Chapters in books

Adam H

Comparing South Africa's Negotiated Settlement with Elusive Peacemaking in Israel/Palestine. In Sherrill Grace et al (eds), *Bearing Witness: Cultural Perspectives on War and Peace* Chapter 11, 163-173. McGill/Queens University Press, Montreal (2012)

Engel U

The African Union and mediation in cases of Unconstitutional Changes of Government, 2008-2011. In Ulf Engel (ed), *New Mediation Practices in African Conflicts* 55-82. Leipziger Universitätsverlag, Leipzig (2012)

Engel U

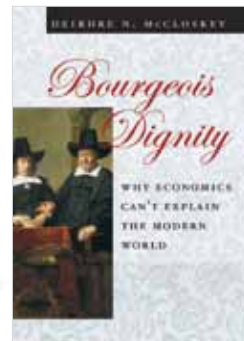
Ambitions, constraints and opportunities – Some tentative conclusions on new mediation practices in African conflicts. In Ulf Engel (ed), *New Mediation Practices in African Conflicts* 255-261. Leipziger Universitätsverlag, Leipzig (2012)

Motha S

Colonial Sovereignty, Forms of Life and Liminal Beings in South Africa. In Svirsky M and Bignall S (eds), *Agamben and Colonialism. Critical Connections* 128-151. Edinburgh University Press, Edinburgh (2012)

Nugent P

Who killed innovation in the Cape wine industry? The story of a stuck fermentation c.1930-1986. In Jan-Bart Gewald, André Leliveld and Iva Pesa (eds), *Transforming Innovations in Africa: Explorative Studies on Appropriation in African Societies* 17-38. Brill, Leiden (2012)



STIAS (AND RELATED) PUBLICATIONS continued

Journal Articles

- Adam H**
Neither a Two-State nor a One-State Solution.
Ethnopolitics (2011) **10**(3-4) 451-455
- Biggs R, Schlüter M, Biggs D et al**
Toward Principles for Enhancing the Resilience of Ecosystem Services.
Annual Review of Environment and Resources (2012) **37** 421- 448. Book Editor(s): Gadgil A and Liverman DM
- Canagarajah AS**
Migrant ethnic identities, mobile language resources: Identification practices of Sri Lankan Tamil youth.
Applied Linguistics Review (2012) **3**(2) 251–272
- Child BA, Musengezi J, Parent GD and Child GFT**
The economics and institutional economics of wildlife on private land in Africa.
Pastoralism: Research, Policy and Practice (2012) **2**(18). doi:10.1186/2041-7136-2-18
- Child B**
The sustainable use approach could save South Africa's rhinos.
South African Journal of Science (2012) **108**(7/8) Art. #1338, 4 pages. doi.org/10.4102/sajs.v108i7/8.1338
- Cilliers P and Nicolescu B**
Complexity and transdisciplinarity – Discontinuity, levels of Reality and the Hidden Third.
Futures (2012) **44**(8) 711-718
- Drack M and Wolkenhauer O**
System approaches of Weiss and Bertalanffy and their relevance for systems biology today.
Seminars in Cancer Biology (2011) **21**(3) 150-155
- Fraser N**
Social exclusion, global poverty, and scales of (in)justice: rethinking law and poverty in a globalizing world.
Stellenbosch Law Review (2011) **22**(3) 452 – 462
- Freedberg D**
The Case of the Spear.
Art South Africa (2012) **11**(1) 36-41
- Guebel DV, Schmitz U, Wolkenhauer O et al**
Analysis of cell adhesion during early stages of colon cancer based on an extended multi-valued logic approach.
Molecular Biosystems (2012) **8**(4) 1230-1242
- Hepple B**
Negotiating social changes in the shadow of the law.
South African Law Journal (2012) **129**(2) 248-273
- Huber W**
After Fukushima: The precautionary principle revisited.
Verbum et Ecclesia (2012) **33**(2) Art. #736, 6 pages. doi.org/10.4102/ve.v33i2.736
- Jablonski NG**
Skin: Its biology in black and white.
Palaeontologica Africana (2012) **47** 62-66
- Jablonski NG**
The struggle to overcome racism.
New Scientist (2012) 1 September 2012, 25-29
- Jones N and Wolkenhauer O**
Diagrams as locality aids for explanation and model construction in cell biology.
Biology & Philosophy (2012) **27**(5) 705-721
- Kasangaki A, Macnab A and Gagnon F**
A Descriptive, Cross-Sectional Study of Ugandan Students in Health Care Education regarding Postgraduate Migration and Future Practice.
ISRN Education (2012) **2012** Art. # 357280, 5 pages. doi:10.5402/2012/357280
- Kasangaki A, Macnab A and Cannon W**
Videotaped interviews as a medium to enhance cross-cultural programme evaluation.
Health Promotion International (2012) **27**(1) 74-81
- Kassanje R, McWalter TA, Baernighausen T, Macnab A et al**
A New General Biomarker-based Incidence Estimator.
Epidemiology (2012) **23**(5) 721-728
- Kossow C, Jose D, Jaster R, Wolkenhauer O et al**
Mathematical modelling unravels regulatory mechanisms of interferon-gamma-induced STAT1 serine-phosphorylation and MUC4 expression in pancreatic cancer cells.
IET Systems Biology (2012) **6**(3) 73-85
- Lai X, Schmitz U, Gupta SK, Bhattacharya A, Kunz M, Wolkenhauer O and Vera J**
Computational analysis of target hub gene repression regulated by multiple and cooperative miRNAs.
Nucleic Acids Research (2012) **40**(18) 8818-8834
- Lange F, Rateitschak K, Kossow C, Wolkenhauer O and Jaster R**
Insights into erlotinib action in pancreatic cancer cells using a combined experimental and mathematical approach.
World Journal of Gastroenterology (2012) **18**(43) 6226-6234
- Lao A, Schmidt V, Schmitz Y, Willnow TE and Wolkenhauer O**
Multi-compartmental modeling of SORLA's influence on amyloidogenic processing in Alzheimer's disease.
BMC Systems Biology (2012) **6** Art. #74. doi: 10.1186/1752-0509-6-74
- Liebal UW, Sappa PK, Millat T, Wolkenhauer O et al**
Proteolysis of beta-galactosidase following SigmaB activation in *Bacillus subtilis*.
Molecular Biosystems (2012) **8**(6) 1806-1814
- Logan C and Mattes R**
Democratising the measurement of democratic quality: public attitude data and the evaluation of African political regimes.
European Political Science (2012) **11**(4) 469-491
- Macnab A, Friedman B, Shadgan B and Stothers L**
Bladder anatomy physiology and pathophysiology: Elements that suit near infrared spectroscopic evaluation of voiding dysfunction.
Biomedical Spectroscopy and Imaging (2012) **1**(3) 223-235
- Macnab A and Kasangaki A**
'Many voices, one song': a model for an oral health programme as a first step in establishing a health promoting school.
Health Promotion International (2012) **27**(1) 63-73

Macnab AJ, Stothers LS and Shadgan B

Monitoring Detrusor Oxygenation and Hemodynamics Noninvasively during Dysfunctional Voiding. *Advances in Urology* (2012) **2012** Art. # 676303, 8 pages. doi:10.1155/2012/676303

Macnab A and Shadgan B

Biomedical applications of wireless continuous wave near infrared spectroscopy. *Biomedical Spectroscopy and Imaging* (2012) **1**(3) 205-222

Macnab AJ, Shadgan B and Stothers L

The evolution of wireless near infrared spectroscopy applications in urology and rationale for clinical use. *Journal of Near Infrared Spectroscopy* (2012) **20**(1), Special Issue, 57-73

Mastoroudes H, Giarenis I, Vella M, Srikrishna S, Robinson D, Cardozo L, Karrouze I, Campbell A and Macnab A

Use of Near Infrared Spectroscopy as an Alternative to Videourodynamics to Detect Detrusor Overactivity in Women with the Overactive Bladder Syndrome. *Urology* (2012) **80**(3) 547-550

Mattes R

The 'Born Frees': The Prospects for Generational Change in Post-apartheid South Africa. *Australian Journal of Political Science* (2012) **47**(1) 133-153

Mermin ND

Quantum mechanics: Fixing the shifty split. *Physics Today* (2012) **65**(7) 8-10

Michelman FI

Liberal Constitutionalism, Property Rights, and the Assault on Poverty. *Stellenbosch Law Review* (2011) **22**(3) 706-723

Moodley K and Adam H

Shifting boundaries and flexible identities within a multicultural Canada. *Intercultural Education* (2012) **23**(5) 425-436

Moodley S, Kasangaki A and Macnab AJ

Education in Global Health: Experience in Health-Promoting Schools Provides Trainees with Defined Core Competencies. *ISRN Education* (2012) **2012** Art. # 718303, 7 pages. doi:10.5402/2012/718303

Morgenthau A, Nicolae AM, Laursen AE, Foucher DA, Wolfaardt GM and Hausner M

Assessment of the working range and effect of sodium dichloroisocyanurate on *Pseudomonas aeruginosa* biofilms and planktonic cells. *Biofouling* (2012) **28**(1) 111-120

Muysken P

Spanish affixes in the Quechua languages: A multidimensional perspective. *Lingua* (2012) **122**(5), Special Issue, 481-493

Rateitschak K, Winter F, Lange F, Jaster R and Wolkenhauer O

Parameter Identifiability and Sensitivity Analysis Predict Targets for Enhancement of STAT1 Activity in Pancreatic Cancer and Stellate Cells. *PLOS Computational Biology* (2012) **8**(12) Art. # e1002815. doi: 10.1371/journal.pcbi.1002815

Shadgan B, Macnab AJ, Nigro M and Stothers L

Monitoring of lower urinary tract function in patients with spinal cord injury using near infrared spectroscopy *Proc SPIE* (2012) **8207** 820717-1

Schmidt V, Baum K, Lao A, Wolkenhauer O et al

Quantitative modelling of amyloidogenic processing and its influence by SORLA in Alzheimer's disease. *EMBO Journal* (2012) **31**(1) 187-200

Sinclair J

Poverty: Giving meaning to the right to social assistance. *Stellenbosch Law Review* (2012) **23**(2) 191-224

Stothers L, Shadgan B and Macnab A

Near-infrared spectroscopy of the detrusor during urodynamics with simultaneous ultrasound measurements of bladder dimensions and position. *Biomedical Spectroscopy and Imaging* (2012) **1**(2) 37-145

Suttner R

The African National Congress centenary: a long and difficult journey. *International Affairs* (2012) **88**(4) 719-738

Van Regenmortel MHV

Requirements for empirical immunogenicity trials, rather than structure-based design, for developing an effective HIV vaccine. *Archives of Virology* (2012) **157**(1) 1-20

Wolkenhauer O, Shibata D and Mesarovic MD

The role of theorem proving in systems biology. *Journal of Theoretical Biology* (2012) **300** 57-61

Zonetti S and Govaerts J

Duality between (1+1)-dimensional dilaton-Maxwell gravity and Liouville field theory. *Journal of Physics A-Mathematical and Theoretical* (2012) **45**(4) Art. # 042001. doi: 10.1088/1751-8113/45/4/042001

FUNDING AND GOVERNANCE

STIAS, a Section 21 company since May 2007, is governed by a Board of Directors. The Board meets biannually (in 2012 it met on 23 April and 9 November).

The Director of STIAS is responsible for the development of the STIAS research programme. He is assisted in this task by an Academic Advisory Board and by an international panel of experts which includes former STIAS fellows. The Academic Advisory Board also meets biannually. In the year under review meetings were held on 4 May and 22 November.

Members of the STIAS Fellowship and Research Programme Committee which meets weekly during the STIAS semester, assist the Director in giving structure to the STIAS research programme.

Board of Directors

Desmond Smith, Chair (Director of Companies)
Russel Botman (Rector and Vice-Chancellor, Stellenbosch University)
Dan Brändström (former Director, Bank of Sweden Tercentenary Foundation)
Cheryl de la Rey (Vice-Chancellor and Principal, University of Pretoria)
Hendrik Geyer (Director of STIAS)
Christof Heyns (University of Pretoria and United Nations special rapporteur on extrajudicial, summary or arbitrary executions)
Bernard Lategan (STIAS founding Director)
Göran Sandberg (Executive Director: Knut and Alice Wallenberg Foundation)
Raenette Taljaard (University of Cape Town and former Member of Parliament)

Company members

James Gates (representative of STIAS Society of Fellows)
Hendrik Geyer (Director of STIAS)
Fritz Hahne (former Director of the African Institute for Mathematical Sciences)
Jan-Hendrik Hofmeyr (Centre for Studies in Complexity, Stellenbosch University)
Bernard Lategan (STIAS founding Director)
Joachim Nettelbeck (Wissenschaftskolleg, Berlin)
Desmond Smith (Director of Companies)
Laetitia van Dyk (Stellenbosch University Business School)
André van der Walt (SA Research Chair in Property Law, Stellenbosch University)

Academic Advisory Board

Peter Vale, Chair (Political Science, University of Johannesburg)
Morné du Plessis (CEO, WWF South Africa)
Hendrik Geyer (Director of STIAS)
Jan-Hendrik Hofmeyr (Centre for Studies in Complexity, Stellenbosch University)
Bernard Lategan (STIAS founding Director)
Mzamo Mangaliso (Isenberg School of Management, University of Massachusetts; former President, NRF)
Servaas van der Berg (SA Research Chair in the Economics of Social Policy, Stellenbosch University)
André van der Walt (SA Research Chair in Property Law, Stellenbosch University)
Charles van Onselen (Unit for Advanced Studies, University of Pretoria)
Louise Viljoen (Department of Afrikaans and Dutch, Stellenbosch University)

Fellowship and Research Programme Committee

Hendrik Geyer, Chair (Director of STIAS)
Jan-Hendrik Hofmeyr (Centre for Studies in Complexity, Stellenbosch University)
Bernard Lategan (STIAS founding Director)
Louise Viljoen (Department of Afrikaans and Dutch, Stellenbosch University)

Society of Fellows

A STIAS Society of Fellows was established in 2010. Peter Weingart, former director of the Zentrum für interdisziplinäre Forschung (ZiF), Bielefeld, serves as its President. The Society is kept informed about STIAS matters and it also serves as a source for STIAS proposals.

FINANCIAL REPORT: STELLENBOSCH INSTITUTE FOR ADVANCED STUDY (STIAS)

(REG NR 2007/014516/08)

Statement of income and expenditure for the year ended 31 December 2012

Notes	31 December 2012 R	31 December 2011 R
	6 738 742,00	–
Income: conference facilities		
Other incomes	13 286 858,00	5 313 704,00
<i>Donations</i>		
Daimler Chrysler Fund	223 825,00	–
Donald Gordon Foundation	750 000,00	–
Heemstede Stichting	111 000,00	–
Het Jan Marais Nationale Fonds	55 000,00	–
Riksbankens Jubileumsfonds	694 266,00	–
Stellenbosch University: Contribution to operating cost	2 500 000,00	–
Transfer of previous STIAS donations		
received at Stellenbosch University	5 309 189,00	5 313 704,00
Wallenberg Foundation	2 749 655,00	–
National Research Foundation	579 398,00	–
Rental income	309 156,00	–
Foreign exchange gain	5 370,00	–
Expenses	18 451 139,00	25 624,00
Advertising	25 154,00	–
Audit fees for audit	27 417,00	25 624,00
Books	48 430,00	–
Catering: conference facilities	5 044 728,00	–
Consultation	147 547,00	–
Consumables	230 330,00	–
Depreciation	684 670,00	–
Entertainment	28 004,00	–
Foreign exchange loss	4 091,00	–
General office expenses	18 212,00	–
Internet	18 049,00	–
Maintenance of equipment	75 066,00	–
Postage	25 006,00	–
Security services	118 621,00	–
Services	2 590 285,00	–
Smaller assets	68 235,00	–
Staff remuneration and stipendia for fellows	5 230 386,00	–
Stationery and printing	167 408,00	–
Telephone	175 607,00	–
Travel and accommodation	3 723 892,00	–
Operating surplus	1 574 461,00	5 288 080,00
Finance income	562 167,00	128 956,00
Tax expense	(481 225,00)	–
Surplus for the year after tax	1 655 403,00	5 417 036,00

Notes to the financial statement of STIAS for the year ended 31 December 2012

The Stellenbosch Institute for Advanced Study operated independently from Stellenbosch University since 1 January 2012 after the conclusion of rental and administrative agreements at arm's length with the University. Prior year figures are therefore not directly comparable.

Income

1. Included in the Transfer of previous STIAS donations received at Stellenbosch University in 2011 is an amount of R 3 514 032 which was received from the National Research Foundation.

Expenses

2. Services include rent paid to Stellenbosch University, electricity, water, property tax etc.



Ms F Majiet

Director of Financial Services, Stellenbosch University



DIRECTOR AND STAFF

During 2012 the staff component at STIAS remained very stable. Dr Johann Groenewald joined the staff as STIAS coordinator: strategic initiatives in 2012 and was engaged, in particular, with the arrangements for the first STIAS-Wallenberg Round Table meeting on Energy in March 2013. Dr Christoff Pauw was appointed as part-time STIAS network coordinator in February 2013.

*From left to right:
Maggie Pietersen, coordinator of building and site management,
Yanga Nkathazo, gardener,
Leonard Katsokore, factotum,
Maria Mouton, personal assistant and secretary to the director,
Bernard Lategan, programme coordinator: African projects (part-time),
Christoff Pauw, STIAS network coordinator (part-time),
Hendrik Geyer, director,*

*Johann Groenewald, STIAS coordinator: strategic initiatives (part-time),
Nel-Mari Loock, IT and conference/workshop support specialist,
Goldie van Heerden, owner patron of Catering Unlimited,
Gwen Slingers, support staff,
Karin Brown, support staff, and
Gudrun Schirge, programme manager (part-time).*

