

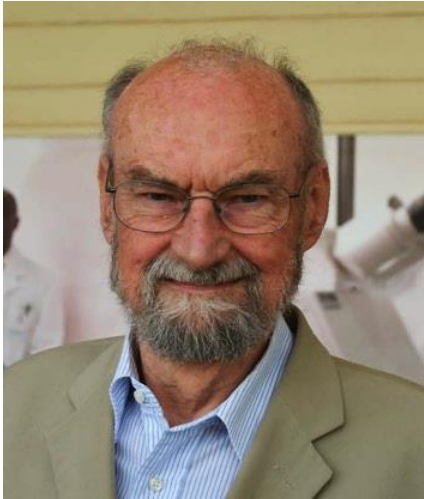
The Kirkhouse Trust Funding Model: Focused and Hands-on

Claudia Canales Holzeis, Chief Executive

kirkhoustrust.org



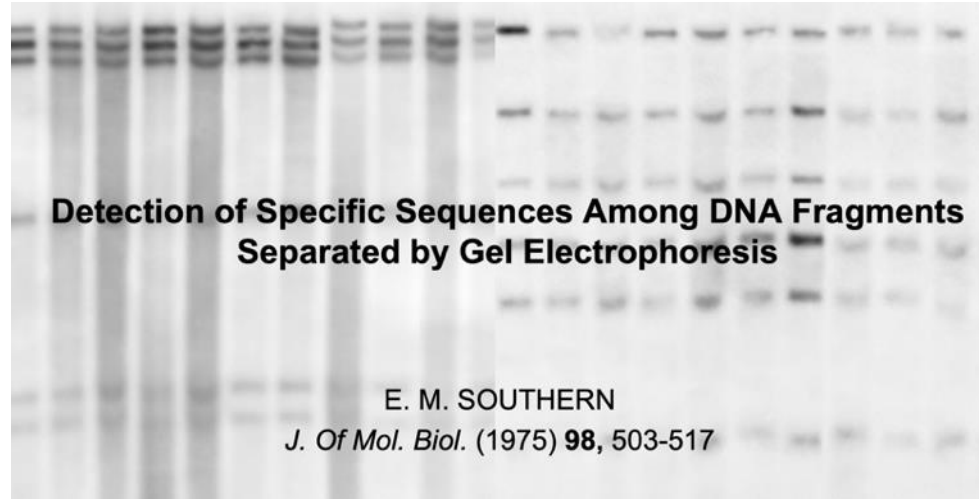
The Kirkhouse Trust (KT)



Ed Southern



Sonia Morgan



Claudia Canales

- Founded in 2000 by Ed Southern, the inventor of the “Southern Blot”
- This publication gave Ed fame (~39,800 academic citations), but no fortune
- Ed also invented and commercialised the DNA microchip- the profits funded KT
- Sonia Morgan- administration and finances
- KT transitioned in 2020 to operate as a charity in perpetuity (fixed yearly budget)
- Claudia Canales Holzeis appointed as KT’s CE in 2020 as part of a succession plan

KT's funding model

1. Focus on agricultural production in India and in African countries: key sector for national economies and provision of employment
2. Invest on nutritious crops which have received relatively little investment: legumes.
3. Promote the establishment of in-country scientific capacity (training and research infrastructure)
4. Nurture the establishment of scientific communities to share research products between countries with common goals
5. Establish partnerships with other actors in the food system



Current KT-funded projects

African Cowpea Consortium (ACC)

Cameroon, Zambia, Botswana

Past projects: Burkina Faso, Ghana, Nigeria, Mali, Niger, Senegal and Togo

African Bean Consortium (ABC)

Ethiopia, Kenya, Mozambique, Uganda, Tanzania, Zambia

Past projects: Rwanda, Western Kenya

Stress tolerant orphan legumes (STOL)

Burkina Faso, India, Senegal

Past projects: Ghana, Kenya, Mali, Namibia, Nigeria, Niger, Tanzania, Uganda

Teaching project

Zimbabwe



KT's grantees

African Bean Consortium



Esther Arunga
Kenya



Celestina Jochua
Mozambique



Kelvin Kamfwa
Zambia



Philipo Mashamba
Tanzania



Stanley Nkalubu
Uganda



Yayis Rezene
Ethiopia

Bambara Breeding Initiative

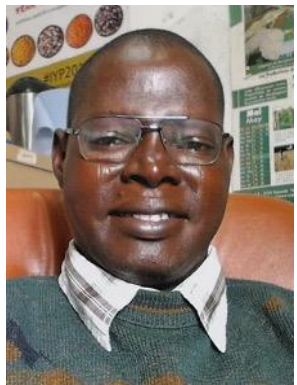


Julia Sibiya
South Africa



Florence Akaneme
Nigeria

African Cowpea Programme



Sobda Gonné
Cameroon



Velindah Chibomba
Zambia



Sethunya Tait
Botswana

Stress Tolerant Orphan Legumes



Samuel Jeberson
Muniyandi
India



Vandana Tyagi
India



Felicien Zida
Burkina Faso



Issa Faye
Senegal

Teaching



Idah Sithole Niang

The KT funding model

I. Scientific mentoring

- It is hands-on: we work in close partnership with KT's grantees.
- Team of scientific consultants follows the projects' progress closely, provide mentoring and technological backstopping, and host PIs and students for training.



Michael Timko
(all programmes)



Robert Koebner
(all programmes)



**María Muñoz-
Amatriaín** (cowpea)

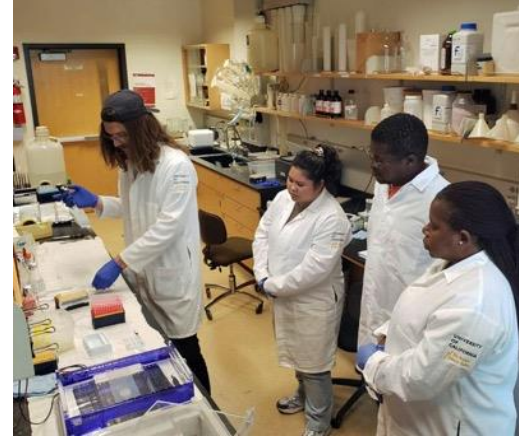
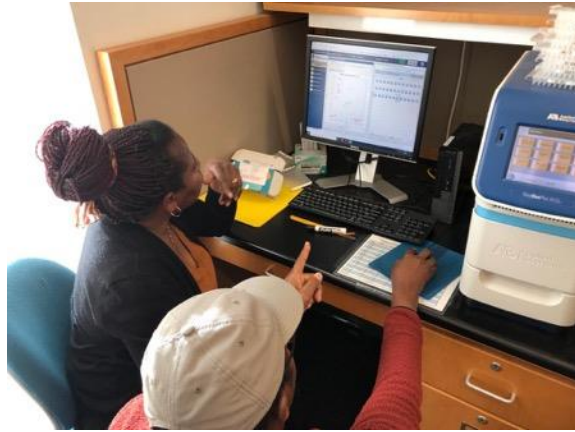


Travis Parker
(common bean)



Prem Mathur
(STOL)

I. Scientific mentoring (cont.)



KT has awarded 58 MSc and 49 PhD scholarships

The KT funding model

II. Choice of breeding objectives and technology

- Focus on a small set of major constraints under simple genetic control to accelerate the improvement of local germplasm and train local breeders
- Development of low-cost tools, readily available, and easily applicable



The KT funding model

III. Smallholder farmers: engaged in crop improvement programmes and intended beneficiaries

- Initial selection of landraces to be improved, target characteristics for improvement and valued characteristics to be retained (taste, cooking time, colour)
- Participate in the selection of advanced breeding lines considered for release



The KT funding model

IV. Improvement and maintenance of infrastructure

KT has established and maintains functional molecular biology laboratories and screenhouses



Ann Lonie (KT's P&D officer) packing a lab re-stock consignment



Frederik Awusu (Ghana) receiving lab supplies



Kelvin Kamfwa and his team by the KT screenhouse

The KT funding model

IV. Typically small grants, but long-term support possible (desired)

Esther Arunga during a training in 2011 as a MSc student (top) and with her research team (below) in 2021, University of Embu, Kenya.



Sobda Gonné during a training visit at Mike Timpko's lab, University of Virginia, in 2008, and below, with his research team, IRAD, Cameroon (2022).



African Cowpea Programme

1. Initial objective: Striga-resistant farmer preferred cowpea varieties
2. Broadened to include: aphid resistance, *Alectra vogelii* resistance, disease resistance (*Fusarium*, *Macrophomina*), earliness, large seed size



Striga, aphids and *Alectra*.



Petra Raitaniemi (Science Project Officer) and Fleur Geoghegan (Operations Manager)

African Bean Consortium

1. To develop multiple disease-resistant locally preferred common bean varieties using marker assisted selection

Diseases: anthracnose, angular leaf spot, common bacterial blight, *Pythium* root rot, bean common mosaic virus, bean common necrotic mosaic virus, bean scab.



Anthracnose (first panel), angular leaf spot.

2. To understand, preserve and use the diversity of beans in Africa



Philip Pinheiro (Senior Science Project Officer) and Fleur Geoghegan (Operations Manager)

Bambara Breeding Initiative (BBI)



KT's Bambara Breeding Initiative (BBI) was established in 2023 to address key constraints for this crop: low productivity, long cooking time and susceptibility to fungal disease.



Mark -Sharbel Asman (Science Project Officer) and Fleur Geoghegan (Operations Manager)

The Stress Tolerant Orphan Legume Consortium (STOL)

STOL crops: moth bean (*Vigna aconitifolia*), mung bean (*Vigna radiata*), horsegram (*Macrotyloma uniflorum*), dolichos (*Lablab purpureus*), Bambara groundnut (*Vigna subterranean*), marama bean (*Tylosema esculentum*), tepary bean (*Phaseolus acutifolius*)



Mark -Sharbel Asman (Science Project Officer) and Fleur Geoghegan (Operations Manager)

KT's future funding priorities

KT is currently reviewing mid- and long-term priorities: work in progress
Focus on adding value, maximising synergies and avoiding duplications

Cowpea:

- Geographical shift from West Africa to East Africa
- PhD scholarship on combining beneficial plant architecture production traits (Kuwabo Kuwabo, UNZA)
- Storage pests
- Climate change adaptation

Common bean

- Disease resistance to remain key priority
- Climate change adaptation (heat and water stress)
- Nutrition content
- Cooking time
- PhD scholarship on bean stem maggot (Shylet Tsekenedza, Zimbabwe)

Breeding programmes for STOL crops

- Bambara groundnut



Bambara groundnut

Thank you