

USA-AFRICA RESEARCH
COLLABORATIONS:
One African Perspective

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Overview

- Some SA and African context
- Barriers to SA research
- Research opportunities
- Overcoming barriers to collaboration

African Context: General

- >1 billion people, 15% of globe
- Youngest population of all continents
- Low and middle income countries
- Rapid economic growth in many

African Context: Psychiatry

- Relatively few psychiatric services
- 10/90 gap in research
- Important opportunities for growth
- And a special place for psychiatry

WHO Mental Health Atlas: SA

Psychiatric Beds and Professionals

Total psychiatric beds per 10 000 population	4.5
Psychiatric beds in mental hospitals per 10 000 population	4
Psychiatric beds in general hospitals per 10 000 population	0.38
Psychiatric beds in other settings per 10 000 population	0.12
Number of psychiatrists per 100 000 population	1.2
Number of neurosurgeons per 100 000 population	0.3
Number of psychiatric nurses per 100 000 population	7.5
Number of neurologists per 100 000 population	0.3
Number of psychologists per 100 000 population	4
Number of social workers per 100 000 population	20

SA Stress & Health Study (SASH)

- First nationally representative psychiatric epidemiology study in Africa
- n = 4351, rigorous probability sample design

Disability and Treatment of Psychiatric and Physical Disorders in South Africa

Sharain Suliman, MA, Dan J. Stein, MD, PhD,† Landon Myer, PhD,‡ David R. Williams, PhD,§
and Soraya Seedat, MD, PhD**

- Psychiatric disorders are more disabling than physical disorders
- Psychiatric disorders are 10 times less likely to be diagnosed and treated

Research Capacity in LAMICs

Research capacity for mental health
in low- and middle-income countries:
Results of a mapping project



Global Forum
for Health Research
HELPING CORRECT THE SDG GAP



World Health
Organization

10/90 Gap in MH Research

	1992	2001
Low income	0.87	0.64
Low-middle income	2.57	3.79
Upper-middle income	1.29	1.49
Upper income	95.27	94.08



What's wrong with this picture?

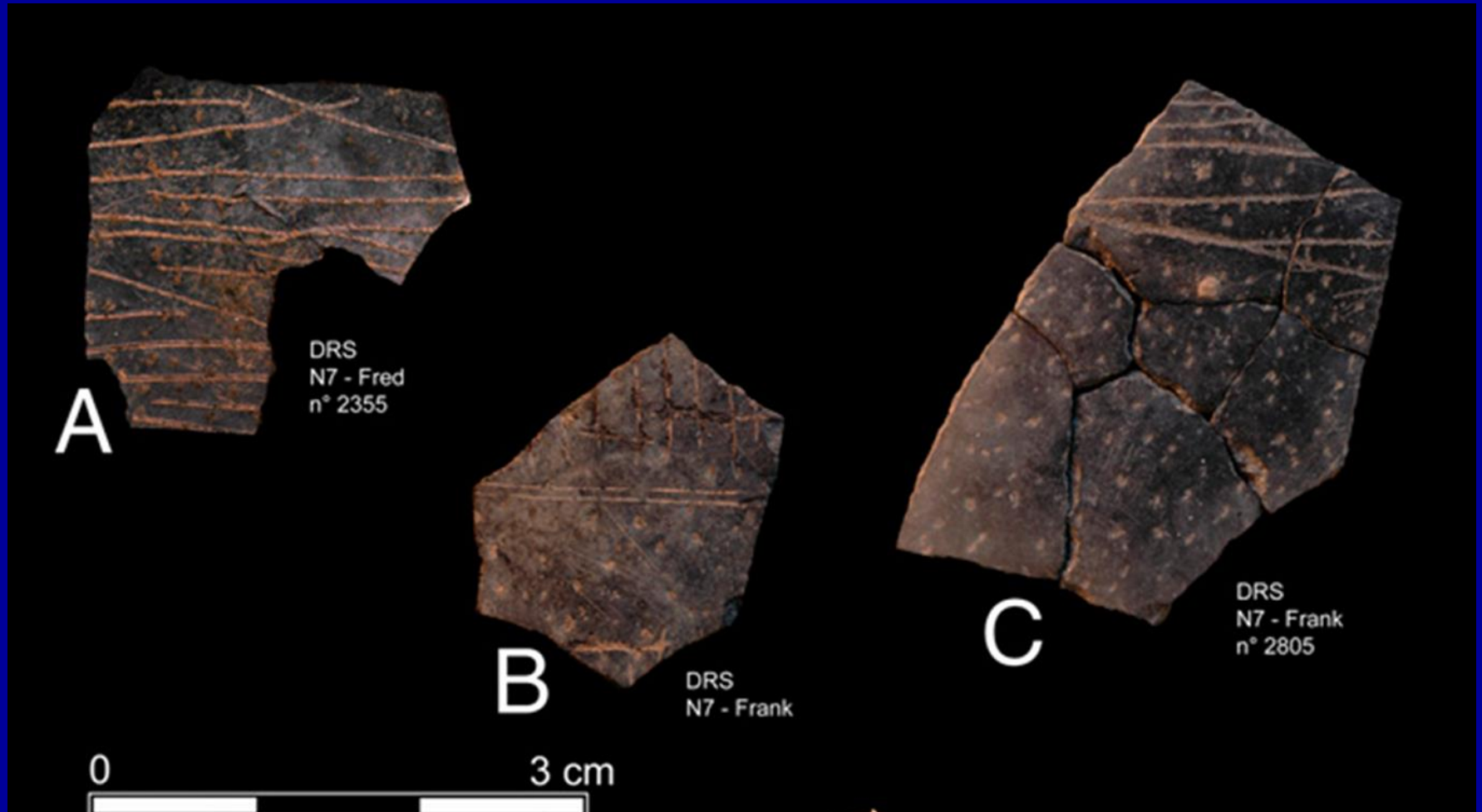
That said, there are many other
images ...



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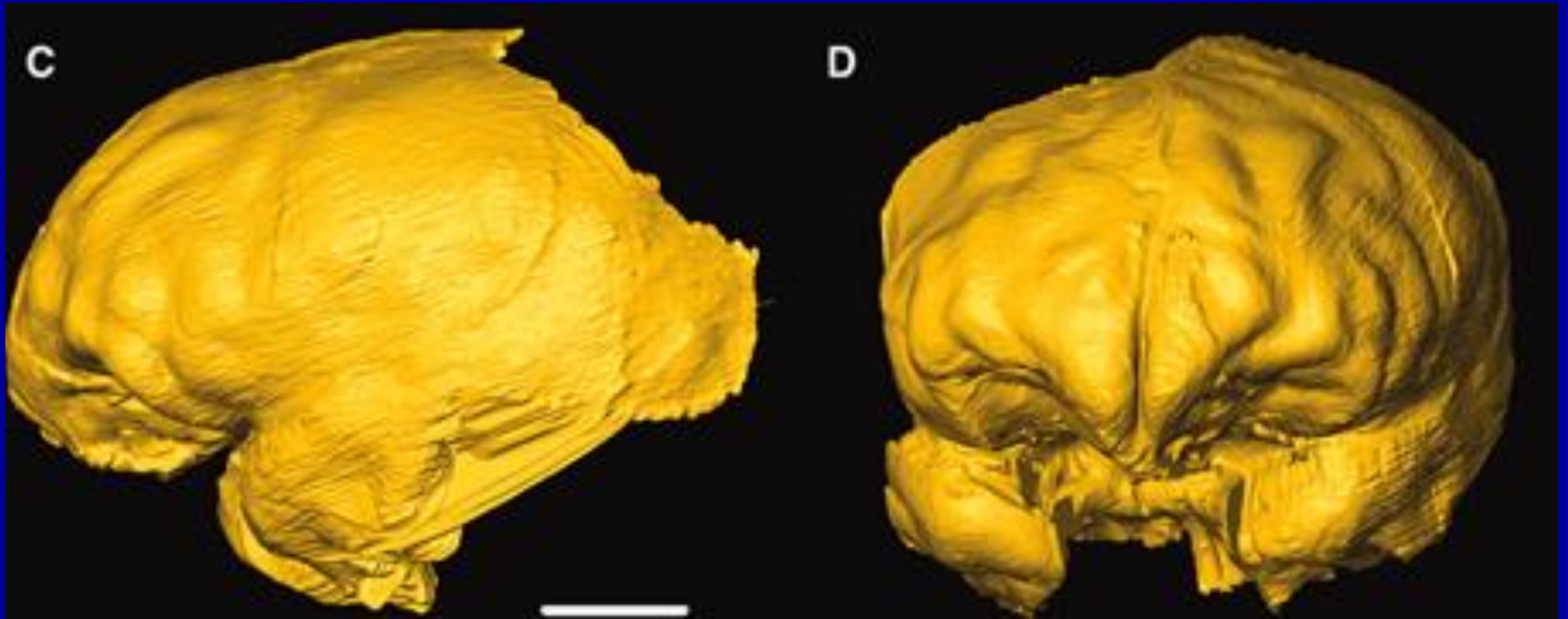
Are we all Capetonians?



“Cradle of Mankind” Heritage Site



“Cradle of Mankind” and Paleo-neuroscience



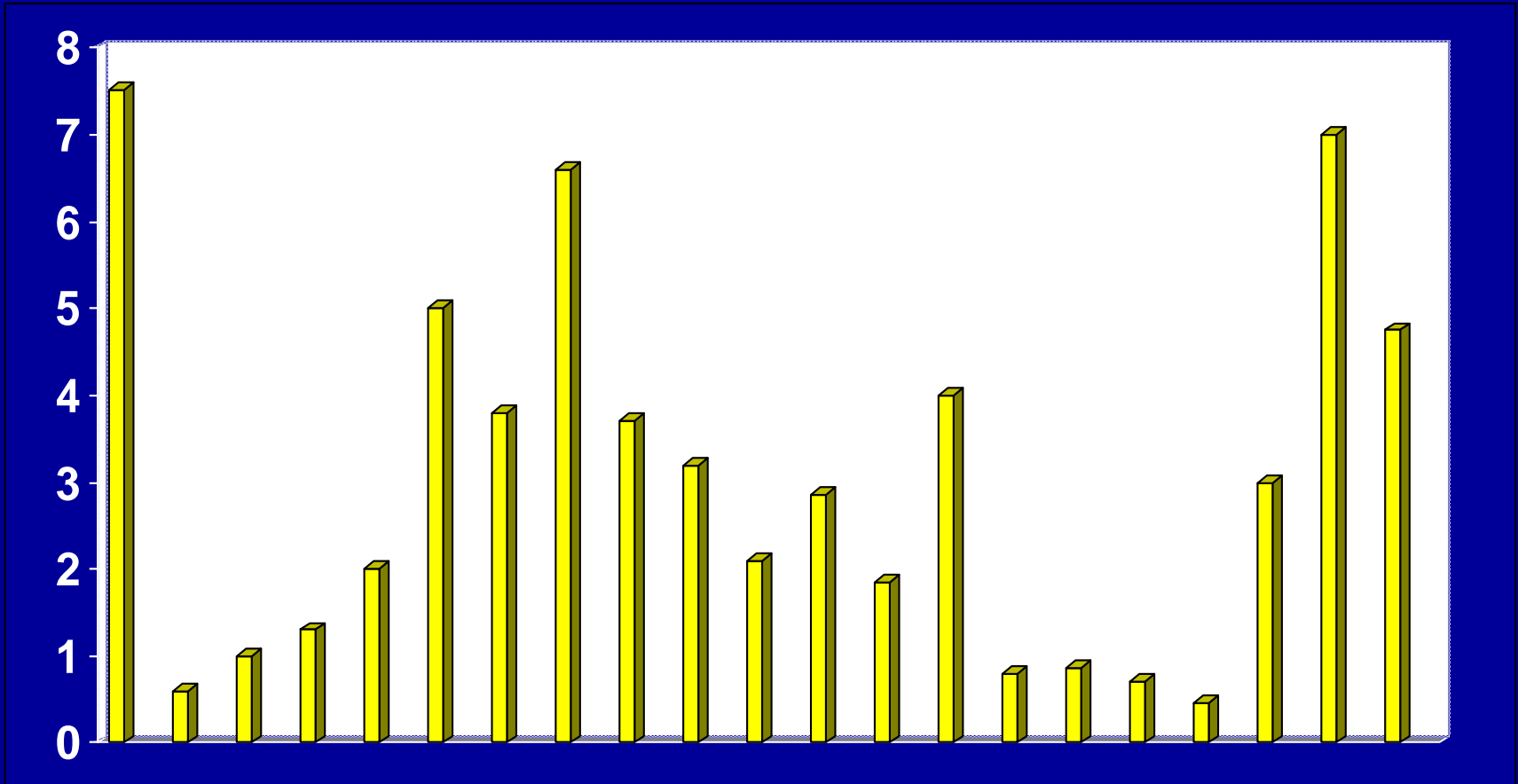
Barriers to Research

- “External” reasons:
 - under-resourcing of health / science
 - under-resourcing of psychiatry
 - no psychopharmaceutical industry

Budgets For Mental Health Services

- Difficult to determine in SA, but likely less than 5% of health budget ...
- In other African countries may be even lower ...

ALLOCATION OF MRC BUDGET PER THRUST



No Psychopharm Industry in Africa

- Perhaps a premature issue to mention
- But in the last few years, major African drug discovery efforts in areas such as malaria and TB

Barriers to Research

- “Internal” reasons
 - academic isolation during apartheid
 - few research-led hospitals
 - lack of sub-specialty focus

Outdated Conceptual Models

- Jungian therapy in SA: Well-established
- Cognitive-behavioral therapy in Africa: ?
- Depts of biological psychology in Africa: ?

South African Medical Journal

- Fewer than 5% of articles are in the area of mental health

South African Psychiatric Research

- A significant proportion of SA research is by single authors who publish only once

Few Research-Led Hospitals

- An African story, set in Cape Town ...

Few Research-Led Hospitals

- 120 years ago: Valkenberg Psychiatric Hospital, Cape Town
- 100 years ago: Faculty of Health Sciences, University of Cape Town
- 50 years ago: Dept of Psychiatry, University of Cape Town
- < 25 years ago: Valkenberg linked to University of Cape Town

Groote Schuur Hospital, UCT



Groote Schuur Hospital, UCT



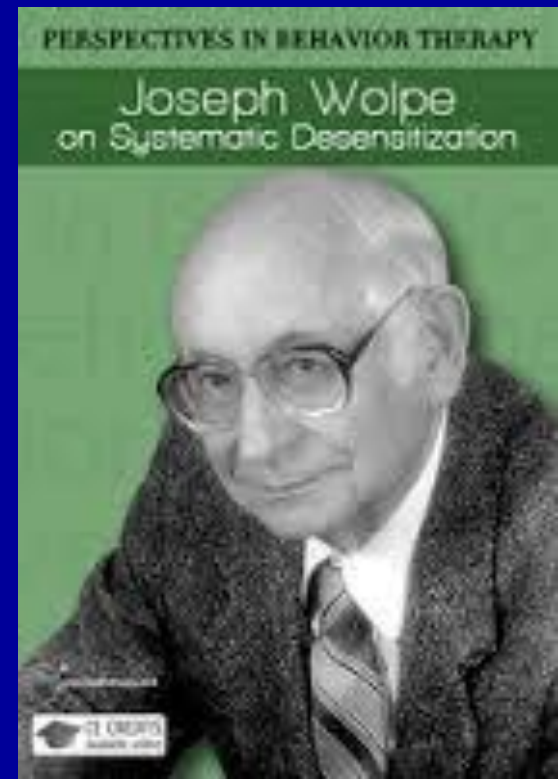
Groote Schuur Hospital

- Bridge to medical school
- Excellent animal facility
- Good basic science



A less well-known translational story

- University of the Witwatersrand
- Excellent animal facility
- Joseph Wolpe works on cat behavior, develops systematic desensitization. Arnold Lazarus coins term “behaviour therapy”.



Valkenberg Hospital

- Far from medical school
- Based in asylum model
- Little preclinical science



Psychiatric sub-specialization in Africa - introduction to a series

- Heart transplant could not have taken place without sub-specialties such as cardiac surgery, cardiac anaesthesia
- Given that there are medical and surgical sub-specialties in LAMIC countries, should there not be psychiatric ones?

Can we afford not to have sub-specialists?

- Partly an argument about parity of external resources - No health without mental health
- Partly an argument about internal resources - We have a growing set of medical knowledge
- Partly an argument about cost-efficiency – Psychiatric sub-specialists can improve work at primary, secondary, and tertiary levels

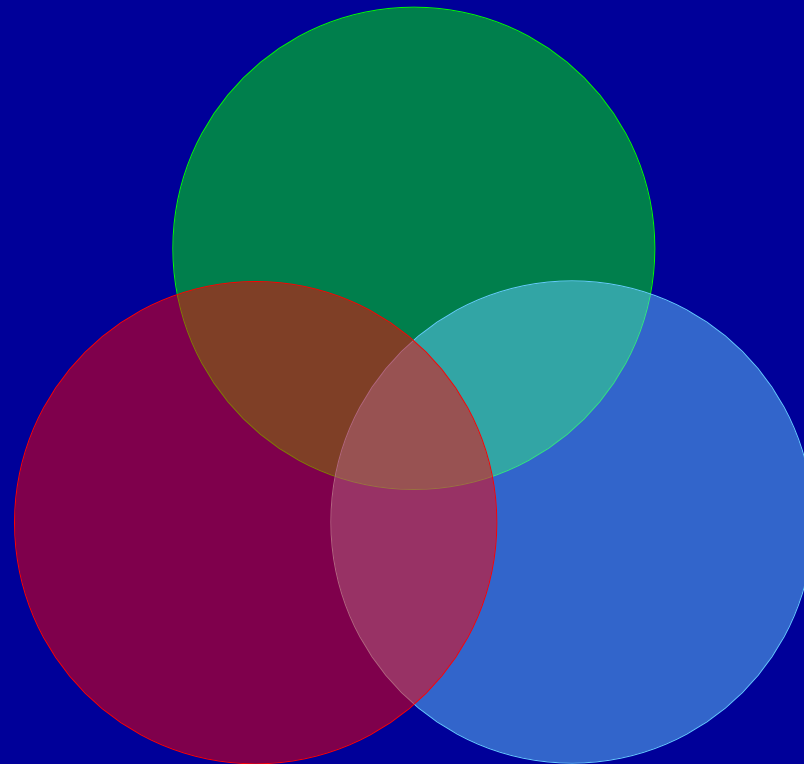
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- Introduction of Neuropsychiatry saw a rise in training, research, services on neuroHIV
- Similar picture for Public Mental Health / Addiction Psychiatry / etc
- But limited funding, and relatively small numbers of sub-specialty trainees

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Clinical Service

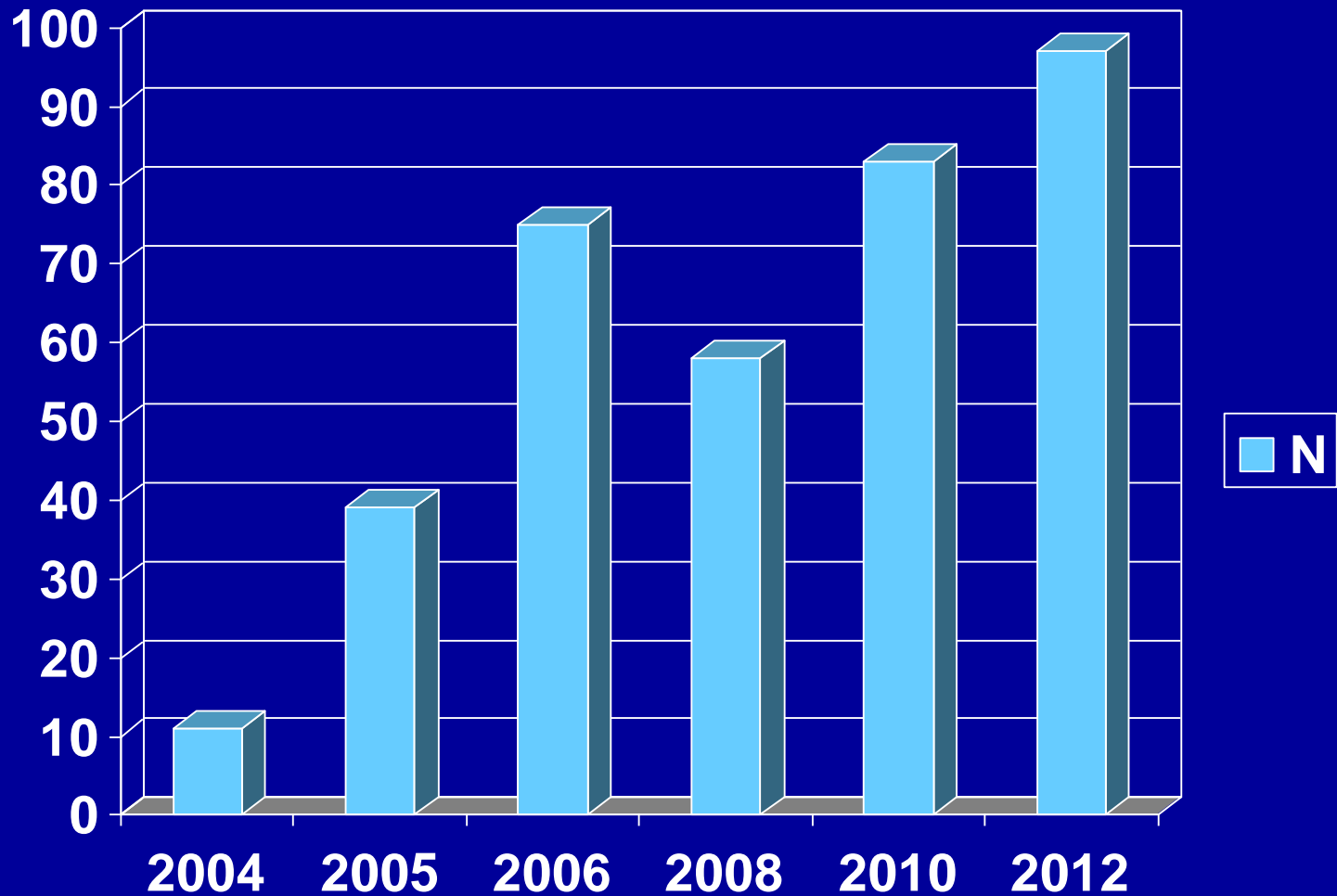
Africa



Education

Research

Research: Outputs



Research: Outputs

- Amongst first studies of animal models of psychiatric disorders in Africa
- Amongst first brain imaging studies of clade C HIV in adults and adolescents
- Amongst first brain imaging studies of infants and children with FAS
- Amongst first neurogenetic studies of mental disorders in African populations

Research: Outputs

- Ongoing HIV work eg psychometrics, neuropsychology, prevention, stigma/adherence, collaborative primary care, psychotherapy, pharmacotherapy
- Ongoing across-Africa collaborative studies eg MH and poverty, PRIME
- Ongoing task-shifting and m-health trials eg AFFIRM
- Ongoing birth cohort study research eg PASS, Gates Foundation

Research Opportunities

Global Mental Health: A New Field?

- Cross-cultural psychiatry has been long established
- Work on behavioral aspects of HIV, neuroHIV has gone global
- A growing focus on burden of disease, on task-shifting, on knowledge translation
- Exemplified in Lancet series on global public health, WHO packages of care, etc

Global Mental Health: New Funding

- UK DFID and Wellcome RFAs
- USA NIH Hubs Grant RFA
- Canadian Grand Challenges RFA

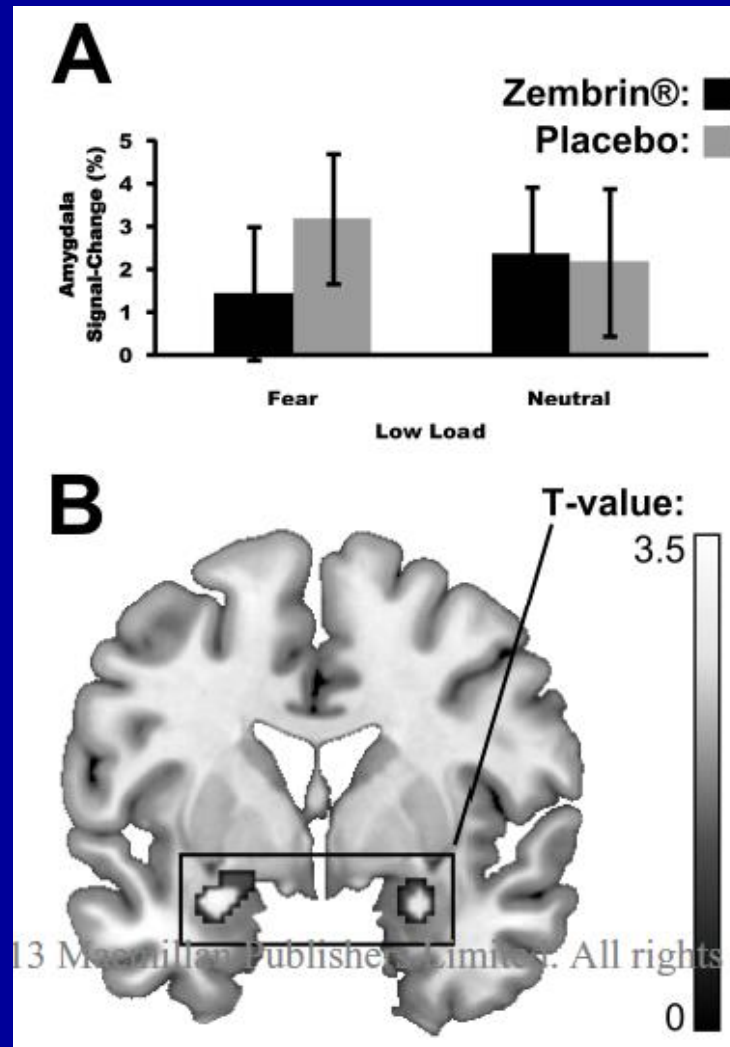
H3A Africa RFA

- Significant investment by NIH and Wellcome in African genetics (including neurogenetics)

Other Relevant RFAs

- Brain disorders in the developing world
- Cultural neuroscience
- NIH-MRC HIV/etc

Unique Plant Kingdoms



(Terburg et al, 2013)

(Somewhat) Unique Animal Populations

- Vervet monkeys (not inbred)
- Chacma baboons (work of Marais)
- Naked mole rats



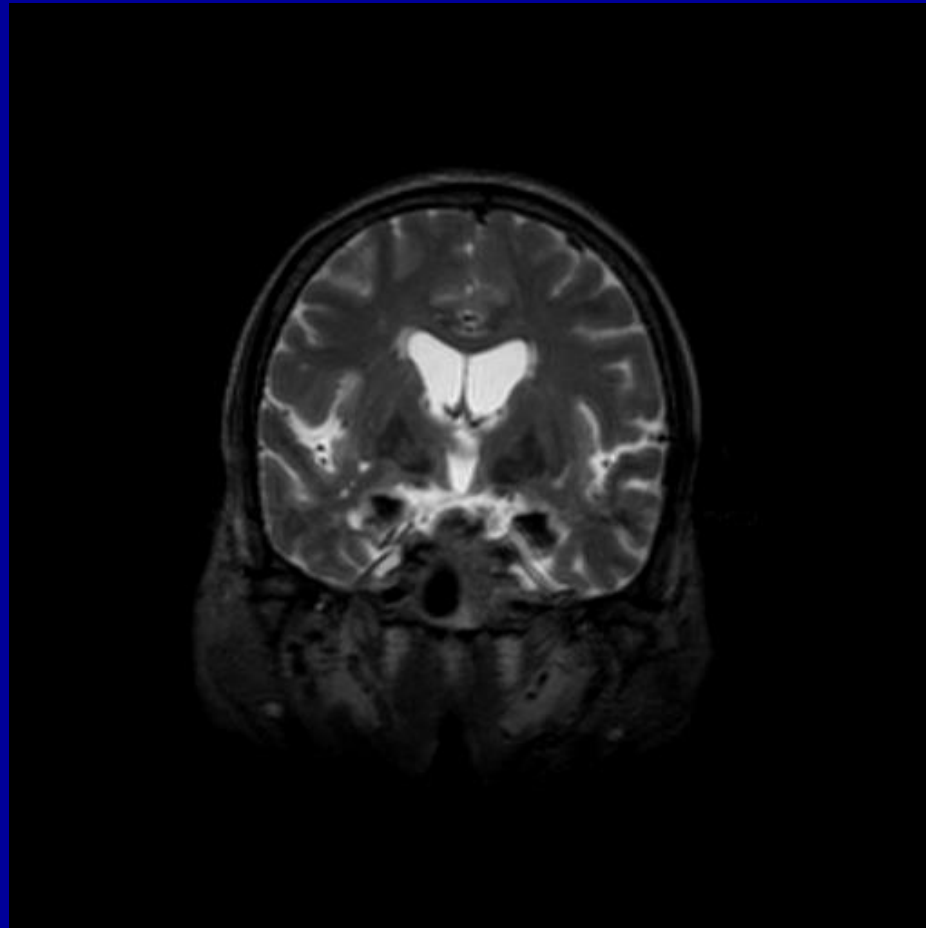
(Somewhat) Unique Societal Features

- Negative – high rates of gender-based violence, social inequality (eg DFID funding)
- Positive – high rates of cell phone penetration, large ARV programs (eg PEPFAR funding)
- Interesting – rapid transformation from apartheid society to liberal democracy (eg Templeton funding)

(Somewhat) Unique Clinical Populations

- Fetal alcohol syndrome
- NeuroHIV (clade C)
- Intersection of HIV with substances (non-injection)

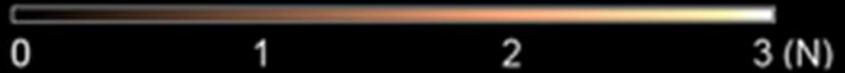
Clinical Studies: A South African example



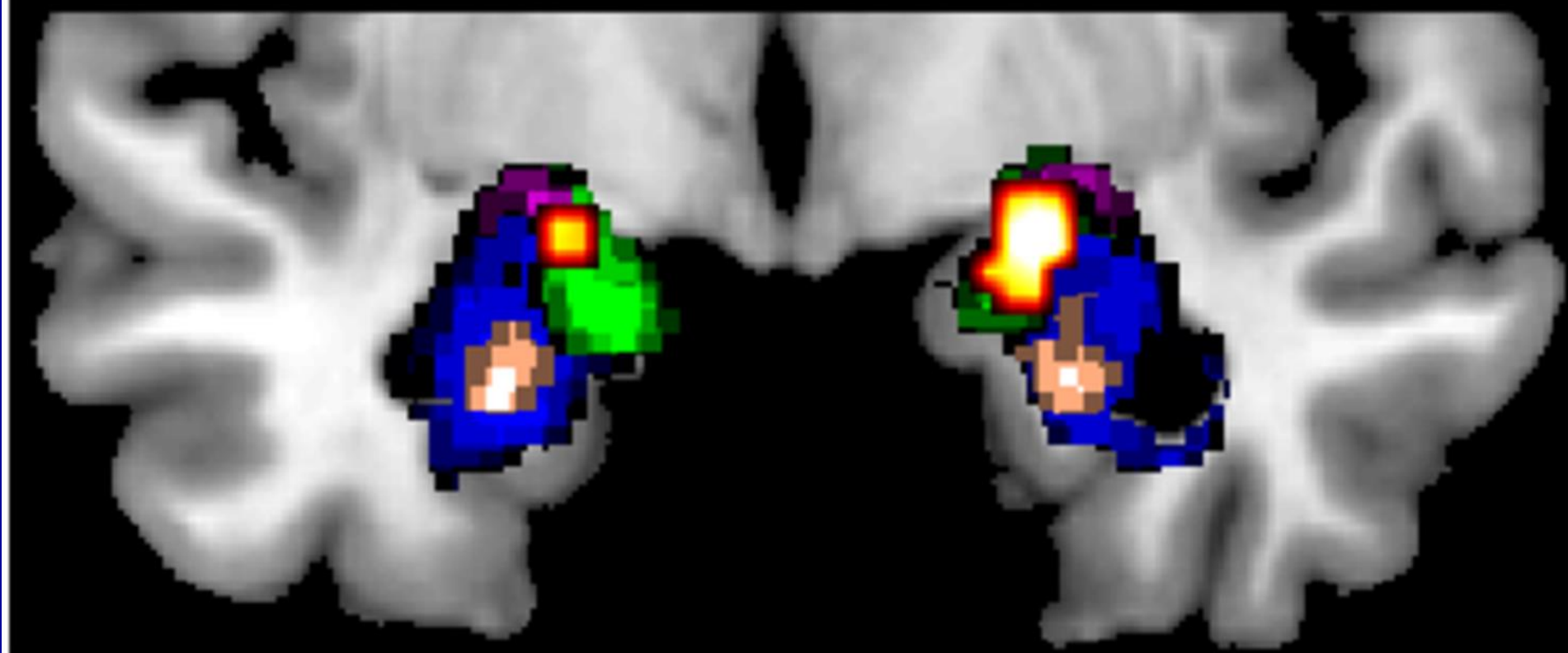
Structure probability:



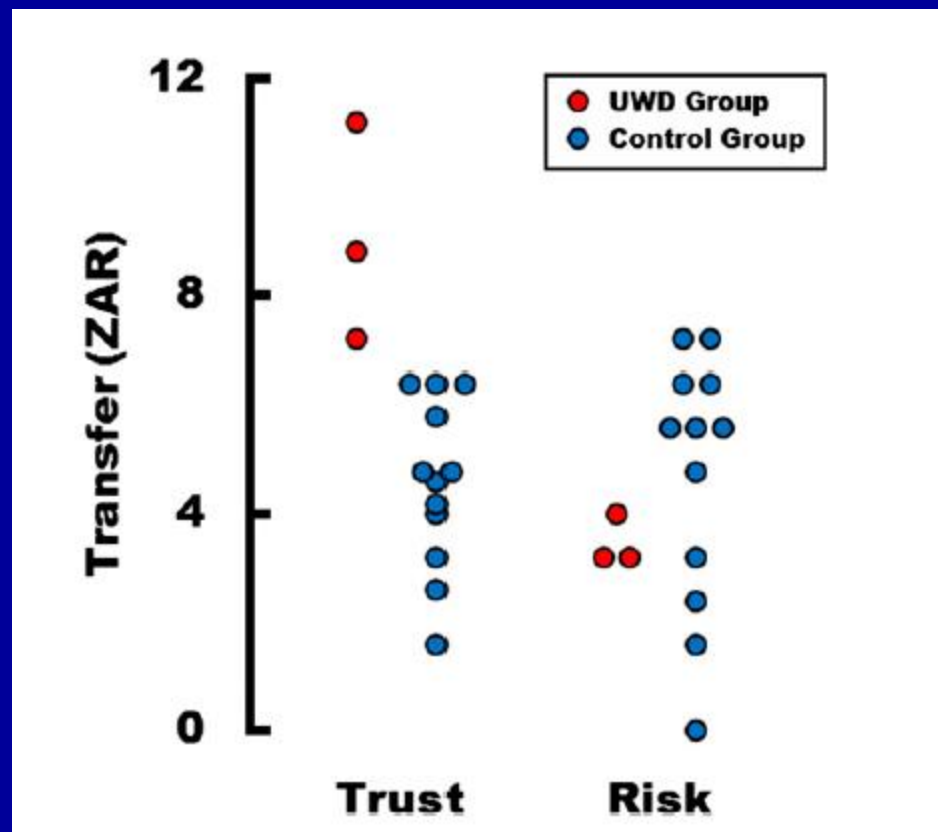
Lesion overlap:



Functional activation:



Clinical Studies: A South African example



(van Honk et al, PNAS, 2013)

How to Prioritize Research?

- Global health RFAs emphasize implementation science
- But there are a range of other important opportunities

Priorities for Global MH Research

- Highest: Health policy and systems research, delivery of existing cost-effective interventions in a low-resource context, and epidemiological research on the broad categories of child and adolescent mental disorders or those pertaining to alcohol and drug abuse questions
- Lowest: Development of new interventions and new drugs or pharmacological agents, vaccines or other technologies

Afro-pessimism?

- Surely LAMIC countries should aim to uncover and address basic mechanisms underlying psychiatric disorders?
- If we do not establish this as a key research priority are we not contributing to Afro-pessimism?

Grand Challenges for MNS

- Identify root causes, risk and protective factors
- Advance prevention and implementation of early interventions
- Improve treatments and expand access to care
- Raise awareness of the global burden
- Build human resource capacity
- Transform health-system and policy responses

Afro-optimism?

- Perhaps the idea that we can contribute to upscaling represents Afro-optimism

Learning from low income countries: mental health

Kwame McKenzie, Vikram Patel, Ricardo Araya

Organising mental health services to harness the support of the family and community may improve outcomes

Overcoming Barriers to Collaboration

- Relatively few dedicated RFAs
- Often a lack of a research culture
- And so a lack of suitable partners
- Language and cultural barriers

Overcoming Barriers to Collaboration

- USA dollar still goes very far
- Growing experience and expertise
- And so a range of eager partners
- English widely spoken in SA

Overcoming Barriers to Collaboration

- Concepts of twinning (or tripling)
eg University of Toronto – Ethiopia
- Need for capacity building at all levels
eg institutional, faculty, postdoc
- Understanding and using local mores
eg importance of the PhD

Overcoming Barriers to Collaboration

- Many examples of good practice
eg Phodiso (Dr Wyatt)

Capacity Building in Global Mental Health Research

Graham Thornicroft, PhD, Sara Cooper, MPH, Tine Van Bortel, PhD, Ritsuko Kakuma, PhD, and Crick Lund, PhD

Overcoming Barriers to Collaboration

Strategy 5. Create national centers for training and research on brain disorders in developing countries. Link these centers with institutions in high-income countries through multicenter research projects, staff exchanges and training, and Internet communication.

Overcoming Barriers to Collaboration

A brain-behaviour initiative for South Africa: the time is right

**Dan J. Stein • Willie Daniels • Robin Emsley •
Brian Harvey • Jonathan Blackburn • Paul Carey •
George Ellis • Nicci Illing • Alan Flisher •
Hanlie Moolman-Smook • Kelvin Mwaba •
Rajkumar Ramesar • Vivienne Russell • Soraya Seedat •
Colin Tredoux • Christopher L. Vaughan •
Bavanisha Vythilingum • James Warwick**



- Bench to bedside and beyond, in a low-middle income context

(Stein et al, 2006)

Overcoming Barriers to Collaboration

Capacity Building in Global Mental Health: Professional Training

Gregory L. Fricchione, MD, Christina P. C. Borba, PhD, MPH, Atalay Alem, MD, PhD, Teshome Shibre, MD, PhD,
Julia R. Carney, BA, and David C. Henderson, MD

The pessimist's mug



The glass is half-empty. Deal with it.

Reasons for optimism

THE WIZARD OF ID

Brant Parker & Johnny Hart



Reasons for optimism

