

Becoming a World-Class Medical Doctor: The Academic Aspect



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Who are Physician-Academics?



- They are individuals with medical training who spend most or all of their time engaged in basic, disease-oriented or patient-oriented research.

Requirements of Physician-Academics?


- Undergraduate (MBBS/MBChB/MD) program
- Postgraduate Fellowship program
- ±PhD Program

Who is a Physician-Academic?



- He/she is a scientist
- He/she is a teacher
- He/she is a clinician

Components of the academia

- 
-
- Teaching
 - Research
 - Training

World Class?



- Widely recognized
- Ranking above all other
- High level of competitive performance
- Best in class
- A model to others

Who is a good teacher?

- I will use some of my teachers to illustrate my concept of a good teacher.
 - Prof Junaid
 - Prof Oginni LM
 - Prof Agbakwuru EA



What are the joys of an academic?

- The Wren feeling:
 - LECTOR, SI MONUMENTUM REQUIRIS CIRCUMSPICE (**Reader, if you seek his monument look around you.**)
 - Christopher Wren designed the St Paul's Cathedral in London
 - He was buried on the premises

What are the joys of an academic?

- The EUREKA feeling:
 - The Joy of Discovery



Archimedes of Syracuse
(c. 287 BC – c. 212 BC)

What are the joys of an academic?

- The DOLLAR feeling:
 - The Joy becoming rich?



Who is a physician-academics?

- Physician who not only
 - apply well-known knowledge for medical care
 - apply advanced new technology to develop new methods for medical diagnosis, treatment and disease prevention
- But are active in making new discoveries

Why do we need physician-academics?

Contributions by past Physician-Scientists

- The eradication of smallpox and the near-eradication of polio.
- The cures for childhood leukemia, Hodgkin disease, and testicular cancer.
- The development of open-heart surgery, of organ and bone-marrow transplantation
- Approaches to disease prevention

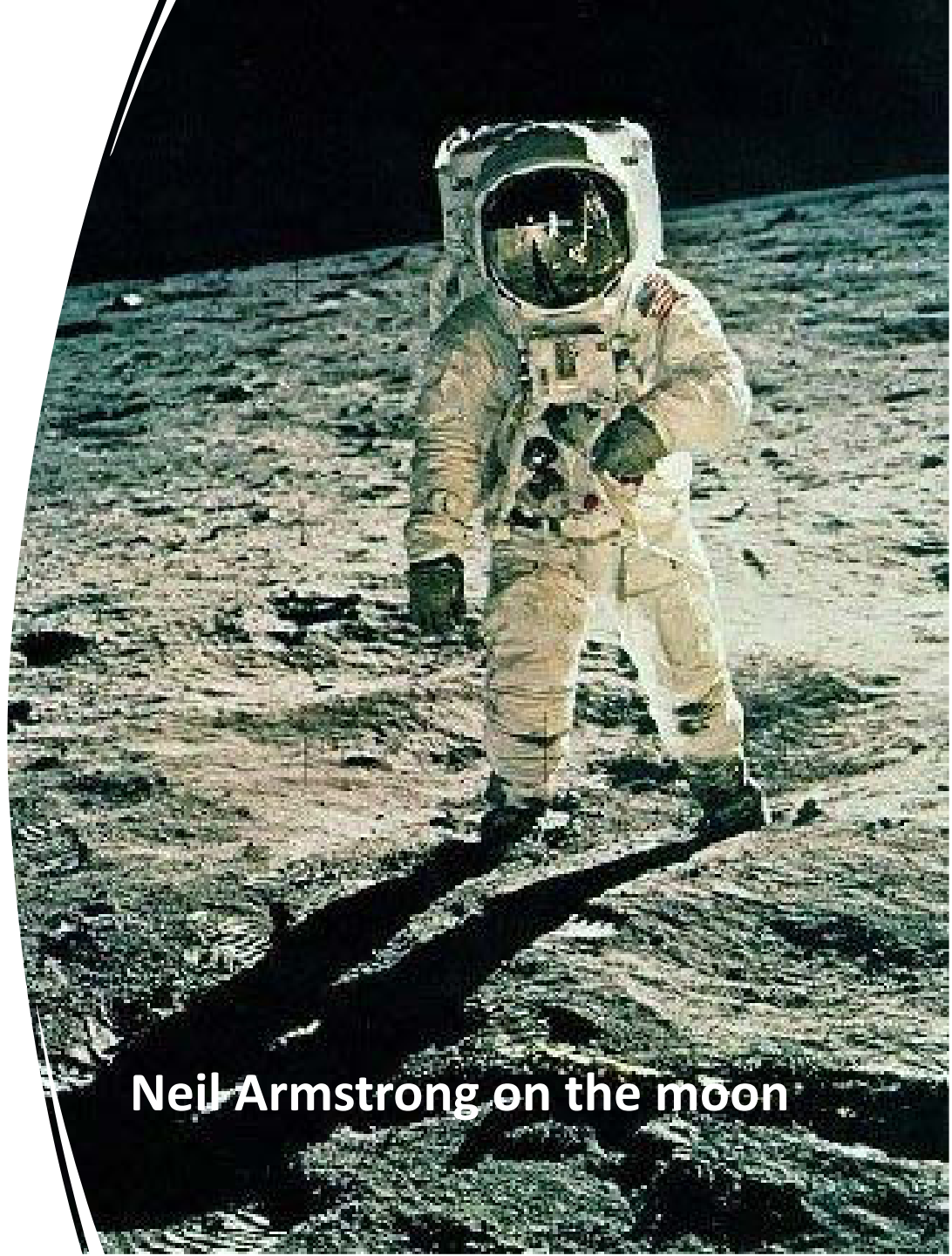


What is clinical research

- Patient-oriented research conducted with human subjects / tissues
 - Mechanisms of human disease
 - Therapeutic interventions
 - Clinical trials
 - Development of new technologies
- Epidemiologic and behavioral studies
- Outcomes research and health services research

Research is also.....

- Often time, research occurs in infinitesimal small steps..
- In other words , your contribution is only a segment of a body of knowledge.....
- Leading to the giant leap



Neil Armstrong on the moon

Research is also:

Sailing uncharted waters



Dragging your feet in swamps



What does it take to become a physician academic?

- **Medical School: 6 years**
 - 1st Year:
 - Biology, Chemistry and Physics
 - 2nd – 3rd Year
 - Physiology, Anatomy and Biochemistry
 - 4th Year
 - Pathology and Pharmacology
 - 5-6th Year
 - Clinical Courses
- **Postgraduate (Fellowship): 4-8 years**
- **Academic mentorship: Varies**

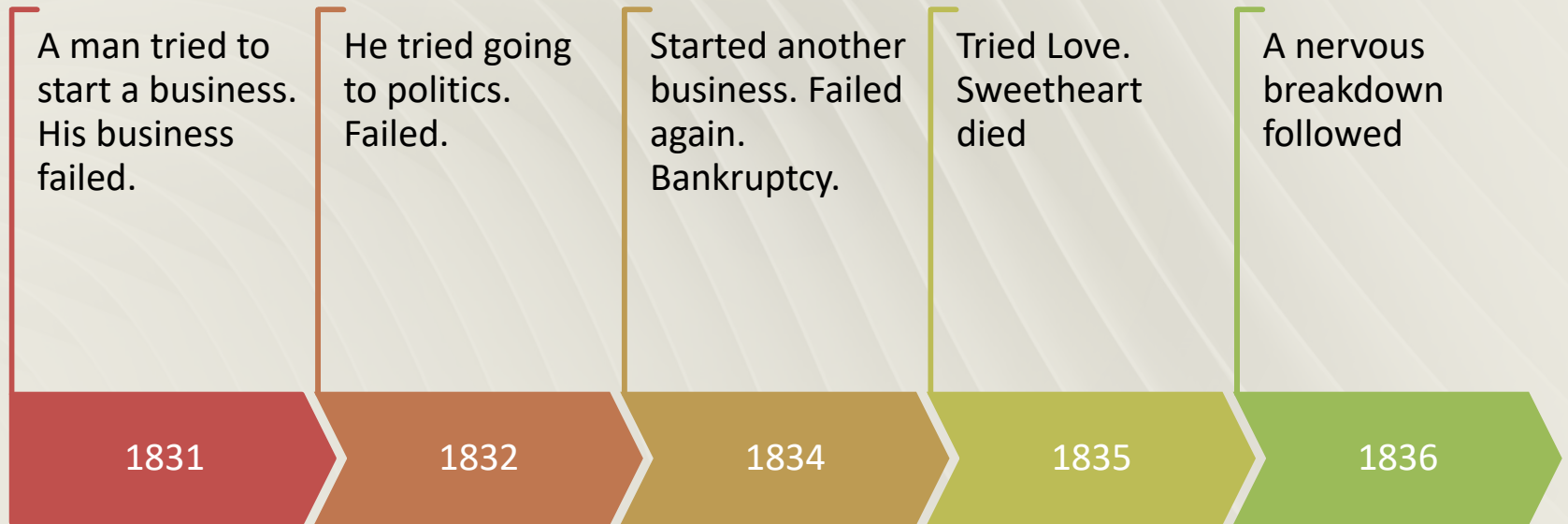
Conventional Medical Training

- What they offer?
 - The ability to implement current medical knowledge for medical diagnosis and treatment of patients
- What they do not offer?
 - The ability to use modern biomedical technology to renovate or create new approaches for Medicare.



**SO, HOW DO YOU BECOME A
WORLD CLASS ACADEMIC?**

Lesson in Perseverance



Perseverance

Tried government once again, and was defeated

1843

Defeated in another election for congress

1848

Defeated in run for vice-presidency

1856

Defeated in elections for congress

1846

Lost in elections for Senate

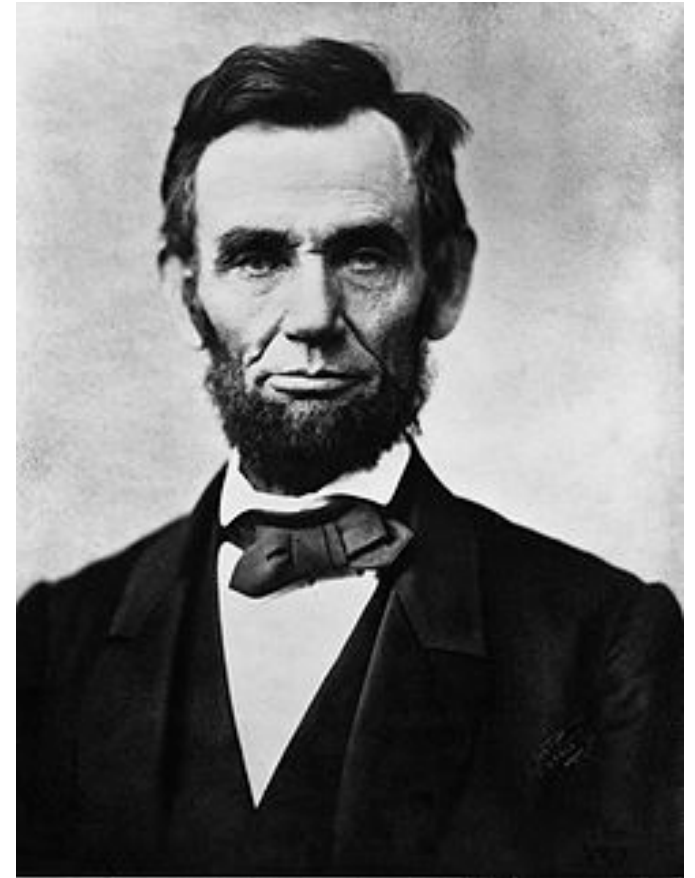
1855

Defeated in elections for Senate

1858

Perseverance

- 1860: Elected President.
- That man was Abraham Lincoln, the best president the USA ever had.



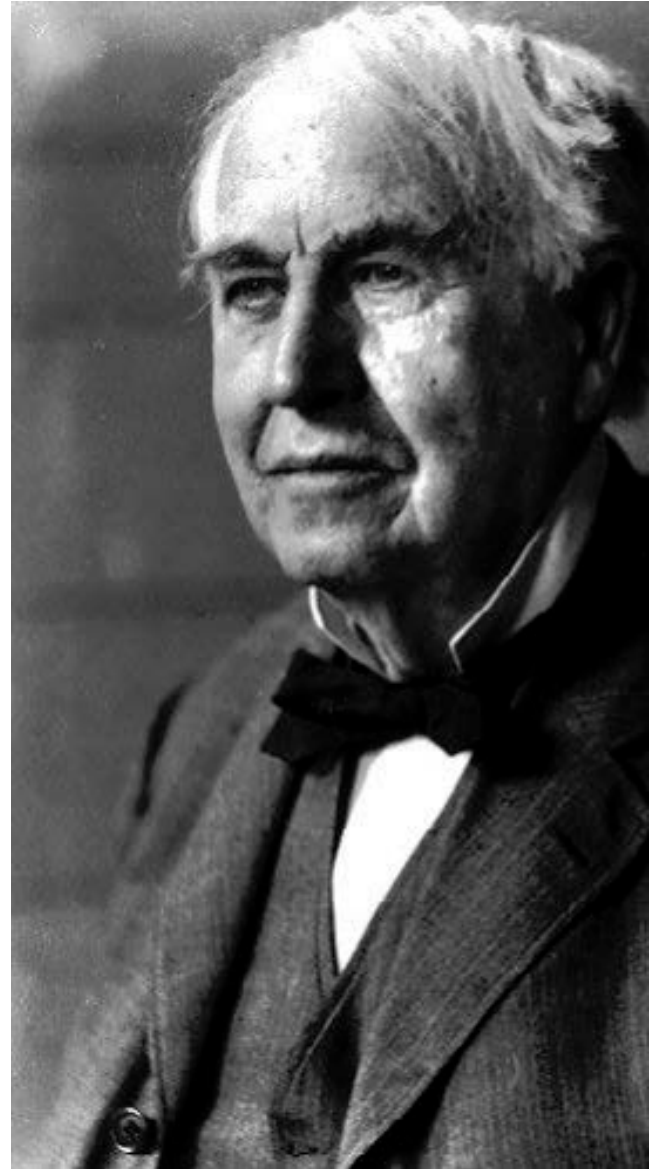


How to do it?

- Hard Work
 - Persevere! Persistence pays off
 - Dedication
 - You need to invest time

Work Hard

- Genius is 99% **perspiration** and 1% **Inspiration.**



Thomas Edison



How to do it?

- Continuous challenge
 - ‘Re’search never stops
- Hard work
 - 10% inspiration
 - 90% perspiration (Reading, searching, soliciting and administrative activities)

How to get the edge?

Simple: Get noticed and published:

- Go into rare diseases/conditions
 - Gastro-cutaneous syndrome
- Find a niche within a common condition
- Large scale studies and trials
 - Treat 1000 patients with disease X with drug Y
- Get published in high impact journals
 - Lancet, New England Journal of Medicine, BMJ, Trauma etc

Pick your subject!

- What is the present body of knowledge in my field of specialization today?
- What are the frontiers?
- How can I add to this body of knowledge?
 - Be original, don't reinvent the wheel.
 - Avoid crowded places



Beware! Every scientific investigation must be built on sound theoretical basis

Garbage in = Garbage out



The Successful Physician- Academic Must *Write*

- PUBLISH OR PERISH!

The Successful Clinical Investigator Must *Write*

- Your ideas are not known or valuable unless they are exposed for consideration and discussion
- Publication track record is essential to remain competitive for sustained funding
- Successful evolution of your own thoughts requires critical feedback

What is your goal?

Get Published in a high-impact journal:

- Me, Myself, and I in Research: My great project and its great outcome.
 - N. Engl. J. Med 2020, 555: 110-119



The NEW ENGLAND
JOURNAL *of* MEDICINE



Some keys to success!

- Start your research early in your career
 - you need to be ahead of your peers
- Talk about your research
 - know your elevator speech!
- Seek collaboration
 - fun and beneficial



Give me some keys to success!

- Ideas are cheap
 - Experiments are not
- Think outside the box
- Low hanging fruit
- Be competent; know your methodology
- Remember that a scientific career is not only a pleasure but also a business

Finish, finish finish

- **A start is easy: but also, you need to finish the race**



Six Cs of clinical research

- **C**linical focus
- **C**ollaboration
- **C**ourage
 - extend your borders do something different
- **C**ritical awareness of the literature
 - Read, read, and read.
- **C**onstructive infrastructure
- **C**ooperative spouses are critical
 - Medical schools are excellent breeding grounds for cooperative spouses

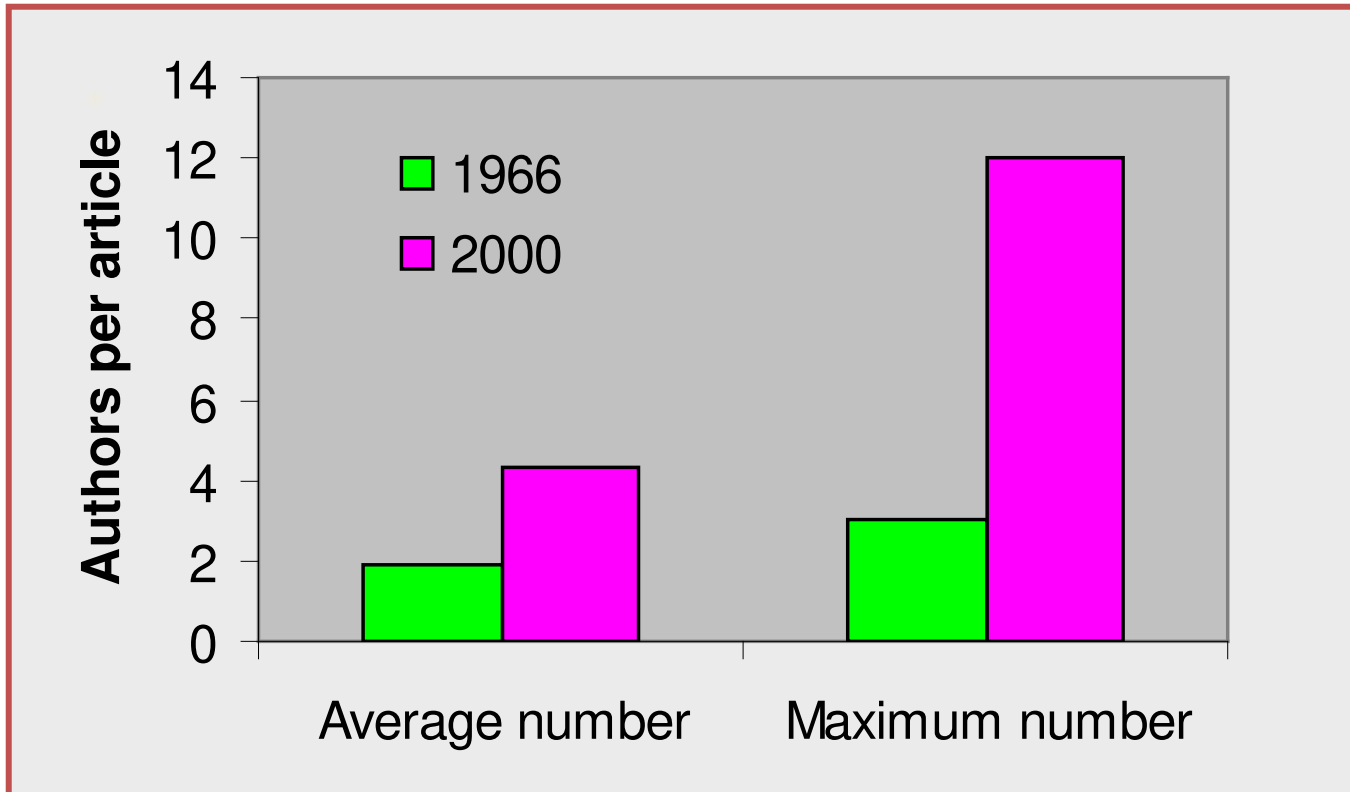


What about collaborations?

- “Collaboration is a recursive process where two or more people or organizations work together in an intersection of common goals — for example, an intellectual endeavor that is creative in nature —by sharing knowledge, learning and building consensus.”

(Wikipedia)

Science Increasingly Depends on Collaboration



*Articles published in *Science*

Mussurakis, 1993, Khan et al. 1999



Great Collaborations

- Watson and Crick
- Holmes and Watson
- Marrie and Pierre Curie
- The Manhattan Project

Rise in Collaborations Has Resulted from Many Factors

- No single person has skills, knowledge, resources to address all research problems (judicious choice of collaborators can save considerable time and money)
- Funding/structure of science favors programs with authorities in each key area
- Breakthroughs are more likely from collaborations across disciplines
- Academia/private sector collaboration favored by legislation, industry, and academia
- Collaborations are easier than they once were

Assessing a Collaborative Opportunity

- Do I need this collaboration in order to move my own work forward? Is there a missing piece that I must have?
- Even if not strictly necessary, will a collaboration help me make a significant scientific contribution?
- Do I have the expertise or resources sought by the other collaborator?
- Can this collaboration be conducted efficiently?
- Is there funding for the work envisioned?
- Can I afford the time?

Assessing a Collaborative Opportunity

- Who Is this person someone with whom I want to collaborate?
- Are our professional and scientific interests compatible?
- Will this person be accessible to me and consistently interested in the project?
- What exactly is being asked of me?
- Can I exclude potential conflicts, either professional or institutional?
- Before making a decision, consider all factors. A good collaboration can take your research in an unexpected course; a bad one will siphon off energy and demoralize you.

McGovern V, et al. Setting Up Collaborations. In: BWF, HHMI. Making the Right Moves: A Practical Guide to Scientific Management for Postdocs and New Faculty, 2004

Personal Qualities of a Good Collaborator

- Honesty: Disclosure, constructive criticism
- Openness: Availability, problem resolution
- Fairness: Giving credit where credit is due
- Industry: Effort, carrying one's weight
- Respect: Appreciation of each contribution
- Reliability: Delivering on time

• McGovern V, et al. *Setting Up Collaborations*. In: BWF, HHMI. *Making the Right Moves: A Practical Guide to Scientific Management for Postdocs and New Faculty*, 2004



Hindrances to Collaboration

- Funding
- Whose lab or facility
- Principal investigator
- Independent ideas
- Research identity

Collaborations Are a Frequent Source of Problems

- Failed start-up because of reluctance to share or work together
- Misunderstandings of what is to be provided by each participant
- Unhappiness with a slow collaborator
- Disagreement about what and when to publish
- Conflicts regarding authorship and credit

• *Cohen J. Science 1995; Kahn JO et al. JAMA 2000; Wilcox LJ. JAMA 1998*



Constraints in Nigeria

- Inadequate infrastructure
- Poor funding
- Poor recognition
- Inadequate training?
- But remember.....
 - Your brain and your enthusiasm is the best antidote to these obstacles



Nigerian achievers

- Prof Osuntokun B O
- Prof Odeku E O
- Prof Akande
- Prof Jaja
- Prof Gureje

A last advice

The toes you step on today
may be attached to the ass
you have to kiss tomorrow!

The other side of Academia

Dirty politics

Cut-throat competition

Roaring egos

rampant jealousy

Nasty or unfounded rumors

Petty grudges

Character assassinations

Betrayals of trust

Theft of work or credit



- “Better human virtues are not more common on the corridors of our universities than on the streets” (Albert Einstein)

The other side of Academia

- Beware! You swim with sharks!



Never, ever
consider doing
this:

- FRAUD
- PLAGIARISM



1994: a scientific breakthrough

- Problem
 - A 29-year-old African woman
 - 5 weeks of amenorrhoea
 - Empty uterus with ectopic pregnancy.
- Intervention
 - Laparotomy with relocation of the ectopic pregnancy into her uterus
- Result
 - Delivery of a healthy 2.7 kg female infant at 38 weeks

BJOG august 1994

- Worldwide media coverage
 - Successful reimplantation of an ectopic pregnancy
- Doctors had been trying to do this for a century.
 - Huge achievement

British Journal of Obstetrics and Gynaecology
August 1994, Vol. 101, pp. 716-717

CASE REPORTS

Term delivery after intrauterine relocation of an ectopic pregnancy

J. M. PEARCE *Consultant*, I. T. MANYONDA *Senior Registrar*, G. V. P. CHAMBERLAIN *Professor*
Department of Obstetrics and Gynaecology, St. George's Hospital Medical School, London

BJOG august 1994

- Malcolm Pearce, a consultant in London
 - World famous expert on ultrasonography in obstetrics
 - Assistant editor to the “*British Journal of Obstetrics and Gynaecology*”
- Senior author on the case report was Geoffrey Chamberlain
 - Editor-in-chief of the journal
 - President of the Royal College of Obstetricians and Gynaecologists
 - Professor and Head of Department



The Expose

- A young doctor at St George's Hospital Medical School had raised questions about the case report
- An investigation was promptly started and showed:
 - The patient did not exist.....
- Among studies investigated back to 1989 - four others appeared to be fraud



The confession

- Geoffrey Chamberlain:
 - I did not have a clue!
 - He had not known that the work was fraudulent
 - “Common within medicine have their name on papers when they had not done much”



What happened next?

- Paper was retracted
- Questions about other articles
- Pearce was de-registered by the General Medical Council of Britain
- Chamberlain retired or resigned from all his positions: a terrible end to a distinguished career
- His crime: gift authorship.

An illustrative point

Peer reviewed?

Received 26 April 1994
Accepted 29 April 1994

Finally

- Sometimes the seemingly wrong result may be the beginning of a great discovery
- The most exciting phrase to hear in science, the one that heralds the most discoveries, is not "Eureka!" but "**That's funny...**"

Isaac Asimov

To ask Questions, please
join the forum at
www.oluwadiya.com

