



The Art of Crafting an Abstract (sort of...)

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Why the quality of your abstract is important? (1)

For each person reading your paper or hearing your presentation, 1000-fold more are reading your title and abstract. Thus, you should dedicate 1000-fold more time to title and abstract than to the rest of your paper/presentation.




Why the quality of your abstract is important? (2)

1. Editors read abstracts **before sending out papers for review;**
2. Reviewers to get a **first impression about the quality** of a paper.
3. Readers **decide whether to read the entire article.**
4. Conference decide whether **to assign slots for talks or posters.**
5. Conference participants decide whether **to come to your session.**
6. Scientists and clinicians **check the state of knowledge on a topic.**
7. Scientists **look for support to their theory/hypothesis/finding.**
8. Words in abstracts are also used **data mining.**



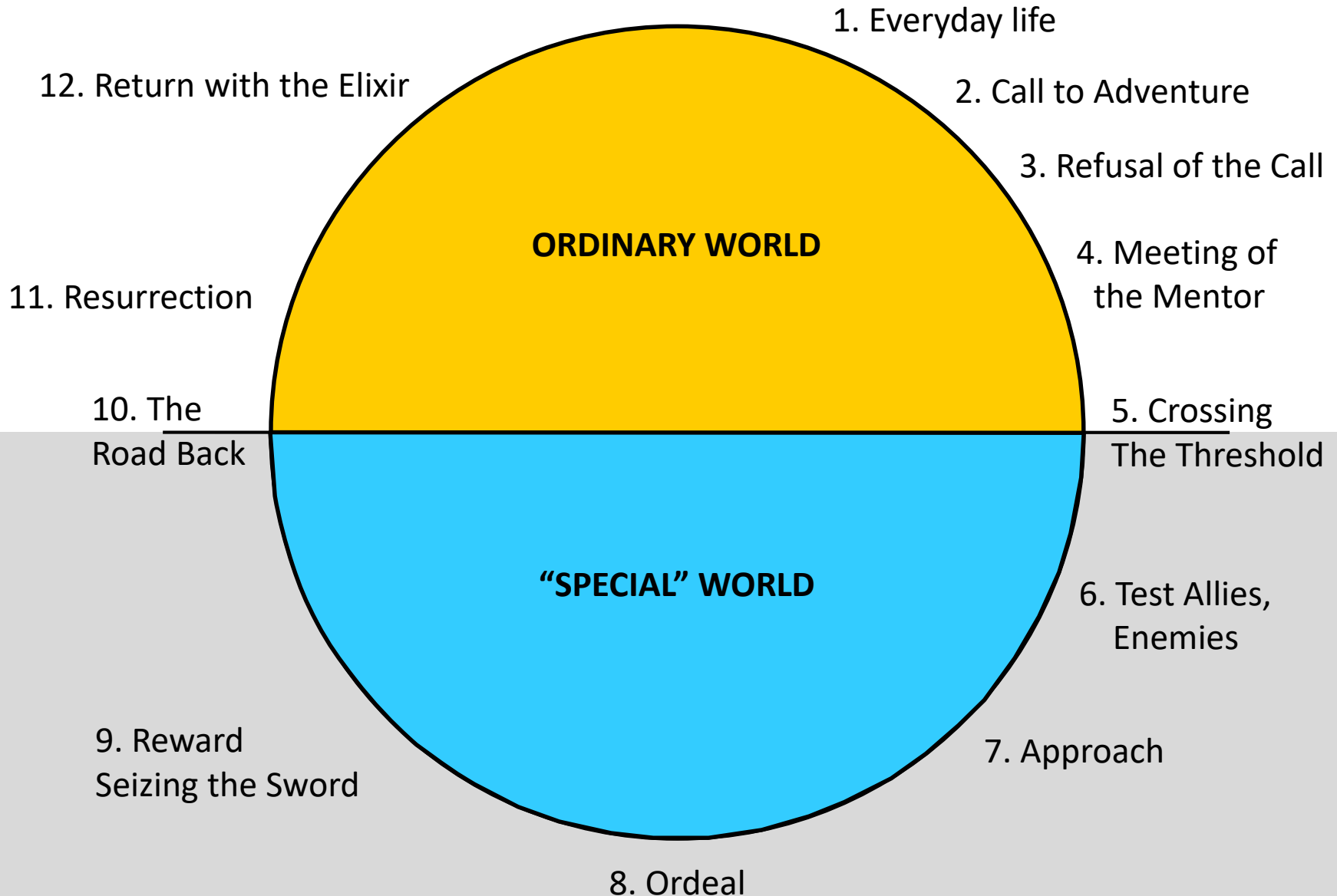
Where every Cinderella story comes true.



**Write a story . . tell a story
People love stories, it's a fact, even scientists!**

DisneyParks.com
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The Structure of a Story (Joseph Campbell)



Odyssey



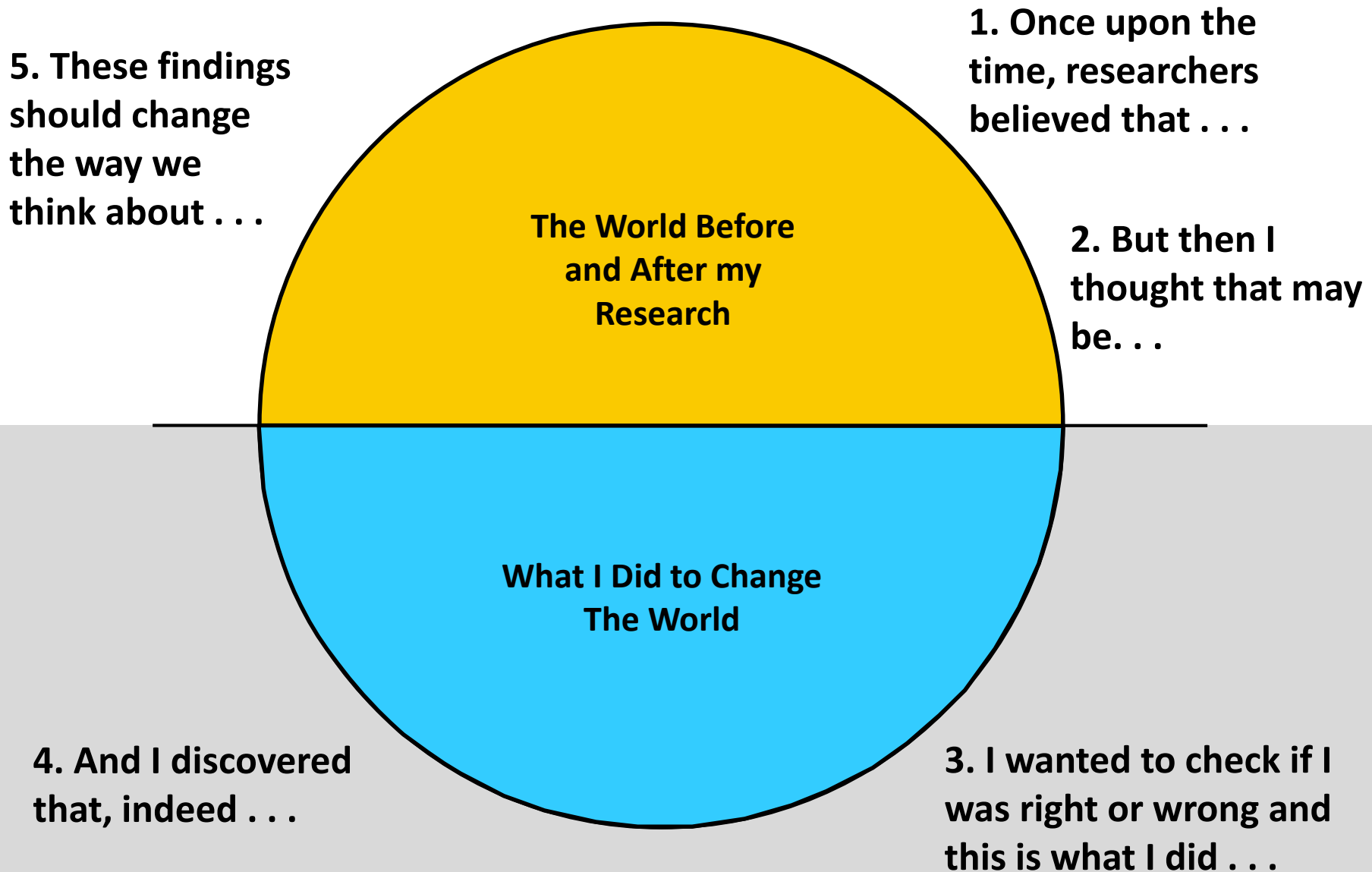
- **Ordinary World** - the peaceful island of Ithaca
- **Call to Adventure** - Odysseus is summoned to join Agamemnon attack the city of Troy to retrieve the wife of Menelaus, Helen, after she is taken by Paris
- **Refusal of the Call** – the beautiful homeland and his newly born son
- **Crossing Threshold** - the Trojan War
- **Mentor** - Athena, Zeus bright-eyed goddess daughter
- **Tests, Allies, Enemies** - The journey home and encounters with Circe, Polyphemus, the sirens and other
- **Illusion** - Arrival home, more challenge (the bow)
- **Ordeal** - reunion with Penelope/Telemachus
- **Return with Elixir** - Restores peace and tranquility to his house and the King of Ithaca



- **Call to adventure** - Ben Kenobi asks Luke to help him answer Leia's call and defeat the empire
- **Refusal of the call** - Luke says he has to stay and help with the harvest
- **Supernatural aid** - The Force
- **Crossing threshold** - Flying away from the planet to the center of the galaxy
- **Road of trials** - love for Leia, temptation from “dark side”
- **Atonement** - with the father and the apotheosis of becoming a Jedi etc. etc. etc.
- The **mentor** (Ben Kenobi), the **oracle** (Yoda)
- **Victory and coming home**



The Story in an Abstract (Luigi's version)





Seriously? OK, this is what you do:
Think about putting stuff into the right drawers.

Introduction

Why did you decide to do this study?

Why is this research important?

What specific issue are you trying to better understand or solve?

What is your hypothesis?

Methods

Who are the subjects in your study?

What are the main variables that you collected?

How did you check reliability and validity of your measures?

How did you process and analyze your data?

Results

Describe your main results (give numbers and statistics).

Was your hypothesis or argument supported?

Any sensitivity analysis?

Discussion

Give your conclusion.

What are the implications of your work?

Are your results general or very specific?


What further research is needed?





Where do I start?


- At first, don't be overly concerned about the length. Just make sure you include all the key information.
- Then, take your draft and start crossing out words, phrases, and sentences that are less important.
- Look for places where you can combine sentences in ways that shorten the total length.
- Put it aside for a while, then come back and re-read, you'll probably find new places to cut.
- Before you know it you will have a tightly written abstract.



Start by writing the main facts without thinking of length or counting words.

Revise early and OFTEN.

1. Start by writing a draft focusing on section organization, connection between sections, and **equilibrium of length between different parts**. As a rule of thumb:
 1. Introduction 15%
 2. Methods 30%
 3. Results 40%
 4. Conclusions 15%
2. Eliminates words and sentences that are not essential. Use short but complete sentences. Avoid choppy, disconnected sentences (telegraphic sentences).
3. If you are within words limits, stop here, and send to co-authors.



Start by writing the main facts without thinking of length or counting words.

Revise early and OFTEN.

1. **If the abstract is still too long**, you need to give up content! **It is better to reduce content than to sacrifice clarity.** Create a hierarchical order of priority between sentences.
 1. **Priority 1** - What we know, what gap we want to address; hypothesis; participants, main variable/s; results (with numbers and statistics); implications.
 2. **Priority 2** – Literature review; Statistical analysis; Secondary and sensitivity analyses; generalizability of findings.
 3. **Priority 3** – Drawbacks and advantages and any other additional information.

Start by eliminating sentences with priority 3 and 2. Never (never ever) eliminate sentences with priority n. 1. If after eliminating sentences with priority 2 and 3 the abstract is still too long, **ask for help!**

Titles as a meta-abstracts, “abstracts of abstracts”

You should be able to describe your main findings with a sentence. **Try hard!** It is good exercise and help you get to the essential your research question. Write this sentence down, shorten and rearrange words to create an effective title.

Some scientists prefer “detective stories” title, i.e. titles that do not reveal the study findings, but . . . I don’t like them.



Titles as a meta-abstracts, “abstracts of abstracts”

For example:

This research demonstrates that repeated episodes of ischemia-reperfusion in patients with peripheral artery disease trigger intense and frequent muscle repair episodes that exhaust the proliferative potential of satellite cells.

Title

Assemblage: 1. Episodes of ischemia-reperfusion - 2. peripheral artery disease - 3. frequent muscle repair episodes – 4. proliferative potential of satellite cells.

Rearrangement: Ischemia-reperfusion in peripheral artery disease exhausts the repairing potential of satellite cells.



RULES

That (in my humble opinion) SHOULD NEVER BE BROKEN!!!!

- Avoid using “*This abstract reports. . .it is suggested that. . .it is believed that.*” . . focus on the science.
- Avoid **jargon** at all costs. Write for intelligent readers not specialists;
- Write your abstract from scratch! **Do not “cut and paste”**.
- Use **short, full sentences**, without removing articles or connections to save space.
- Avoid **abbreviations and acronyms**. . . they drive readers crazy.
- Use **key phrases and words**. You want appropriate queries on online databases to find your abstract or article.
- Try to use 5 important words or phrases key to your research in your abstract.
- Use real information. This is like “true in advertising”. Citing material that is not in your work will mislead readers and ultimately lower your viewership.

RULES

That (in my humble opinion) CAN BE BROKEN!!!!

- Tell a story.
- For example, people say that you should not use tables, figure or references, but in some cases they can be fine!!!!
- Try not to repeat the words in the title; the title is part of the abstract, save words!!
- Modern scientific writing prefers the active voice, but you can use the passive voice if this approach requires less words. Generally, it is suggested that “I” or “We” should not be used, but I strongly disagree with this.
- Avoid "boilerplate sentences" which take up room and provide no real information (ex: "Policy implications are discussed" or "It is concluded that," etc.).

The 4 Cs for Abstracts

Complete it covers the major parts of the research

Concise it contains no excess wordiness or unnecessary information

Clear it is readable, well organized, and not contain too much jargon

Cohesive it flows smoothly between the parts

And NOW

**one good abstract,
one very standard**

Body-Mass Index and Mortality among Adults with Incident Type 2 Diabetes

Deirdre K. Tobias, Sc.D., An Pan, Ph.D., Chandra L. Jackson, Ph.D., Eilis J. O'Reilly, Sc.D., Eric L. Ding, Sc.D., Walter C. Willett, M.D., Dr.P.H., JoAnn E. Manson, M.D., Dr.P.H., and Frank B. Hu, M.D., Ph.D.

Background

The relation between body weight and mortality among persons with type 2 diabetes remains unresolved, with some studies suggesting decreased mortality among overweight or obese persons as compared with normal-weight persons (an “obesity paradox”).

Methods

We studied participants with incident diabetes from the Nurses' Health Study (8970 participants) and Health Professionals Follow-up Study (2457 participants) who were free of cardiovascular disease and cancer at the time of a diagnosis of diabetes. Body weight shortly before diagnosis and height were used to calculate the body-mass index (BMI, the weight in kilograms divided by the square of the height in meters). Multivariable Cox models were used to estimate the hazard ratios and 95% confidence intervals for mortality across BMI categories.

Results

There were 3083 deaths during a mean period of 15.8 years of follow-up. A J-shaped association was observed across BMI categories (18.5 to 22.4, 22.5 to 24.9 [reference], 25.0 to 27.4, 27.5 to 29.9, 30.0 to 34.9, and ≥ 35.0) for all-cause mortality (hazard ratio, 1.29 [95% confidence interval {CI}, 1.05 to 1.59]; 1.00; 1.12 [95% CI, 0.98 to 1.29]; 1.09 [95% CI, 0.94 to 1.26]; 1.24 [95% CI, 1.08 to 1.42]; and 1.33 [95% CI, 1.14 to 1.55], respectively). This relationship was linear among participants who had never smoked (hazard ratios across BMI categories: 1.12, 1.00, 1.16, 1.21, 1.36, and 1.56, respectively) but was nonlinear among participants who had ever smoked (hazard ratios across BMI categories: 1.32, 1.00, 1.09, 1.04, 1.14, and 1.21) ($P=0.04$ for interaction). A direct linear trend was observed among participants younger than 65 years of age at the time of a diabetes diagnosis but not among those 65 years of age or older at the time of diagnosis ($P<0.001$ for interaction).

Conclusions

We observed a J-shaped association between BMI and mortality among all participants and among those who had ever smoked and a direct linear relationship among those who had never smoked. We found no evidence of lower mortality among patients with diabetes who were overweight or obese at diagnosis, as compared with their normal-weight counterparts, or of an obesity paradox. (Funded by the National Institutes of Health and the American Diabetes Association.)

And NOW

**one problematic abstracts
(the paper was fantastic...
my first paper!)**

G Ital Cardiol. 1983;13(3):197-200.

[A case of postinfarction spontaneous angina: physiopathological study of the therapeutic effectiveness of intra-aortic balloon pumping]. [Article in Italian]

Ferrucci L, Greppi B, Calamandrei M, Conti A, De Alfieri W, Di Bari M, Pini R, Vannucci A, Vassanelli C, Marchionni N.

A 46-year-old patient showed spontaneous angina with anterior S-T segment depression 30 hours after an inferior acute myocardial infarction. Myocardial ischemia, which was resistant to drug therapy and induced acute left ventricular failure, was promptly reversed by intra-aortic balloon pumping (IABP). Coronary angiography demonstrated diffuse, severe atherosclerotic disease. Efficacy of IABP in this case of spontaneous angina might be ascribed to an increase of the coronary cross-sectional area in response to the increased intraluminal pressure ("passive vasomotion").

Finally!!!!

**my Absolutely Favored
Abstracts**

FAST TRACK COMMUNICATION

Can apparent superluminal neutrino speeds be explained as a quantum weak measurement?

M V Berry¹, N Brunner¹, S Popescu¹ and P Shukla²

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² Department of Physics, Indian Institute of Technology, Kharagpur, India

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Abstract

Probably not.

PACS numbers: 03.65.Ta, 03.65.Xp, 14.60.Pq

If recent measurements [1] suggesting that neutrinos travel faster than light survive scrutiny, the question of their theoretical interpretation will arise. Here we discuss the possibility that the apparent superluminality is a quantum interference effect, that can be interpreted as a weak measurement [2–5]. Although the available numbers strongly indicate that this explanation is not correct, we consider the idea worth exploring and reporting—also because it might

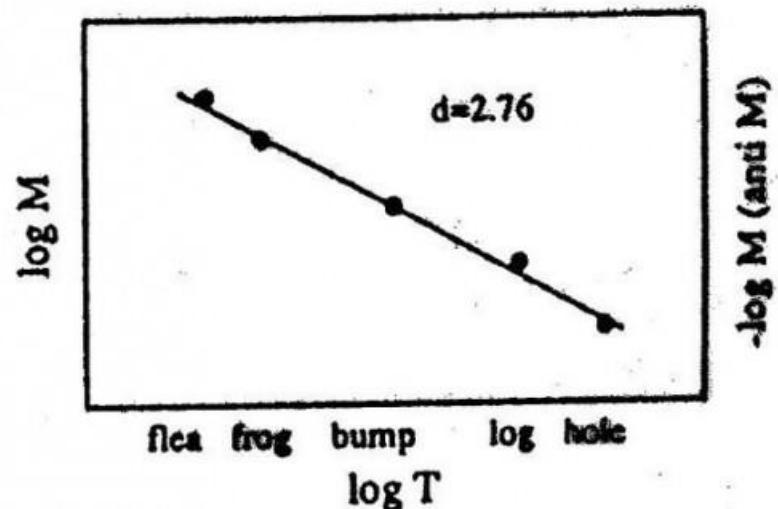
This abstract was in AGU meeting from the early '90s. I wonder if this is commentary about the late '80s/early '90s fractal craze, or simply some scientists having a bit of fun with their peers. Either way, I love it.

This abstract is indeed authentic: 1991 EOS Trans. AGU Vol 72, No 27-53, p456

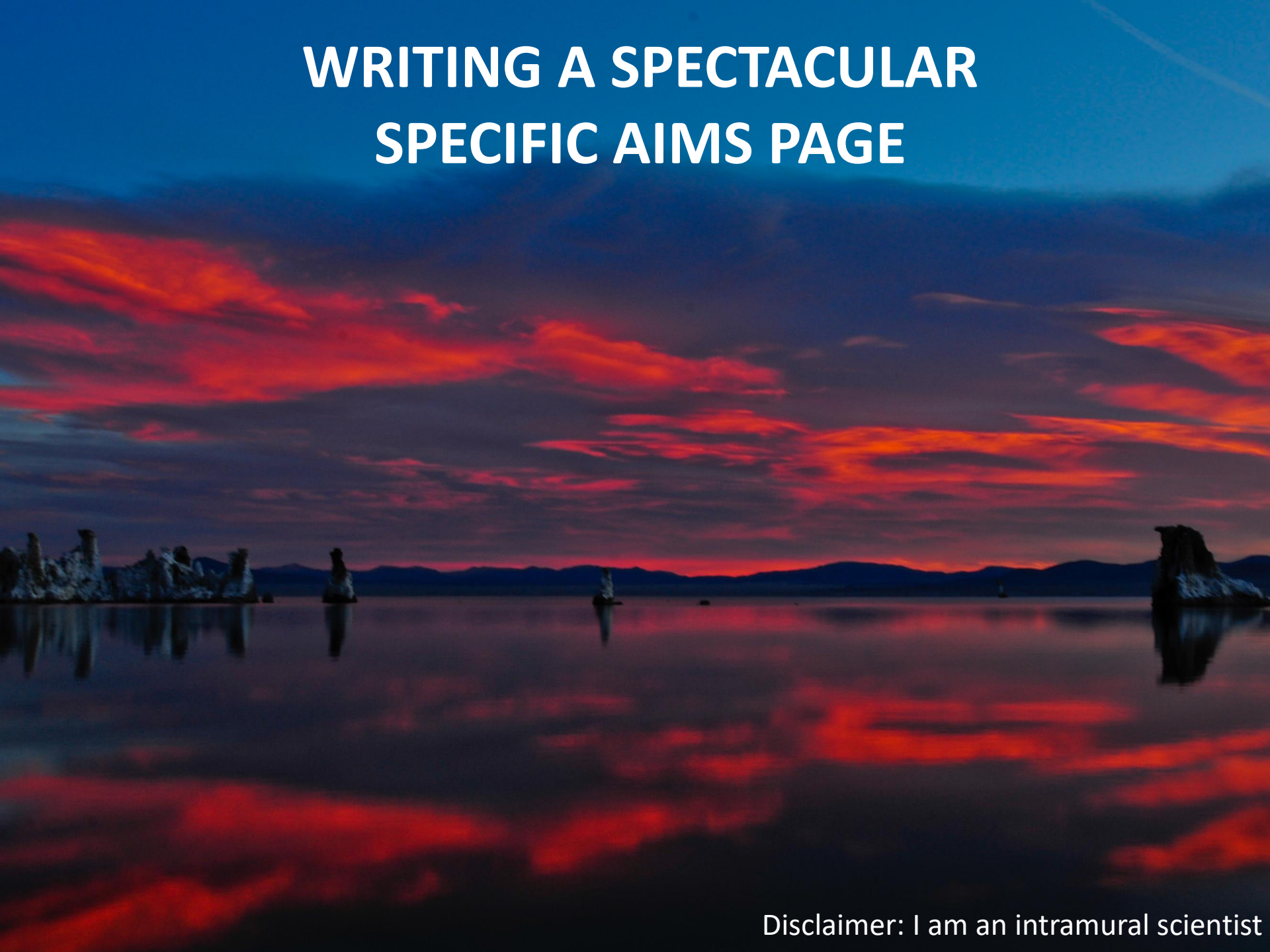
Fractal Analysis of Deep Sea Topography

Marc Spiegelman and Chris Scholz (Lamont-Doherty Geological Observatory, Palisades, NY 10964; 914-359-2900)

Recent high resolution mapping of deep-sea topography shows clearly that there's a hole in the bottom of the sea. To repeat, there's a hole in the bottom of the sea. There's a hole—there's a hole—there's a hole in the bottom of the sea. Moreover, more careful analysis indicates that there is a multitude of scale lengths in the bathymetric data. For instance, there's a log in the hole in the bottom of the sea. There's a bump on the log in the hole in the bottom of the sea. There's a frog on the bump on the log in the hole in the bottom of the sea. And there's a flea on a frog on a bump on a log in a hole in the bottom of the sea. There's a flea—there's a frog—there's a hole in the bottom of the sea. Figure 1 shows the 5 orders of magnitude inherent in the data plotted in log-log space and indicates a fractal dimension $d = 2.76$. Plotting in log-frog space gives $d = 2.5$. No attempt has been made to understand this result.



WRITING A SPECTACULAR SPECIFIC AIMS PAGE



Disclaimer: I am an intramural scientist

Main Points (1)

- Most important part of the application
- Subliminal messages!!!
 - This is a good/ important idea (advances the science)!
 - Main hypothesis is sound and rooted in the literature!
 - Aims are clear cut, feasible, not inter-dependent
 - You and your team have the skills to do it!
 - You will get a result (negative or positive)!

REMEMBER

The aims page provides an overview of the entire project and should convey your intellectual contribution.

Main Points (2)

The specific aims page should read like a 'legal brief'- the whole point of that one page is to convince the “jury” of the importance of the scientific question being addressed.



Main Points (3)

- I would spend as much time on the specific aims page- as on the entire rest of the grant application.
- Essential to 'hook' reviewers by the end of that page.
- Aims should be clear and specific in all aspects.
- Read and re-read the aims page- get others- both experts and non-experts to read it and give you feedback on whether it is a) clear; b) convincing.

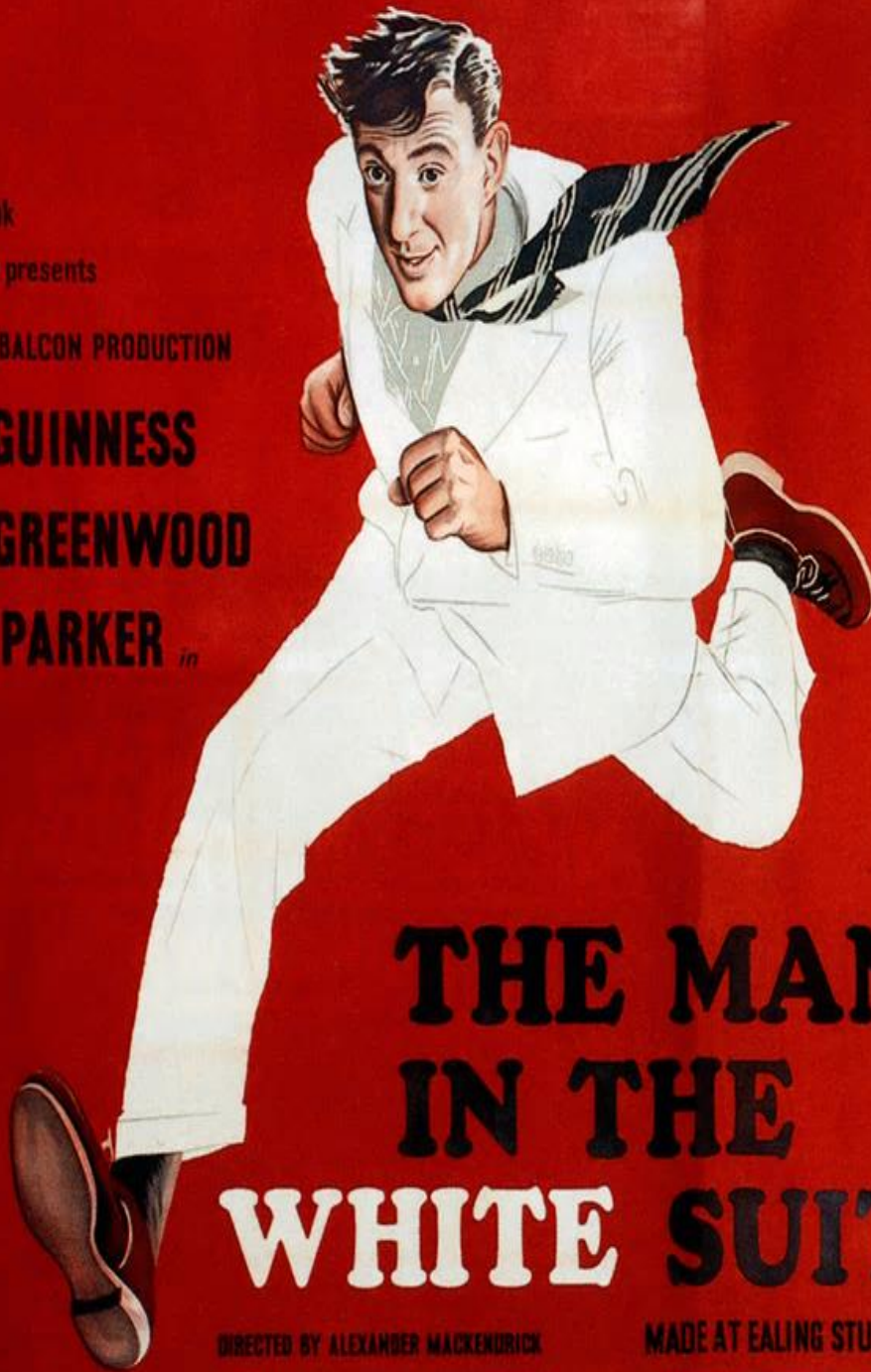
J. Arthur Rank
Organisation presents

A MICHAEL BALCON PRODUCTION

ALEC GUINNESS

JOAN GREENWOOD

CECIL PARKER *in*



THE MAN IN THE WHITE SUIT

DIRECTED BY ALEXANDER MACKENDRICK

MADE AT EALING STUDIOS

Wearing white
clothes in the
summer
maintains your
body cooler!!

(Not an
hypothesis)



Would wearing white
clothes maintain
your body cooler in
the summer?



Would wearing white clothes maintain your body cooler in the summer?

Primary aim 1.

We will test the hypothesis that men wearing a white suit will maintain a skin temperature significantly lower than men wearing a black suit when exposed to the same environment.

Secondary aim n. 1

We will test the hypothesis that men wearing a white suit will self-report a significantly higher score at the “feeling cooler scale’ compared to men wearing a black suit

Exploratory aim n. 1

We will test the hypothesis that as the day progress and the suits become dirty and the sun goes down, the difference between the two groups will be reduced and no longer statistically significant.

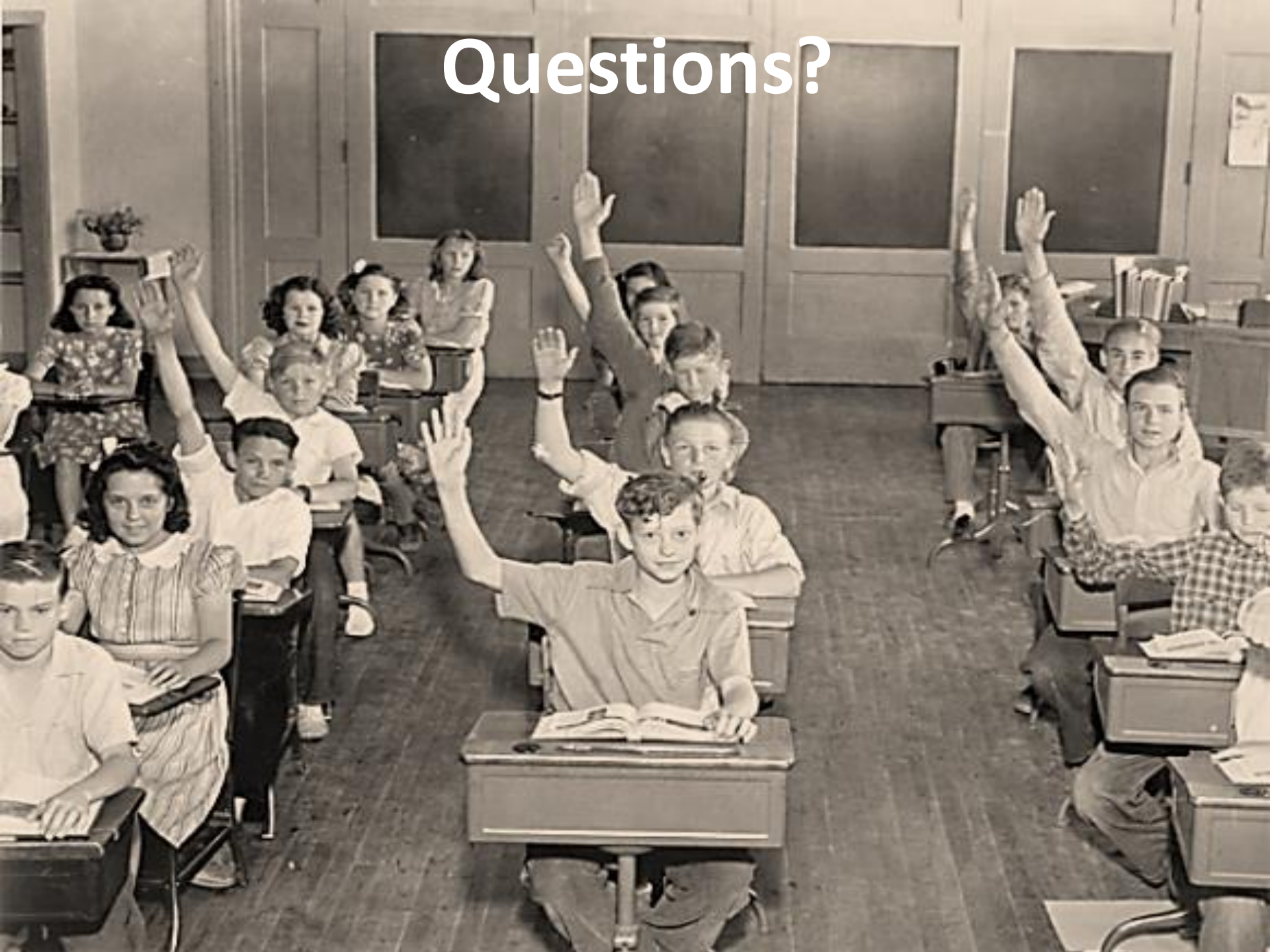
Explain the overall significance of the project, why it's an important project and how it will advance the state of the science.

Reviewers need to like your idea, be convinced that the question is important, that it can be addressed, and that you have the skills to address it.

Write clearly, no mistake. You are asking for a lot of money (a small RO1 is the same cost of a Lamborghini)!!!!

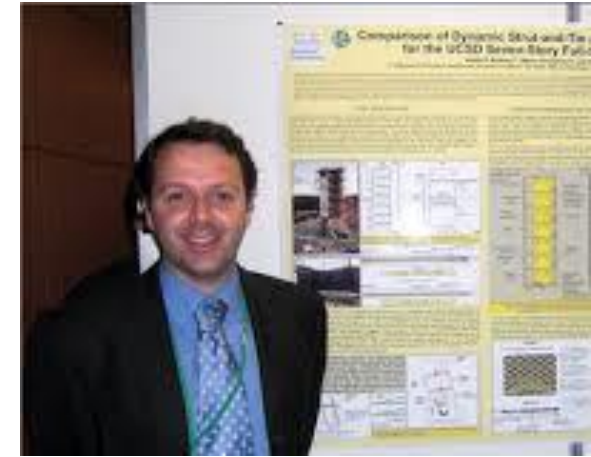


Questions?



From Abstract to Poster

- Communicates your research visually
 - A compromise between slides and a manuscript
 - A painting in a museum
 - Invite people to stop
 - Make it for you to explain
- Attracts & holds attention
 - Aim for 300-500 words (max 5 min).
 - Initiates discussion
 - Summarize your finding in one sentence
 - Focus on hypothesis, results, implications
- Visual Organization is key
 - Start with positioning figures and tables
- Information on how to find you!



A Visual Organization of Your Story

Title – Authors – Institution - Email

Use this space for
Background
Hypothesis
Methods (little)

Central Focus

A painting in a museum
Main results
Most beautiful picture
Looking at this picture and
reading its caption should
provide you 80% of the
message

Figure Legend

More Results

Results

Summary of the results and
clinical and research
implications

A Check List

- ✓ Visually attractive (empty spaces)
- ✓ Concise title
- ✓ A single message
- ✓ Use large fonts (4-10 feet rule)
- ✓ Not more than 300-500 words
- ✓ Main results in the center
- ✓ At least one figure/table
- ✓ A clear hypothesis
- ✓ You can explain it in 3 min or less

Tips for Designing Effective Presentations

A poster with the main title in 1 ½ " font

Developed by Luigi Ferrucci (ferruccilu@mail.nih.gov)

Get the audience's attention by communicating your hypothesis quickly and succinctly



Little space for methods if any at all



Describe your great finding here

Continue with your findings here. Less is more. Shorten your text and enlarge your font.

Conclusions and clinical implications here. You should get here in less than 1 minute. The benchmark is having people reading this part. If they do...Celebrate!

- **BILATERAL BASAL GANGLIA INFARCTION IN THE SETTING OF DRUG-INDUCED HYPOXIA**

- **Introduction:**

- Patients can suffer a hypoxic ischemic brain injury after events such as head trauma, vascular accidents, cardiac arrest, poisoning, or overdose. They usually present in an obtunded or comatose state making it difficult to obtain an accurate history or perform a constructive physical exam. Correctly identifying the extent of the injury through radiologic findings can give insight to the nature of the injury which may aid in acute resuscitation, subacute treatment of a patient, and clinical prognosis. Once a patient is stabilized, MRI is the preferred modality to further assess the extent of damage done to the brain after an insult has occurred. Herein, a case presentation of bilateral basal ganglia infarctions in the setting of hypoxia will be discussed.

- **Case Presentation:**

- A 54-year-old Caucasian male with a past medical history of polysubstance abuse presented with altered mental status and unresponsiveness. At that time, the patient was found to be obtunded by opiate and benzodiazepine overdose. The patient received Narcan in the emergency room and became responsive. Physical findings included lethargy, but arousable to verbal stimuli, significant psychomotor slowing, asterixis, and decreased strength (4/5) in all extremities. Laboratory values showed elevated creatine kinase max of 9,406 and lactic acid of 3.8. US carotid duplex showed less than 50% stenosis on the right and left carotid arteries. MRI Brain/MRA Head without contrast showed bilateral basal ganglia subacute infarctions, most likely related to hypoxemic state with gross patency of the great vessels of the brain. The patient was treated with aspirin, atorvastatin, intravenous fluids, physical therapy, and supportive care. The patient experienced no focal deficits.

- **Discussion:**

- Bilateral basal ganglia damage is a nonspecific finding; so correlating the radiologic findings to the clinical situation and physical exam findings is important. The MRI can show specifically where the brain is damaged, the extent of injury, and provide some information about the nature of the insult. The basal ganglia have high metabolic activity and are often affected first and symmetrically in systemic processes such as hypoxemia, as seen in this patient's MRI. Other processes such as osmotic myelinolysis, Wernicke encephalopathy, and cerebral deep vein thrombosis can cause bilateral lesions seen on MRI; however, these processes usually affect more inferior structures within the midbrain. Hence, it is important to look at imaging and the clinical picture of the patient simultaneously and to keep a wide differential in lesions with nonspecific etiologies to avoid false attribution and misdiagnosis.

- **Conclusion:**

- A majority of brain injuries require a radiological workup; however, because of the unpredictable nature of the organ it is critically important to clinically correlate findings to imaging results and keep a wide differential diagnosis as the patient's course progresses.

FOCAL SEGMENTAL GLOMERULOSCLEROSIS WITH COLLAPSING GLOMERULOPATHY

Mikhail Shipotko¹, MD, Justine Goldberg¹, MS-III, Gerard Lowder¹, MD, Lois A. Arend², PhD, MD, Richard Williams¹, MD, FACP

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² Department of Pathology, Johns Hopkins University, Baltimore, Maryland



Introduction

Collapsing glomerulopathy (CG) is a rare variant of focal segmental glomerulosclerosis (FSGS), which is increasingly recognized as a common cause of end-stage renal disease (ESRD). CG often affects African Americans and is most often seen in association with HIV infection. We present an unusual case of idiopathic CG in 17-year-old non-HIV patient.

Our Patient

HPI: A 17-year-old morbidly obese African American male was brought to the Emergency Department after 4 days of polyuria, polydipsia, fatigue, nausea, vomiting, weight loss and abdominal pain. He had an episode of a mild upper respiratory infection 1 week before the admission.

Past Medical History: Morbid obesity (BMI 46 kg/m²).

Medications: None.

Allergies: Pork and beef (cause urticaria).

Family History: Noncontributory.

Social History: Denies smoking, using alcohol or illicit drugs.

Review of Systems: As per HPI. Also positive for dry mouth, lightheadedness and headaches.

Vital signs: T 36.2 P 118 RR 20 BP 171/72 O₂ 99% RA

Physical exam: Remarkable for obese abdomen, slight decrease of skin turgor, moderate diffuse abdominal tenderness, and trace edema of lower extremities.

Initial Studies

12	13.9	286	140	104	22	838	Anion gap: 18
	40.9		4.7	18	0.41		Ketones: small

Lipid panel: Total cholesterol 222, HDL 29, triglycerides 1,765. HgA1c: 11.1 %. Lipase: 19,669.

Urinalysis: pH 6.0, straw color, clear, specific gravity 1.032, glucose > 500 mg/dl, protein > 500 mg/dl, ketones – small, no nitrites or LE, RBC 0, no bacteria, no casts.

Urine spot protein/creatinine ratio - 19.8.

CT of the abdomen: Severe acute pancreatitis.

Pathology Images

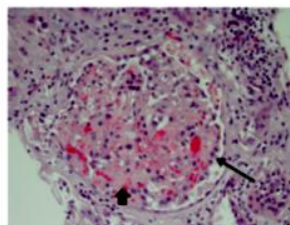


Figure 1. H&E stain: Glomerulus with consolidation of most of the tuft (thick arrow), prominent podocytes (thin arrow) and minimal hypercellularity.

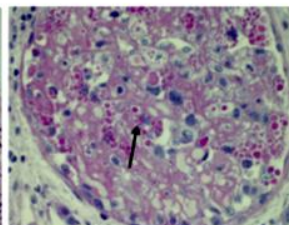


Figure 2. PAS stain: Numerous protein resorption droplets in enlarged podocytes (arrow) and collapse of most capillary lumens. Overall cellularity is not increased.

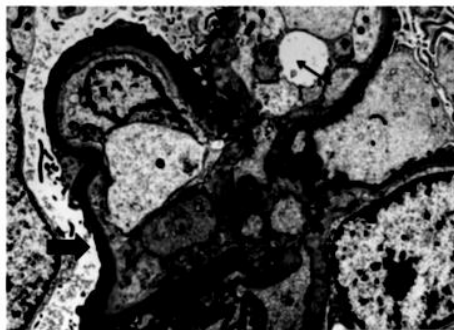


Figure 3. Electron micrograph showing nearly complete effacement of the foot processes (thick arrow) and compromise of capillary lumens (thin arrow).

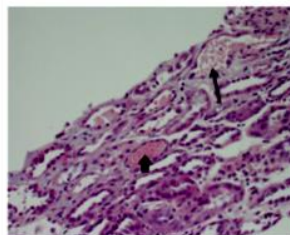


Figure 4. Tubular epithelial cells exhibit flattening and simplification (arrows). Lumens contain sloughed cell debris (arrowhead).

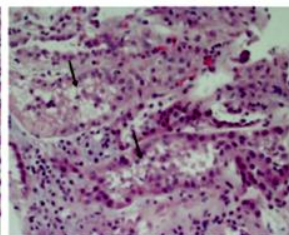


Figure 5. Tubular cytoplasmic vacuolation indicating acute cellular injury (arrows). The interstitium contains a mild lymphocytic infiltrate.

Hospital Course

The patient was started on insulin drip, intravenous fluids, and morphine as needed for abdominal pain. Over the next 5 days, he rapidly developed oliguric kidney injury, did not respond to intravenous fluids, and subsequently was started on hemodialysis (HD). Renal biopsy showed segmental consolidation of glomeruli with collapsed appearance, marked podocyte injury, and focal sloughing of tubular epithelium consistent with CG and acute tubular necrosis (ATN). HIV ELISA test, viral hepatitis screen, ANA, ANCA, CMV and parvovirus antibodies were negative. At 2 weeks, patient's creatinine peaked at 11 mg/dL and started to improve, and he was taken off HD. After 2 months, creatinine decreased down to 1.5 mg/mL, but significant proteinuria persisted.

Discussion

CG often affects African Americans and is usually seen with HIV infection. It has also been reported in association with other viral infections (parvovirus, CMV), malignancies, drug exposure (pamidronate, interferons, anabolic steroids) and can be idiopathic, as in this patient. The pathogenesis involves visceral epithelial cell injury leading to cell cycle deregulation and a proliferation of glomerular epithelial cells accompanied by loss of glomerular filtration barrier function. Prognosis of CG is poor, with rapid progression to ESRD within 1 year. Anecdotal case reports suggest use of steroids, cyclosporine, and cyclophosphamide, with complete remission seen only in 9.6 % of cases and partial remission in 15.2 % of cases. In our patient, the use of steroids was felt to be unwarranted due to morbid obesity and diabetes. The further treatment is currently under consideration.

Conclusion

We report a rare case of idiopathic collapsing glomerulopathy (CG) in non-HIV patient. Further research is needed to determine the optimal therapy in order to prevent rapid progression of CG to ESRD.

References

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