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Advanced Academic Writing



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There is hope for the young!

How you write manuscripts and grant proposals impacts your success rate.





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Five Assignments

- 1) Write research article manuscript 1.
- 2) After feedback, write rebuttal and revised manuscript 1.
- 3) Write research article manuscript 2 (new story + journal).
- 4) After feedback, write rebuttal and revised manuscript 2.
- 5) Write a grant proposal.



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Useful resources

Copyright-free images:

[Pixabay](#)

[Unsplash](#)

[Pexels](#)

Real scientific datasets:

[Academic Torrents](#)

Free browser-based graph maker :

[ChartGo](#)

Free browser-based statistics calculator:

[DanielSoper](#)

Instructions for authors for some journals:

[Nature](#)

[Science](#)

[Scientific Reports](#)

[Lab-on-a-Chip](#)

[Analytica Chimica Acta](#)

[Clinical Biomechanics](#)

[J Acoustic Soc Amer](#)

[J Proteome Res](#)

Examples of rebuttal letters:

[AJP](#)

[JBC](#)



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Articles

Use either your own unpublished data or fake data.

Do not submit sensitive data!

Do not copy-paste, you must write new texts!

Submit as Word by e-mail.

Ignore journal image rules, add as appendix.

Do not submit fake data to a real journal...



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Grant

Write a grant proposal to VR (NT)
(Swedish Research Council).

Include only project description and budget.

Include illustrations embedded in the text.

Submit (Word+Excel) by e-mail.



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Week	Mon	Tues	Wed	Thu	Fri	Sat	Sun
45	Monday November 4 09:00-09:45 Room E1517a Introduction to the Manuscript Assignments and the Grant Assignment	(writing)	(writing)	(writing)	(writing)		
46	Deadline Manuscript 1 Monday Nov 11, 24:00	(writing)	(writing)	(writing)	(writing)		
47	Editor's reply with Reviewer's comments	(writing)	(writing)	(writing)	Deadline Resubm. 1 Friday Nov 22, 24:00		
48	Deadline Manuscript 2 Monday Nov 25, 24:00	(writing)	(writing)	(writing)	(writing)		
49	Editor's reply with Reviewer's comments	(writing)	(writing)	14:00: Social function (cake and cookies) Deadline Grant Friday Dec 5, 24:00	Deadline Resubm. 2 Friday Dec 6, 24:00 Feedback on grant		



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Pass/fail limits

No final exam.

Submit all five assignments before each deadline.

Minimal quality = all sections filled out, no plagiarisms.



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Diagnostic test



Anonymous Vocabulary Quiz:

33-multiple choice quiz

Reading a lot →
improving vocabulary +
improving writing skills.



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Common writing errors



- The long sentence.
- Passive voice.
- Overstating your data.
- Unclear goals or reasons.
- Bad spelling/grammar.
- Atlantic English.
- Swenglish.
- Repeated use of favorite word.
- Skewed emphasis.
- Mixed tenses.
- Spoken expressions.



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Common writing errors

The long sentence.

Before:

Quantitatively, the impedance of a two-terminal circuit element is the ratio of the complex representation of a sinusoidal voltage between its terminals to the complex representation of the current flowing through it, and in general, it depends upon the frequency of the sinusoidal voltage, and impedance also extends the concept of resistance to AC circuits, and possesses both magnitude and phase, unlike resistance, which has only magnitude.

The fix:

Split up to three sentences.



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Common writing errors

Passive voice.

Before:

Red blood cells, A9 dopaminergic neurons in the substantia nigra, macrophages, alveolar cells, lung cells, retinal pigment epithelium, hepatocytes, mesangial cells in the kidney, endometrial cells, cervical cells and vaginal epithelial cells are examples of cells that contain hemoglobin.

The fix:

Hemoglobin is present in many cell types, for example



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Common writing errors

Overstating your data.

Before:

As shown in Fig.1, our method can cure brain cancer.

The fix:

The 35 % reduced growth of a brain cancer cell line (Fig. 1) holds promise for the future development of therapeutic approaches based on our method.



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Common writing errors

Unclear goals or reasons.

Keep it simple.

What have you done?

What do you want to do?

Why?



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Common writing errors

Bad spelling/grammar.

Use a spelchecking fucntion
every time you written have an new text.



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Common writing errors

Atlantic

American

British

tumor

tumour

color

colour

favorite

favourite

center

centre

defense

defence

hemoglobin

haemoglobin

organize

organise

aging

ageing



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Common writing errors

Swenglish.

He looked as if it rained (= to be indifferent).

We fear there are owls in the moss (= to suspect malice).

Now there will be other cinnamon rolls (= time for punishment).



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Common writing errors

Repeated use of favorite word.

These systems are poised to revolutionize medical diagnostics and treatment **modalities**. However, the lack of environmentally friendly actuator materials is still hindering this industry, preventing a host of new biomedical devices to enter the mainstream market. In this proposed EU project, *Novel medical diagnostic and treatment modalities*, we propose to solve this deadlock through implementation of a completely new **modality** of smart actuating materials which will be integrated in other **modalities**. This family of materials is based on highly effective **modalities** which have radically different properties compared to existing ones.

The fix:

These systems are poised to revolutionize medical diagnostics and treatment ~~modalities~~options. However, the lack of environmentally friendly actuator materials is still hindering this industry, preventing a host of new biomedical devices to enter the mainstream market. In this proposed EU project, *Novel medical diagnostic and treatment modalities*, we propose to solve this deadlock through implementation of a completely new ~~modality~~class of smart actuating materials which will be integrated in other ~~modalities~~systems. This family of materials ~~is based on highly effective modalities which have~~ has radically different properties compared to existing ones.



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Common writing errors

Skewed emphasis.

Before:

The patient material consisted of microvesicles from urine samples from 126 Danish prostate cancer patients and 53 healthy **men**, **isolated with** a novel acoustic technology.

The fix:

The patient material consisted of urine samples from 126 Danish prostate cancer patients and 53 healthy men, from whom microvesicles were isolated with a novel acoustic technology.



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Common writing errors

Mixed tenses.

Before:

After 16 hours gelation of sol-gel droplets, each microarray chip **was** soaked with 30 μ l of PBS solution and **incubated** for 1 hour with a blocking buffer (1% BSA in PBS buffer, 10mg/mL). This washing step **is** followed by washing in PBS with 0.05% Tween-20, and then FITC-labeled antibodies (from 1 pg/mL to 10 ng/mL) in PBS buffer **were** incubated for 1 hour (See Figure 2). After a washing step (**soaked** into Tween-PBS three times), the chips **are** positioned under microscopy for detection.

The fix:

After 16 hours gelation of sol-gel droplets, each microarray chip was soaked with 30 μ l of PBS solution and incubated for 1 hour with a blocking buffer (1% BSA in PBS buffer, 10mg/mL). This washing step ~~is~~ was followed by washing in PBS with 0.05% Tween-20, and then FITC-labeled antibodies (from 1 pg/mL to 10 ng/mL) in PBS buffer were incubated for 1 hour (See Figure 2). After a washing step (soaked into Tween-PBS three times), the chips ~~are~~ were positioned under microscopy for detection.



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Common writing errors

Spoken expressions.

~~Don't, won't, can't, would've...~~

Do not, will not...



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Advanced/risky:

The Reviewer Trap:

Include an obvious logical hole in your story.

The reviewer will ask for an extra experiment.

...that you of course already have prepared.

This can help shift focus from other weaknesses.



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Grants and budgets

Current approval rates.
Selling rhetoric.
Follow the guidelines!
Write clear and simple!
You must show preliminary data!
Don't hide your competitors.
What's my indirect cost percentage?
Examples of budgets.





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Grants and budgets

Approval rates:

VR project(M/NT):	20-30 %
EU FP7(SE):	27 %
EU H2020(SE):	16 %
NIH R01 (US):	22 %
VINNOVA(2017):	36 %
SSF:	10 %



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Grants and budgets

Selling rhetoric:

There is an important
problem/fatal disease
out there.





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Grants and budgets

Selling rhetoric:

We alone can fix it,
because we invented
something new.





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Grants and budgets

Selling rhetoric:

We also use several fancy methods currently in fashion (machine learning, Crispr/CAS gene editing etc).





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Grants and budgets

Selling rhetoric:

Use the buzz words and approaches (e.g. multidisciplinary) mentioned in the call.





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Grants and budgets

Selling rhetoric:

Emphasize your cool findings. Put them up front, and repeat.





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Grants and budgets

Selling rhetoric:

To VR:

I am the only one in Sweden representing this hot scientific field (or first/best in the world)





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Grants and budgets

Selling rhetoric:

Abstracts, summaries,
and popular scientific
descriptions are read
most carefully.





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Grants and budgets

Follow the guidelines!

Do not exceed max page limit (typically cut intro).

Do not use smaller font size.

Use the CV template, not just any CV you have.



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Grants and budgets

Write clear and simple!

A random person on the street should be able to understand.





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Grants and budgets

Write clear and simple!

What do you want to do?

Why is this important for the world?

Avoid TLAs (three-letter acronyms).



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Grants and budgets

Write clear and simple!

The reviewers have limited time to initially browse your application, maybe 5- 20 minutes. Help the reviewers focus on the most important take-home message in a wall of text by **marking it in boldface**. However, take care not to **overdo** this, as it will **look** like you had **too much coffee** when **writing** the **application**.



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Grants and budgets

Write clear and simple!

Do you + team have the capacity?

Is there enough time and money to do all of this?

Are you asking for too much money?

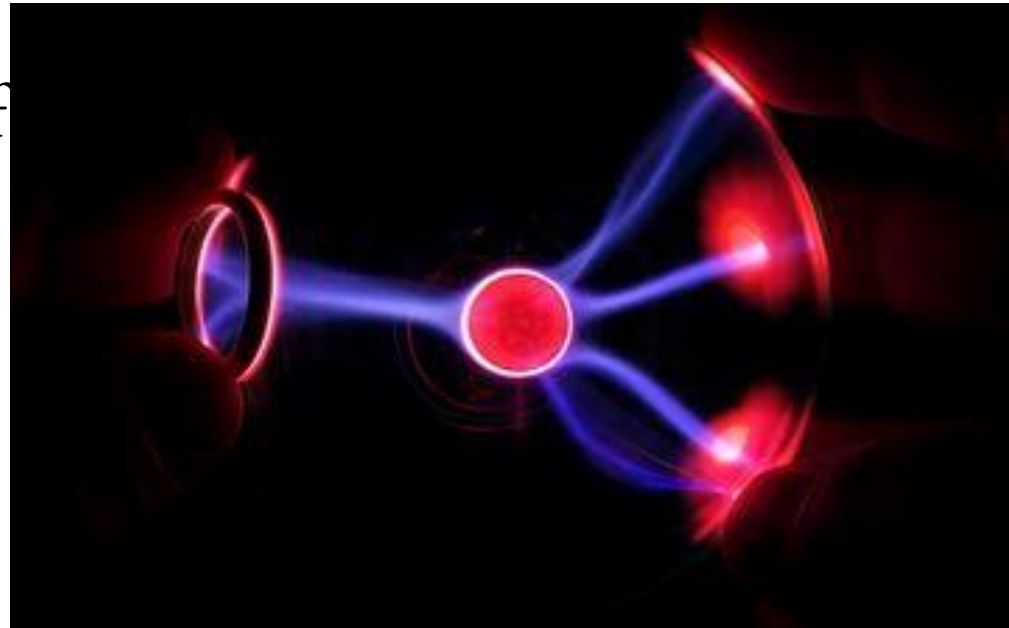


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Grants and budgets

You must show preliminary data!

Demonstrates the feasibility of the project. Indicates that you have the capacity.





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Grants and budgets

Don't hide your competitors.

Reviewers will still find them.

Show instead that they are weak.



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Grants and budgets

Find your current LU indirect cost Excel here:

<https://www.ekonomiwebben.lu.se/for-mitt-arbete/projektansokan-och-projektredovisning/mallar-for-projektkalkyler>

Third page of the Excel, the 'forskning' column.



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Effort x number x yearly salary

Previous x 1,02

x 1,53 x 12

	A	B	C	D	E	F	G	H	I	J	K
1	SEK		number of	effort	2020	2021	2022	2023	SUMS	salary /mon	per year w. Taxes
2	Salaries	PhD student	1	80%	462 672	471 925	481 364	490 991	1 906 953	31 500	578 340
3		Postdoc	1	50%	367 200	374 544	382 035	389 676	1 513 454	40 000	734 400
4					0	0	0	0	0		
5	Material	Chemicals			80 000	100 000	100 000	80 000	360 000		
6					0	0	0	0	0		
7									0		
8			Subtotal		909 872	946 469	963 399	960 667	3 780 407		
9			Lab space	15,91%	144 761	150 583	153 277	152 842	601 463		
10			Indirect costs	35,81%	325 825	338 931	344 993	344 015	1 353 764		
11			TOTAL		1 380 458	1 435 983	1 461 669	1 457 524	5 735 634		
12											
13					MAX: MSEK 1,5/yr						
14					2% salary increase/yr						



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General creative tips

Let someone(s) read your text to get extra input.

and/or

Let the text rest for a week, then return to it.



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Now go write something.

