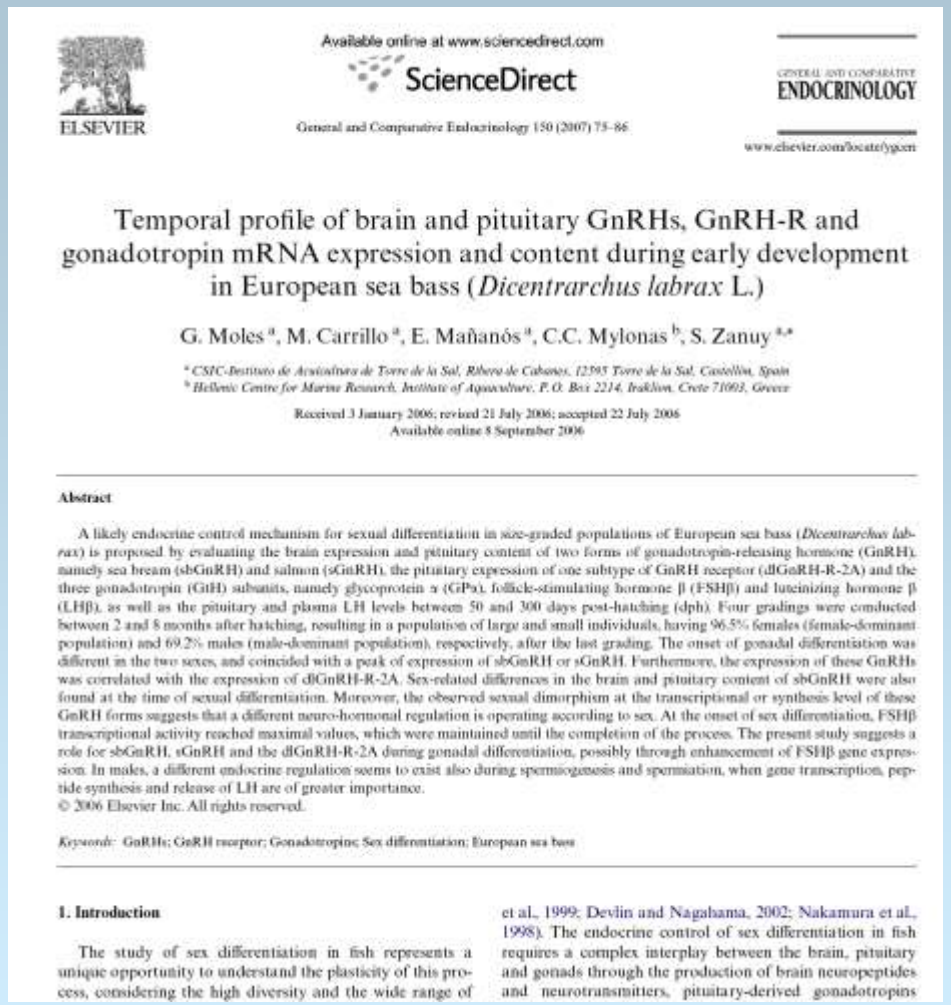
# How to write a scientific article



Available online at www.sciencedirect.com
ScienceDirect
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General and Comparative Endocrinology 150 (2007) 75–86
GENERAL AND COMPARATIVE ENDOCRINOLOGY
www.elsevier.com/locate/ygcen

Temporal profile of brain and pituitary GnRHs, GnRH-R and gonadotropin mRNA expression and content during early development in European sea bass (*Dicentrarchus labrax* L.)

G. Moles [a], M. Carrillo [a], E. Mañanós [a], C.C. Mylonas [b], S. Zanuy [a,*]

[a] *CSIC-Instituto de Acuicultura de Torre de la Sal, Ribera de Cabanes, 12595 Torre de la Sal, Castellón, Spain*
[b] *Hellenic Centre for Marine Research, Institute of Aquaculture, P.O. Box 2214, Iraklion, Crete 71003, Greece*

Received 3 January 2006; revised 21 July 2006; accepted 22 July 2006
Available online 8 September 2006

**Abstract**

A likely endocrine control mechanism for sexual differentiation in size-graded populations of European sea bass (*Dicentrarchus labrax*) is proposed by evaluating the brain expression and pituitary content of two forms of gonadotropin-releasing hormone (GnRH), namely sea bream (sbGnRH) and salmon (sGnRH), the pituitary expression of one subtype of GnRH receptor (dlGnRH-R-2A) and the three gonadotropin (GtH) subunits, namely glycoprotein α (GPα), follicle-stimulating hormone β (FSHβ) and luteinizing hormone β (LHβ), as well as the pituitary and plasma LH levels between 50 and 300 days post-hatching (dph). Four gradings were conducted between 2 and 8 months after hatching, resulting in a population of large and small individuals, having 96.5% females (female-dominant population) and 69.2% males (male-dominant population), respectively, after the last grading. The onset of gonadal differentiation was different in the two sexes, and coincided with a peak of expression of sbGnRH or sGnRH. Furthermore, the expression of these GnRHs was correlated with the expression of dlGnRH-R-2A. Sex-related differences in the brain and pituitary content of sbGnRH were also found at the time of sexual differentiation. Moreover, the observed sexual dimorphism at the transcriptional or synthesis level of these GnRH forms suggests that a different neuro-hormonal regulation is operating according to sex. At the onset of sex differentiation, FSHβ transcriptional activity reached maximal values, which were maintained until the completion of the process. The present study suggests a role for sbGnRH, sGnRH and the dlGnRH-R-2A during gonadal differentiation, possibly through enhancement of FSHβ gene expression. In males, a different endocrine regulation seems to exist also during spermiogenesis and spermiation, when gene transcription, peptide synthesis and release of LH are of greater importance.


*Keywords:* GnRHs; GnRH receptor; Gonadotropins; Sex differentiation; European sea bass

**1. Introduction**

The study of sex differentiation in fish represents a unique opportunity to understand the plasticity of this process, considering the high diversity and the wide range of

et al., 1999; Devlin and Nagahama, 2002; Nakamura et al., 1998). The endocrine control of sex differentiation in fish requires a complex interplay between the brain, pituitary and gonads through the production of brain neuropeptides and neurotransmitters, pituitary-derived gonadotropins


**Constantinos (Dinos) Mylonas**
**Hellenic Center for Marine Research**
**Institute of Marine Biology, Biotechnology & Aquaculture**
**Crete, Greece**

# How to write a scientific article

## Outline of todays presentation

- Preparation of a manuscript
  - Format
  - Parts
  - Contents
  - References
  - Tables and Graphs
- Language use and common errors
- References and Bibliographic software
- Table of Contents

# Structure - Article

- Title page
- Abstract
- Introduction
- Materials and methods
- Results
- Discussion
- Acknowledgements
- References
- Tables
- List of Figures
- Figures

**Typical, traditional format, but**
**some more recent journals have very different format**

**(Nature, Science, BMG Genetics, etc.)**

# Structure - Article

- Title page
- Abstract (1 page)
- Background
- Results & Discussion
- Conclusions
- Methods
- Additional files
- Acknowledgements
- References
- Tables
- List of Figures
- Figures

→

Background
Results
Conclusions
Keywords

Aoki et al. BMC Genomics (2015) 16:406
DOI 10.1186/s12864-015-1600-7

BMC Genomics

RESEARCH ARTICLE Open Access

Second generation physical and linkage maps of yellowtail (*Seriola quinqueradiata*) and comparison of synteny with four model fish

Jun-ya Aoki[1*], Wataru Kai[1], Yumi Kawabata[1], Akiyuki Ozaki[2], Kazunori Yoshida[3], Takashi Koyama[4], Takashi Sakamoto[4] and Kazuo Araki[1*]

**Abstract**

**Background:** Physical and linkage maps are important aids for the assembly of genome sequences, comparative analyses of synteny, and to search for candidate genes by quantitative trait locus analysis. Yellowtail, *Seriola quinqueradiata*, is an economically important species in Japanese aquaculture, and genetic information will be useful for DNA-assisted breeding. We report the construction of a second generation radiation hybrid map, its synteny

# Structure - Article

**animal**

**An International Journal of Animal Bioscience**

## Instructions for authors

**Last updated 4 June 2009**

**animal** – an International Journal of Animal Bioscience is published in English in one volume of 12 issues per year, as a printed journal and in electronic form. No page charges are required from the author.

### Introduction

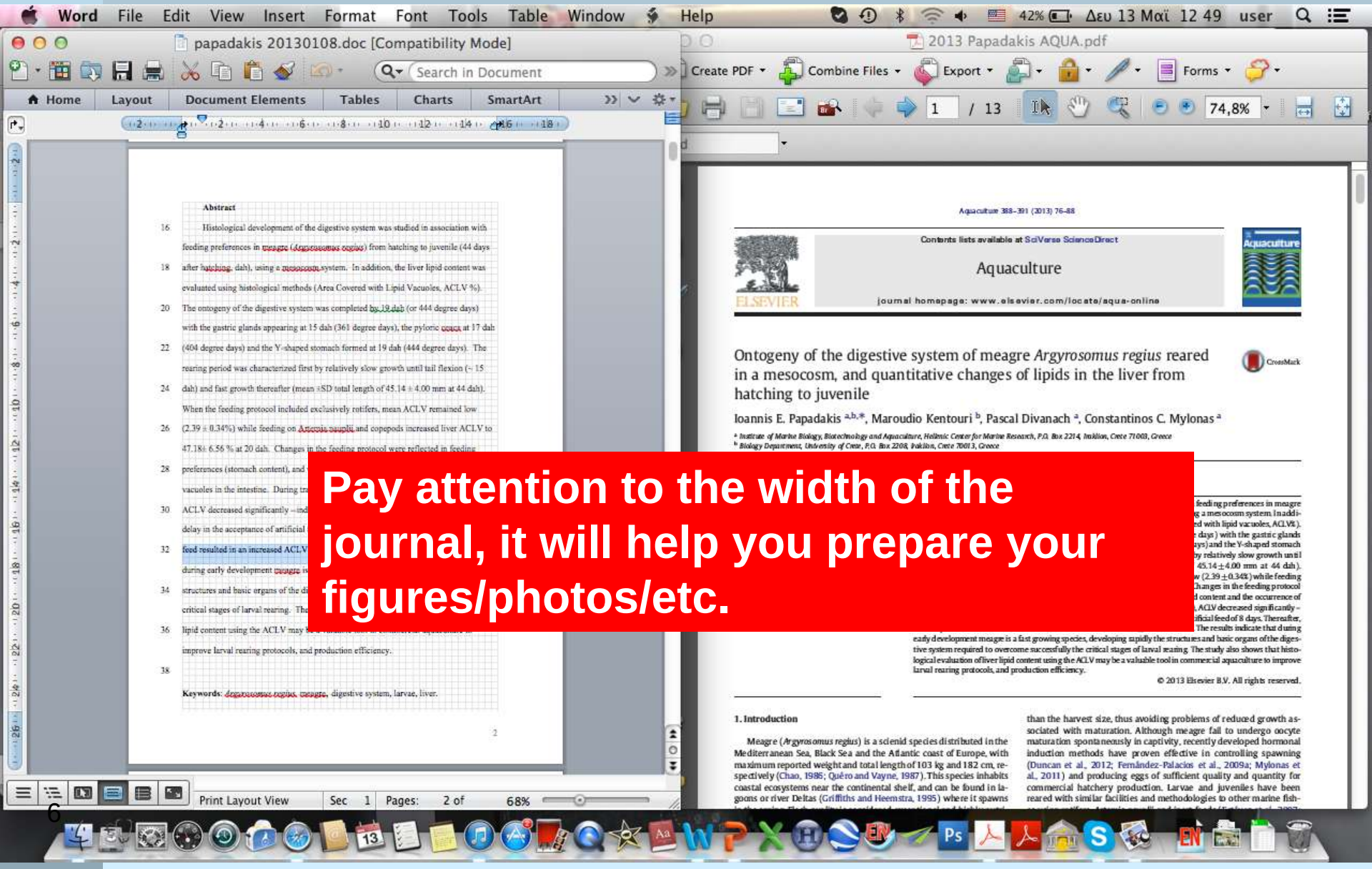
**animal** – is a completely new entity that seeks to attract the best research in animal biology and animal systems
central
Science
for Ani
*Animal*

**Pay very careful attention before you even start writing the manuscript!!!!!**

**animal** aims to publish original, cutting-edge research and horizon-scanning reviews on animal-related aspects of the life sciences at the molecular, cellular, organ whole animal and production system levels. Papers will be considered in aspects of both strategic and applied science in the areas of Animal Breeding and Genetics, Nutrition, Physiology and Functional Biology of Systems, Behaviour, Health and Welfare, Livestock Farming Systems and Product Quality. Emphasis will be placed on managed animals and on the integrative nature of biological systems. . The use of laboratory animal models for the benefit of farmed livestock and studies using farm animals with the aim of improving human health are within the scope. Papers dealing with the translation of basic and strategic science into whole animal and system impacts on Productivity, Product Quality, the Environment and Humans (health, nutrition and well being) will be particularly welcome. The full **scope of the journal** is available on http://www.animal-journal.eu/scope.htm and should be consulted before submitting a paper.

# Format

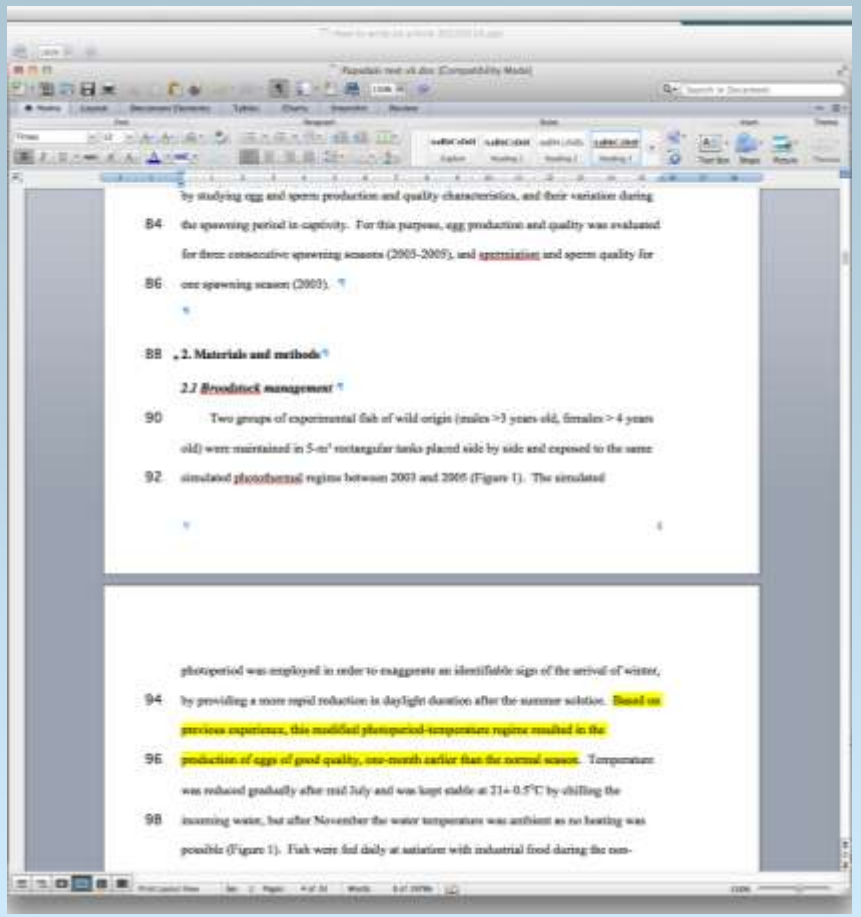
**Manuscript and published article have very different formats!**




**Pay attention to the width of the journal, it will help you prepare your figures/photos/etc.**

# Format (Instructions to authors)

- Margins
  - Left, right, top, bottom
- Spacing
  - Double space
- Font type and size
  - Arial or Times
- Line numbers
  - Every other (1, 3, 5)
- Levels of organization
  - Not more than three (2 better)
    - 1. Introduction
    - 2. Materials and Methods
      - 2.1. Experimental animals
      - 2.2. Experimental design
        - » 2.2.1. Effect of season on reproduction



# Structure - Article

- Title page (1 page)
- Abstract
- Introduction
- Materials and methods
- Results
- Discussion
- Acknowledgements
- References
- Tables
- Figures lege
- Figures

**The first egg collection and larval rearing of Atlantic Bluefin tuna (*Thunnus thynnus* L.) in captivity, after hormonal spawning induction**

Gregorio De Metrio[1,*], Christopher R. Bridges[2], Constantinos C. Mylonas[3], Massimo Caggiano[4], Michele Deflorio[1], Nikoletta Santamaria[1], R?????? Zupa[1], Chrisovalentino Pousis[1], Robert Vassallo-Agius[5], Hillel Gordin[6], Aldo Corriero[1]

[1]Department of Animal Health and Well-being, University of Bari, Italy
[2]Institute Für Stoffwechselphysiologie, Heinrich-Heine Universität, Düsseldorf, Germany
[3]Institute of Aquaculture, Hellenic Center for Marine Research, Heraklion, Crete, Greece
[4]Panittica Pugliese, Torre Canne di Fasano (BR), Italy
[5]Malta Fishfarming Ltd, Kirkop KKP9042, Malta;
[6]Israel Oceanographic and Limnological Research, National Center for Mariculture, Eilat, Israel.

* Corresponding author. Tel.: +39 0805443907; fax +39 0805443908. E-mail address: g.demetrio@veterinaria.uniba.it

*Title*
A title needs to be concise yet informative. It should:
(*a*) arrest the attention of a potential reader scanning a journal or a list of titles;
(*b*) provide sufficient information to allow the reader to judge the relevance of a paper to his/her interests and whether it will repay the effort of obtaining a copy;
(*c*) incorporate keywords or phrases that can be used in indexing and information retrieval, especially the animal species on which the experiment has been carried out;
(*d*) avoid inessentials such as 'A detailed study of ...', or 'Contribution to ...'
It must not include the name of the country or of the region where the experiment took place.

# Structure - Article

- Title page (1 page)
- **Abstract (1 page)**

*Abstract*

Every paper should have a one-paragraph abstract of not more than 400 words which is complete and understandable without reference to the paper. It should state succinctly the problem, the experimental methods, results and conclusions but should not be overburdened by numerical values. References to tables and figures, and undefined abbreviations are not acceptable.

*Keywords*

Up to a maximum of five keywords selected from CAB Thesaurus (1995) or from an equivalent volume should be selected. If not appropriate, keywords will be modified by the Editorial Office, with the author's agreement.

- Tables
- Figures legends
- Figures

# Structure - Article

- Title page (1 page)
- Abstract (1 page)
- **Introduction (2-3 pages)**
- Materials and met
- Results
- Discussion
- Acknowledgements
- References
- Tables
- Figures legends
- Figures

- Presentation of the problem
- Current knowledge or situation
- Relevant knowledge from other species
- Objectives of the study

# Structure - Article

- Title page (1 page)
- Abstract (1 page)
- Introduction (2-3 pages)
- **Materials and methods (1-n pages)**
- Results
- Discussion
- Acknowledger
- References
- Tables
- Figures legen
- Figures

**Objectives**
- Understand the study
- Evaluate the results
- Repeat if required

**Content**
- Experimental animals or site
- Experimental design
- Data collection
- Analytical methods (hormone assays, molecular methods, measurements, etc.
- Statistical analysis

# Structure - Article

- Title page (1 page)
- Abstract (1 page)
- Introduction (2-3 pages)
- Materials and methods (1-n pages)
- **Results (1-n pages)**
- Discussion
- Acknowledgemer
- References
- Tables
- Figures legends
- Figures

- Presentation of results in a chronological order
- Reference to Tables and Figures
- Absolutely NO discussion (no opinions or conclusions) unless some of the results has lead to another experiment/analysis not planned originally

# Structure - Article

- Title page (1 page)
- Abstract (1 page)
- Introduction (2-3 pages)
- Materials and methods (
- Results (1-n pages)
- **Discussion (3-n pages)**
- Acknowledgements
- References
- Tables
- Figures legends
- Figures

- Interpretation of results
- Comparison with other studies
- Avoid referring to Tables and Figures
- NO mentioning of results (numbers), except for comparison purposes
- Significance of the study, contribution to the field
- Suggestions for further work
- Conclusions

# Structure - Article

- Title page (1 page)
- Abstract (1 page)
- Introduction (2-3 pages)
- Materials and methods (1-
- Results (1-n pages)
- Discussion (3-n pages)
- **Acknowledgements (1 paragraph)**
- References
- Tables
- Figures legends
- Figures

- Funding agencies and organizations
- Technicians and collaborators who worked on the study

- Scientist giving advice on study or reviewed the manuscript
- Reviewers that improved the manuscript
- NOT your parents or girlfriend/boyfriend

# Structure - Article

- Title page (1 page)
- Abstract (1 page)
- Introduction (2-3 pages)
- Materials and methods (1-n
- Results (1-n pages)
- Discussion (3-n pages)
- Acknowledgements (1 paragraph)
- **References (1-n pages, ~50 citations)**
- Tables
- Figures legends
- Figures

- Provide proof of knowledge of the field
- Suggest studies to interested readers
- Original articles to demonstrate knowledge of the field

# Structure - References

- Only cite articles that you have read!!!! Cannot be sure of others' interprations. Otherwise, cite the paper as (Stevens et al., 1934, cited in Johnston et al., 2013)
- Use review articles and book chapters to avoid too many citations. These articles should be recent (<5-10 years). Otherwise they will be outdated.
- Use original articles for the absolutely relevant information (acknowledgement, aware of the literature, point to similar/relevant research)
- Do not cite conferences if older that 3 years old.
- Avoid articles in national journals not written in English (except for historical reasons)

# Structure - Article

- Title page (1 page)
- Abstract (1 page)
- Introduction (2-3 pages)
- Materials and methods (1-n pages)
- Results (1-n pages)
- Discussion (3-n pages)
- Acknowledgements (1 paragraph)
- **References (1-n pages, ~50 citations)**
- Tables
- Figures legends
- Figures

- Journals, Books, Chapters, Conferences, Thesis, Reports
- Every journal has its own style ! (alphabetical, numerical)

# Structure - Article

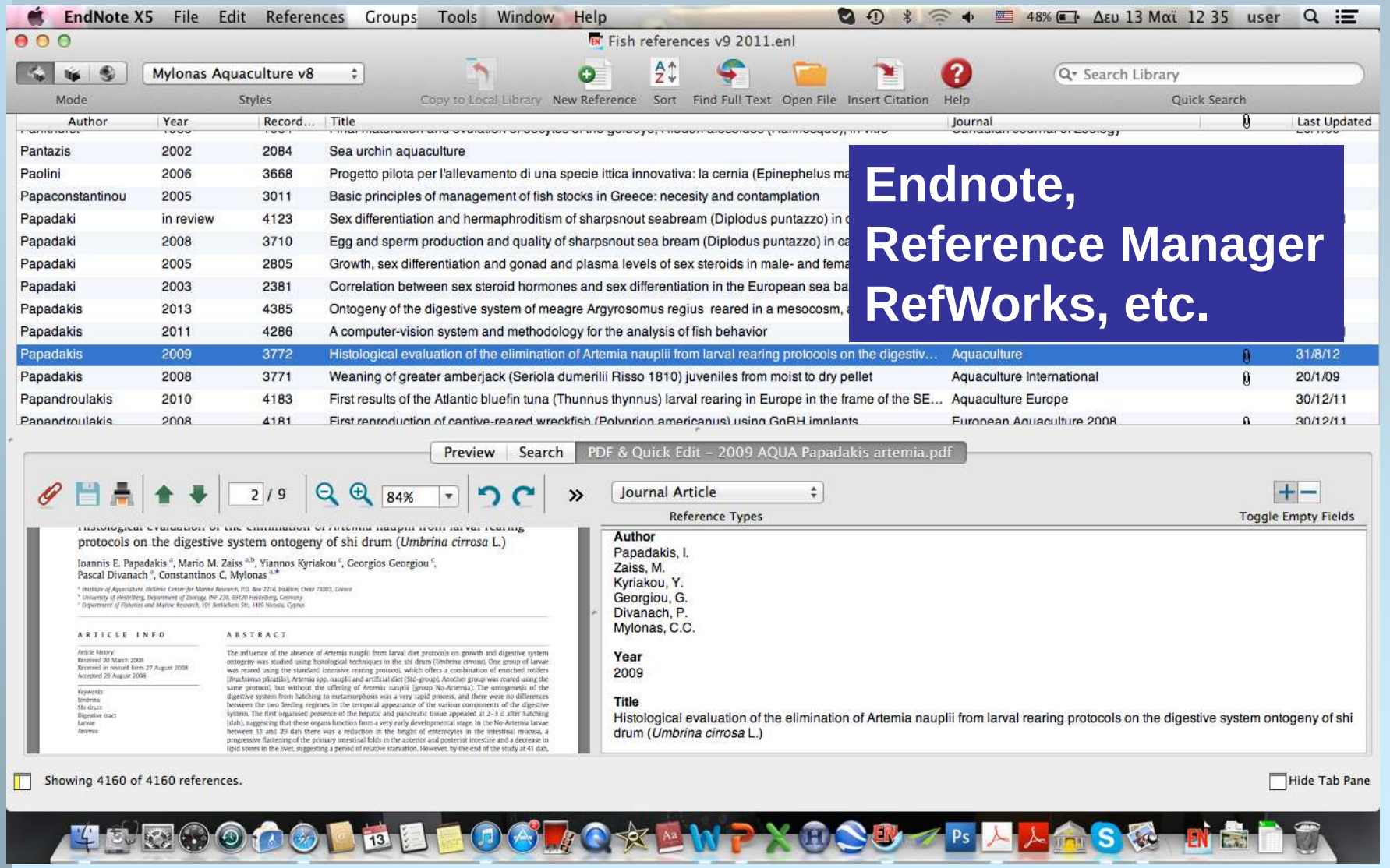
Mylonas, C.C., Hinshaw, J.M., Sullivan, C.V., 1992. GnRHa-induced ovulation of brown trout (*Salmo trutta*) and tts effects on egg quality. Aquaculture 106, 379-392.

Duncan, N.J., Estévez, A., Fernández-Palacios, H., Gairin, I., Hernández-Cruz, C.M., Roo, F.J., Schuchardt, D., Vallés, R., 2013. Aquaculture production of meagre (*Argyrosomus regius*): hatchery techniques, ongrowing and market, in: Allan, G., Burnell, G. (Eds.), Advances in Aquaculture Hatchery Technology. Woodhead Publishing Limited, Cambridge,

Asturiano, J.F., Sorbera,
Carrilo, M., Zanuy, S.
European sea bass r
female approach. Jou

- Journals, Books, Chapters, Conferences, Thesis, Reports
- Every journal has its own style ! (alphabetical, numerical)

# Reference management software



# Structure - Article

- Title page (1 page)
- Abstract (1 page)
- Introduction (2-3 pages)
- Materials and methods (
- Results (1-n pages)
- Discussion (3-n pages)
- Acknowledgements (1 pa
- References (1-n pages,
- **Tables (0-7?)**
- Figures legends
- Figures

- Each Table in a separate page
- Self-explanatory (no reference to main text)

590

**Table 1.** Mean (± SEM) food conversion ratio (FCR = F / [$B_f$ – $B_i$], where F = consumed food, $B_f$ = final biomass, $B_i$ = initial biomass) of shi drum reared at different salinities (4, 10 and 40 psu) in duplicated tanks (*i.e.*, n = 2). Significant differences ($P < 0.05$) at different sampling points and over the whole course of the study between the 4 psu, and the 10 or 40 psu group are indicated by different letter superscripts next to the mean values. Within each salinity treatment, there were no differences in FCR between different sampling times ($P = 0.19$)

| | FCR | | |
|---|---|---|---|
| **Salinity** | **4 psu** | **10 psu** | **40 psu** |
| **Time period (d)** | | | |
| **0-14** | $3.39 \pm 1.89^{a}$ | $1.78 \pm 0.05^{a,b}$ | $1.29 \pm 0.14^{b}$ |
| **15-28** | $3.32 \pm 0.22^{a}$ | $1.13 \pm 0.08^{b}$ | $1.06 \pm 0.05^{b}$ |
| **29-42** | $1.36 \pm 0.14$ | $1.21 \pm 0.14$ | $1.25 \pm 0.02$ |
| **43-56** | $4.71 \pm 2.20^{a}$ | $1.68 \pm 0.26^{b}$ | $1.42 \pm 0.02^{b}$ |
| **57-70** | $1.28 \pm 0.04$ | $1.31 \pm 0.21$ | $1.12 \pm 0.21$ |
| **70-84** | $1.54 \pm 0.26$ | $1.54 \pm 0.40$ | $1.58 \pm 0.68$ |
| **Whole duration (d)** | | | |
| **0-84** | $2.60 \pm 0.53^{a}$ | $1.44 \pm 0.10^{b}$ | $1.28 \pm 0.10^{b}$ |

610

# Structure - Article

- Title page (1 page)
- Abstract (1 page)
- Introduction (2-3 pages)
- Materials and methods
- Results (1-n pages)
- Discussion (3-n pages)
- Acknowledgements (1 pa
- References (1-n pages,
- Tables (0-7?)
- Figure legends (0-n)
- **Figures (0-7?)**

- Each Figure in a separate page, preferably in TIFF or JPEG format
- NO titles (legends)

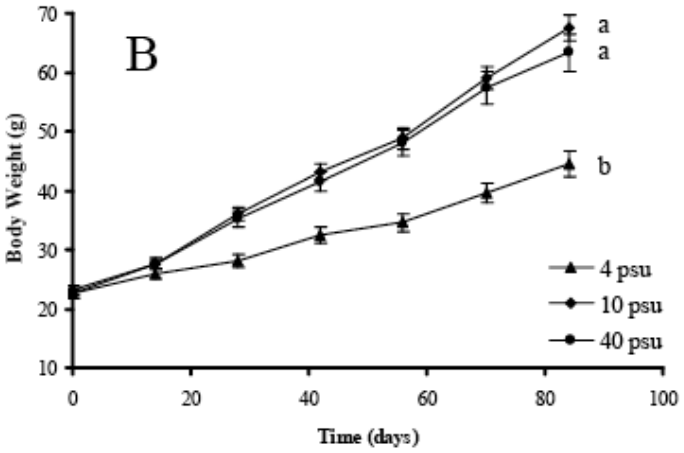



**Figure 1**

**Mylonas et al.**

# Structure - Article

- Title page (1 page)
- Abstract (1 page)
- Introduction (2-3
- Materials and methods
- Results (1-n pages)
- Discussion (3-n pages)
- Acknowledgements (1 p
- References (1-n pages,
- Tables (0-7?)
- **Figure legends (0-n)**
- Figures (0-7?)

- Separate Word file or at the end of the main text
- NOT next to the Figure
- Self-explanatory (no reference to main text)

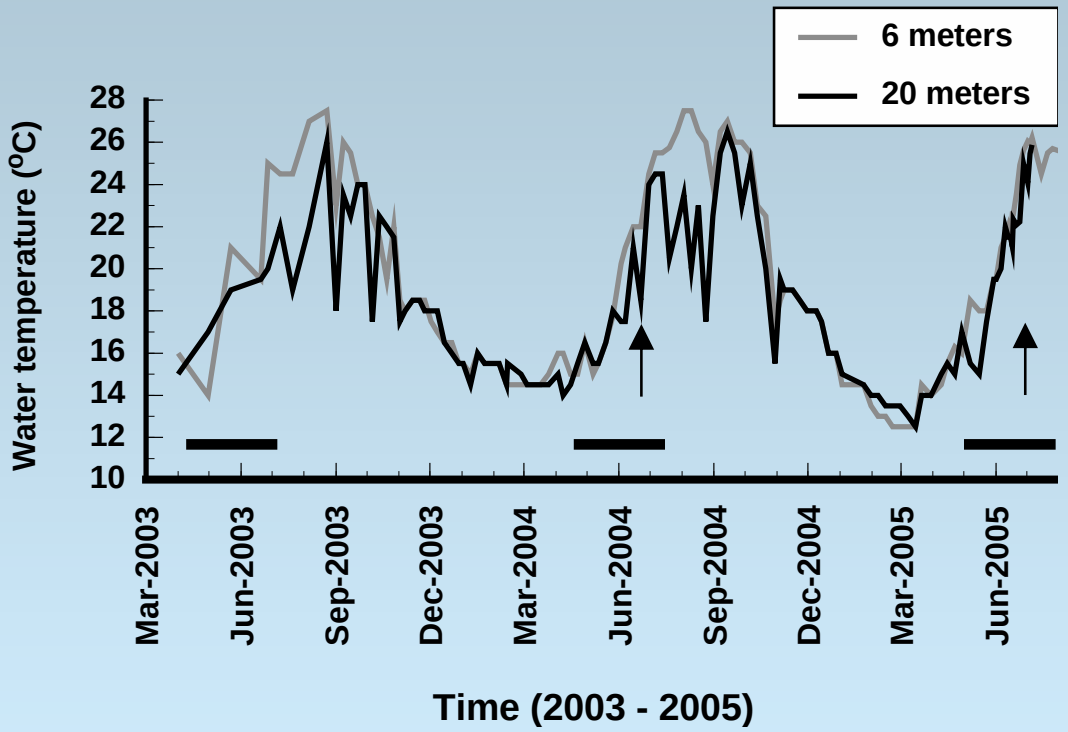
625 **Figure legends**

**Figure 1.** Changes in mean (± SEM) total length (A) and body weight (B) of shi drum (n = 25 – 30) reared in duplicated tanks at different salinities (4, 10 and 40 psu) during a period of 84 days. Reduction of salinity to 4 psu had a statistically significant effect on growth over the whole course of the study (regression analysis, $P < 0.05$), as indicated by 630 different letter superscripts next to the growth curves.

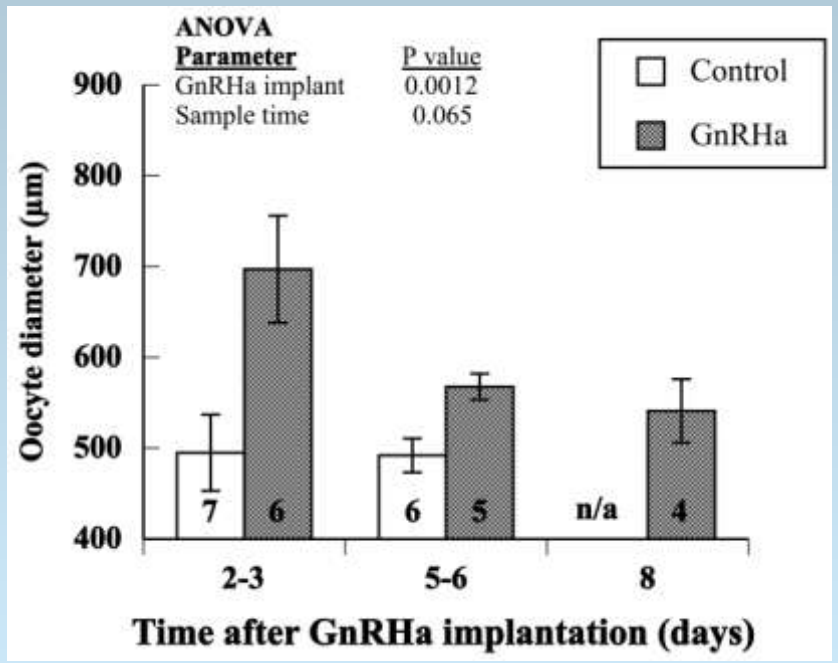
**Figure 2.** Changes in mean (± SEM) gill $Na^+/K^+$ -ATPase specific activity in shi drum (n = 10) reared at different salinities during a period of 84 days. Different small letter superscripts indicate significant differences ($P < 0.05$) between different salinities within 635 a sampling date. There were no significant differences between sampling times.

**Figure 3.** Number of chloride cells ($mm^{-1}$ of gill filament) in shi drum (n = 5) reared at different salinities (4, 10 and 40 psu) during a period of 84 days. Different capital letter superscripts indicate significant differences ($P < 0.05$) between sampling times, 640 regardless of salinity. There were no significant differences between salinity treatments, either at 42 or 84 days.

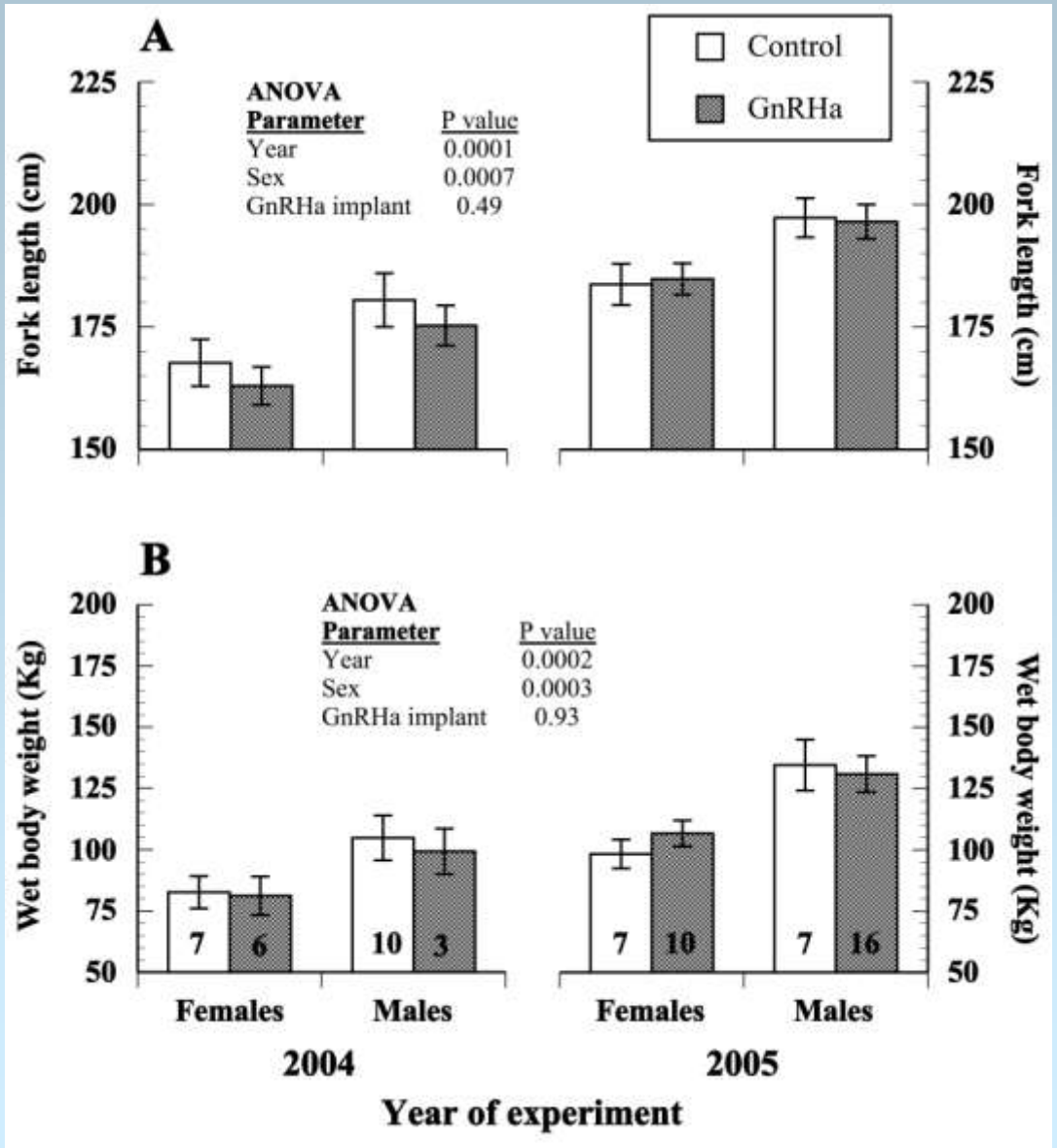
# Graphs


6 meters
20 meters
Water temperature (°C)
28
26
24
22
20
18
16
14
12
10
Mar-2003
Jun-2003
Sep-2003
Dec-2003
Mar-2004
Jun-2004
Sep-2004
Dec-2004
Mar-2005
Jun-2005
Time (2003 - 2005)

# Graphs


ANOVA
Parameter
P value
GnRHa implant
0.0012
Sample time
0.065
Control
GnRHa
900
800
700
600
500
400
Oocyte diameter (µm)
7
6
6
5
n/a
4
2-3
5-6
8
Time after GnRHa implantation (days)

# Graphs


A
Control
GnRHa
ANOVA
Parameter
P value
Year
0.0001
Sex
0.0007
GnRHa implant
0.49
Fork length (cm)
225
200
175
150
B
ANOVA
Parameter
P value
Year
0.0002
Sex
0.0003
GnRHa implant
0.93
Wet body weight (Kg)
200
175
150
125
100
75
50
7
6
10
3
7
10
7
16
Females
Males
Females
Males
2004
2005
Year of experiment

# End of Section 1 – short break??


**Spawning of Pacific bluefin tuna**

# Language

- Write in **past tense** for the results of an experiment or of another study. Use present tense for well-accepted theories or facts.

  For example:

  - (Yes) The study indicated that fish spawned well in captivity.
  - (No) The study indicates that fish spawn well in captivity.
  - (Yes) It is known that most temperate zone fishes spawn once a year in nature

# Language

- Write in **passive voice** and not in the first person.

  For example:

  - (Yes) Blood samples were collected and analyzed using ELISA.
  - (No) We collected blood samples and analyzed them using ELISA.

However, some journals suggest to use first person to make the text shorter and more “active”.

# Language

- **Scientific names** always in *italics*, but other Latin words (*e.g., et al., in vitro, a posteriori, etc.*) may be written in normal text, depending on the journal
- The **common names** of animals are always written in small letters (except birds), with the exception of main names such as Atlantic, Japanese, Pacific, Australian, etc.

  For example:

  - Studies have shown that the gilthead seabream grows slower than the European sea bass in the Mediterranean. On the other hand, the Atlantic bluefin tuna swims faster than the yellowfin tuna

# Language

- A single sentence cannot constitute a paragraph. Either expand further or consolidate with another paragraph.
- Use units with the IU standards (mg $l^{-1}$ not ml/l), but follow format of journal.
- Always leave a space between the number and unit (for example, 10 Kg, 4 min, 9 h) except in the case of temperature degrees and percentage (34° C and 20%)
- Be consistent with the format of scientific names (in or outside parentheses), citations (Name, 1990 or Name 1990; et al. or *et al.*), range of numbers with hyphens (20 - 30 or 20-30), etc.

# Language

- Always **spell out abbreviations** at the first time cited in the Title, Abstract and main text of the manuscript. First the full name and then the abbreviation, never the other way around.

  For example:

  - (Yes) Giving an exogenous dose of testosterone (T) is considered a reasonable method for increasing maleness.
  - (No) In the blood, E2 (17b-estradiol) can be elevated during the reproductive season.

# Language

- The **abbreviations** *i.e.* (that is) and *e.g.* (for example) are usually in *italics* and should not be followed by commas

  For example:

  - Giving an exogenous dose of sex steroids (*e.g.* Testosterone) is considered a reasonable method for increasing maleness.
  - Giving an exogenous dose of the major androgen steroid (*i.e.* 11-Ketotestosterone) is considered a reasonable method for increasing maleness.

# Language

- Spell out **numbers** from one to nine if they are not followed by units, and use Arabic numbers for those above 10.

  For example:

  - (Yes) In the present study 9 fish were used in each of the five therapies used for the study.
  - (Yes) The experiments were repeated at 12 different times during the period of 3 years.

# Language

- Never start a sentence with an **abbreviation** or an **Arabic number**. Spell them out even if already defined.

  For example:

  - (Yes) Luteinizing hormone is the main gonadotrophin in mammals, controlling gametogenesis.
  - (No) LH is the main brain hormone in mammals, controlling reproduction.
  - (Yes) Twenty-fine percent of the population in Greece own a second house.
  - (No) 15 fish were sampled at each monthly sampling.

# Language

- In a **list of terms**, the last one is connected with "and" with or without a comma. Be consisted in the use or not of the comma.

  For example:

  - (Yes) It has been found that fish have three steroids in their plasma during reproduction: testosterone, estradiol(,) and dihydroxyprogesterone.
  - (No) It has been found that fish have three steroids in their plasma during reproduction: testosterone, estradiol, dihydroxyprogesterone.
  - (Yes) It has been found that fish have many steroids in their plasma during reproduction: testosterone, estradiol, dihydroxyprogesterone, etc.

# Language

- **Citation** to a figure, table or another study should be done at the end of the sentence, unless this citation refers to only part of the sentence.

  For example:

  - (Yes) It has been found in both marine and freshwater fish that plasma testosterone increases after a meal and this increase is correlated to increased swimming activity (Stevens, 1978).
  - (No) It has been found in both marine and freshwater fish that plasma testosterone increases after a meal (Stevens, 1978) and this increase is correlated to increased swimming activity.
  - (Yes) It has been found in both marine and freshwater fish that plasma testosterone increases after a meal (Fig. 2) and this increase is correlated to increased swimming activity (Manabu et al., 2008).

# Language

- **"Which"** and **"that"** do not have the same meaning. "Which" indicates cause-effect and it must be preceded by a comma. "That" is more for additional information and does not need a comma.

  For example:

  - Fish did not respond to the treatment, which means that they were not mature yet.
  - Fish did not accept the second type of food that was prepared with marine oils.

# Language

**Verb-subject placement**. The **verb** (v ) must be near the **subject** of a sentence. If you insert a lot of text between the subject and verb, the reader may forget what the subject was.

For example:

- **BAD: The patient's liver readings** [s] at 48 hours after exposure to the virus **had increased** [v] by 50%.
- **GOOD: The patient's liver readings** [s] **had increased** [v] by 50% at 48 hours after exposure to the virus.

# Language

**Stress position**. A reader expects to see what is important at the end of the sentence.

For example:

- **1:** Introduction of the new assembly line **increased manufacturing**.
- **2:** Manufacturing increased after the **introduction of the new assembly line**.

In (**1**), the study looked at the various effects of the introduction of the new assembly line. The key effect that was observed was an increase in the manufacturing.

In (**2**), the study looked at various ways to increase manufacturing. Of these, it was introduction of the new assembly line that had the greatest effect.

# Language

'**Respectively**' is an adverb that is used to mean "in the order given" and can be used to avoid repetition and reduce the length of a sentence.

For example:

- **1:** The tubes containing blood were labeled B and those containing saline were labeled S.
- **2:** The tubes containing blood and saline were labeled B and S, respectively.

# Language

**"Large" and "small"** are used for changes in size, dimensions, or mass. **"High" and "low"** are used for levels or numerical values.

For example:

- **BAD:** A low amount of the brain's capacity is needed for survival instincts.
- **GOOD:** A small amount of the brain's capacity is needed for survival instincts.
- **BAD:** Larger plasma testosterone levels were obtained after hormonal therapy
- **GOOD:** Higher plasma testosterone levels were obtained after hormonal therapy.

# Language

- **Quoting vs paraphrasing**
  - (original from Zohar et al, 2001) In conclusion, it seems that meagre responds quite positively to hormonal induction of spawning with the use of GnRHa implants and its hormonal dysfunction related to reproductive failure is overcome with the use of GnRHa implants.
  - (quoting) According to Zohar et al. (2001) "meagre responds quite positively to hormonal induction of spawning with the use of GnRHa implants" and …..
  - (paraphrasing) In earlier studies, the response of meagre to hormonal induction of spawning was very positive when GnRHa implants were used (Zohar et al., 2001) and …..

# Language

- **Paraphrasing example**
  **Original article**
- Meagre (*Argyrosomus regius*) belongs to the family Sciaenidae and is an euryhaline and benthopelagic species, found mostly in lagoons and river deltas of subtropical climates (Griffiths, 1995). It is a gonochoristic species that does not exhibit sexual dimorphism and has been found to mature reproductively in captivity at the age of 2 for males and 3 for females (Schiavone, 2012), although in nature age at maturity has been calculated to be 5 years for males and 6 for females (González-Quirós, 2011;Morales-Nin, 2012).

# Language

- **Paraphrasing example**
- **Paraphrasing**
- Meagre (*Argyrosomus regius*) is a member of the Sciaenidae family and can be found in various salinities, often in lagoons and river deltas around the Mediterranean Sea (Griffiths, 1995). Males and females are gonochoristic and do not differ in external characteristics, and males and females reach reproductive maturity at 2 and 3-years-old, respectively (Schiavone, 2012), although age at maturity in nature has been reported to be 5 and 6 years for males and females, respectively (González-Quirós, 2011;Morales-Nin, 2012).

# Language

- Avoid using **author names out of parentheses**. These are better placed in parentheses, unless there is really a need to emphasize the name of the author.

  For example:

  - (Yes) The gilthead seabream reproduces annually for a period of 3-5 months (Zohar et al., 1995).
  - (No) Zohar and coworkers (1995) demonstrated that the gilthead seabream reproduces annually for a period of 3-5 months.
  - (Yes) Contrary to what has been know until now (Johnson et al., 1990; Stevens & Brown, 1991; Holland et al, 1993), Zohar and coworkers suggested recently that not all stocks of gilthead seabream reproduce annually for a period of 3-5 months.

# Preparation sequence

1. Prepare Graphs and Tables (This will create the "story or content" of the paper)
2. Prepare the Title page (This will form the "theme" of the paper) Beginning is half of everything!!!!!!
3. Start writing the manuscript
   - Materials & methods
   - Results
   - Introduction (based on the Results you will build the background, justification of the study and its objectives)
   - Discussion (interpret the results, relate to the current knowledge, suggest and justify further research, draw conclusions)
   - References
4. Abstract
5. Read again, and again, and again

# Words of wisdom

"If you prepare an article badly, it will take you **3-times** as long to complete than you planned."

"If you prepare an article well, it will take you only **2-times** as long to complete than you planned."

**It always takes longer than you think!!!**

Καλή επιτυχία!

# How to write a scientific article

## Supporting documents



Constantinos (Dinos) Mylonas
Hellenic Center for Marine Research
Institute of Aquaculture
Crete, Greece

# How to write a scientific article


1. Bibliographic software
2. Table of Contents

Constantinos (Dinos) Mylonas
Hellenic Center for Marine Research
Institute of Aquaculture
Crete, Greece