

# The Embryo Project Encyclopedia Handbook

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## 2- Introduction

One goal of those who participate in the Embryo Project (EP) is to find and implement new ways to *record* the history of embryology, its participants, experiments, processes, concepts, techniques, and its relations to society. A second goal is to explore new methods by which we can *uncover* and *interpret* that history. The EP is a collection of projects designed to achieve one or both of those goals.

One such project designed to help achieve both of the aforementioned goals is the Embryo Project Encyclopedia. First, the EP Encyclopedia *records* embryology's history in new ways. Traditionally, researchers recorded the history of embryology in printed books and journals. The EP Encyclopedia's medium is the internet, so substantially more people have access to the EP Encyclopedia than to the traditional books and journals. The encyclopedia, however, does not replace those traditional outlets. Researchers who work for the EP aim to influence more than just academics; they aim to educate anyone with access to a computer and curiosity about embryology. Entries in the EP Encyclopedia are therefore open access and should be comprehensible to a general audience. Currently, short articles and photographs comprise most of the encyclopedia's entries. However, the editors anticipate your help to learn how to incorporate longer articles, videos, podcasts, and other types of entries, as long as those entries contribute to the EP's goals of recording embryology's history openly and comprehensibly.

The second goal researchers hope to achieve by creating the EP Encyclopedia is the ability to *uncover* and *interpret* embryology's history in new ways. For the EP encyclopedia, the primary method used to accomplish that goal is to link the entries to each other through a system of relationships. As we add more articles to the encyclopedia, clusters of articles will relate to each other in webs, and researchers think that some of those webs will relate information in ways unseen with traditional historiographic methods. The EP Encyclopedia, then, is a kind of experiment. If it yields useful results, researchers could model future projects off its format. If the encyclopedia fails to indicate new webs of information, then it still provides an accessible resource for the general public.

For the EP Encyclopedia to achieve its goals, its articles must fit certain stylistic formats. There are fourteen categories of articles. Each article must delimit a clear topic and category, and each article should include no more than is necessary to understand the topic as an element of its category. Those constraints keep any two articles from being redundant. They also allow for links to bind the articles together in webs of information. If the articles are atomistic, then relationships are like bonds, and the webs are like molecules.

The purpose of this handbook is to help you write atomistic articles that enable the EP Encyclopedia to achieve its two primary goals: to provide open, comprehensible historiographies, and to create related, atomistic entries.

This handbook synthesizes, improves, and replaces previous EP Encyclopedia manuals and style guides. It first introduces the fourteen article categories, provides a strategy for picking and refining topics, provides strategies for writing articles specific to the fourteen categories, and lists the types of relationships that link the atomistic articles. The middle of this handbook provides citation style, general writing style, and specific

points of style commonly encountered. This handbook closes with a list of reviewers' marks and an example of an article ready to submit for editing.

This handbook does not forever circumscribe the EP Encyclopedia. As you will see, we are still learning what to write about, how to write about it, and how to link articles. We hope that future contributors, editors, instructors, and researchers will make this handbook, as well as the encyclopedia in general, more perspicuous, complete, and concise.

### 3- Article Categories

There are fourteen categories of EP Encyclopedia articles. A list of them is below, along with their abbreviations.

- People- Pe
- Experiment- Exp
- Technology- Tech
- Literature- Lit
- Law- Law
- Organization- Orgz
- Concept- Con
- Image- Img
- Organism- Org
- Context- Cxt
- Religion- Rel
- Ethics- Eth
- Award- Awd
- Place- Pl

## 4- The Process of Writing Articles

Below is a description of the general writing process for EP Encyclopedia articles. Before you write an article, you must have at least three bits of information. You must have your topic and the article category it best fits. You must also be able to state clearly why your topic is significant to the history of embryology. Once you have those three bits of information, you can write your article's first draft. The steps described below are general, and different people will take them in slightly different orders.

- a) Do preliminary research.
- b) Pick a topic, and pick a category into which it fits. Beginners should start with a People article to familiarize themselves with the style of the EP Encyclopedia before moving on to more complex categories.
- c) Search the EP Encyclopedia website to see if it already has an entry on your topic. If not, check the Writeboard's list of topics and work with an editor to see if anyone has claimed your topic.
- d) If your topic is free, learn why it is significant to embryo research. Be able to write that significance in one sentence.
- e) Check the table of relationships and read all that apply to your category.
- f) Read the specialized writing guide for your category, and be able to answer most of the questions in that guide.
- g) Research your topic further. Find and read journal articles, developmental biology textbooks, and scholarly books, *not just websites*, to learn about your topic. Those articles and books will comprise your works cited.
- h) Outline your article. Use the specialized writing strategies to help you. Use your statement of significance to help you decide what to include and what to exclude from your article.
- i) Write your article's first draft. Your statement of significance should be in your first paragraph.
- j) Workshop your article.
- k) Revise, revise, revise.

- l) Polish your article. Make sure it follows the format of the sample article at the end of this handbook. The sample articles are only for format, not content or length
- m) Submit your article for editing.
- n) If you get your article back with suggestions for improvements, incorporate them and resubmit your article as soon as possible.
- o) If you are in a writing seminar, once your instructor has approved your work for the class, she will send it to the editing team, who will decide publish it, request extensive revisions from the author with the guidance of an editor, or decline it.

## 5- General Remarks about Style

The EP Encyclopedia's audience is broad. Its articles are for general readers, which may be middle or high school students and graduates, or college students and graduates. As you write, you will face at least two challenges: writing atomistic articles, and making the content accessible. To overcome the second challenge, many must learn to write in a style that differs from much academic writing, be it historical, philosophical, or scientific. As you will see, all articles go through extensive revision processes. People will critique your drafts, and you will critique others' drafts, often in workshops. Take advantage of those workshops as opportunities to learn writing as a craft, the skills of which you can incorporate in later works aimed at different audiences.

Below are some general tips that will help you focus your writing. A good book to read about style is *The Elements of Style* by William Strunk Jr. and Elwyn Brooks White. It is short, cheap, and direct, but imperfect. A second book is William Zinsser's *On Writing Well*, which is longer and fills in some of the gaps found in *Elements*. The tips below partly come from those two books. Once you master them, you will also position yourself well to write for publications other than the EP Encyclopedia.

### Omit Needless Words

Strunk and White's and Zinsser's primary advice is that writers should omit needless words, but they give little direction about which words are needless. There are two primary kinds of needless words. The first class has prepositions like *of, to, about, for, by, as, at, so, in, from, on, off,* and *with*, articles like *the* and *a*, and negative adverbs like *no* and *not*. English has more than one hundred prepositions. You cannot avoid them, but you can limit them. The sentence "Brooks was at the same school as Morgan as a teacher," has three prepositions, two articles and eleven words. The sentence "Brooks taught at Morgan's school," has the same content, but has one preposition, no articles, and only five words. It is clearer than the first, and its verb, 'taught', is more interesting than 'was', the main verb of the first sentence. Prefer sentences like the second.

Short negative adverbs like *no* and *not* are often problematic. They are short, and readers often miss them. If a reader misses a short negative adverb, then she often grasps the opposite of the sentence's meaning. For example: "Sachs did not go to Berlin." If a reader misses the 'not', he wrongly thinks that Sachs went to Berlin. Replace constructions that have negative adverbs with verbs that convey negative action: "Sachs stayed in Würzburg." 'Stayed' also replaces *did* and *go*, which were needless verbs.

Verbs comprise the second class of needless words. Just as you cannot avoid prepositions and articles, you cannot avoid verbs. Good writers pick just the right verbs to shorten their sentences and to engage readers. Many writers dilute their sentences with too many verbs and thus lose their readers' attentions. Think of verbs as your sentences most expensive elements. To omit needless verbs, look for passive constructions and corrupted verbs, which are often nouns writers have constructed from verbs. Gerunds, words with *-ing* endings, are common examples of corrupted verbs.

Take the sentence “With the success scientists have had culturing neon cells, the cells can now be found in many colors.” The sentence has five verbs, *have*, *had*, *can*, *be*, *found*; and one gerund, *culturing*. Corrupted verbs are often the most descriptive parts of sentences. Uncorrupt them to get shorter, more direct sentences: “Scientists cultured neon cells so well that such cells now come in many colors.” That sentence has two verbs, no corrupted verbs, and four fewer words than the original sentence.

The first example sentence in the previous paragraph had a passive construction: “... can be found...” Passive constructions are common in scientific writing. We avoid them for the EP Encyclopedia. They are bad for several reasons. First, they dull your writing such that it bores your readers. Second, they hide your sentence’s subject from your reader. In the example above, who is finding the colors? The active grammatical order for English sentences is subject, verb, object. The subject acts, the verb describes the act, and the object “receives” the action. An active sentence is: “Scientists culture neon cells.” A passive grammatical order puts the object first, followed by several verbs and then the subject. A passive construction is: “Neon cells can be cultured by scientists.” Passive constructions often omit the subject: “Neon cells can be cultured.” Third, passive constructions often complicate your decisions about which EP Encyclopedia relationships to use. Never write passively.

## **Limit Abstractions**

Scientists use abstractions when they write. For example, if you pick up a journal you may find something like: “Reconstruction of bilaterian phylogeny with orthologous Hox genes indicates the likely developmental toolkit of urbilateria.” That sentence uses at least seven abstractions: *reconstruction*, *bilaterian*, *phylogeny*, *ortholog*, *development*, *toolkit*, and *urbilateria*. When you write about science, you cannot avoid abstractions, but you can limit them. Often if you merely replace scientific jargon with everyday words or descriptions, you can avoid abstractions. Try: “As scientists compare Hox genes across species of bilateral animals, they can trace those species’ evolutionary histories to a common ancestor, called urbilateria. Based on those comparisons, scientists can infer those genes that partly caused individual urbilateria to develop into adults.”

If you limit abstractions, you often must take concise sentences and expand them into several sentences. You have at least two strategies to avoid always replacing jargon with explanatory sentences. First, include jargon in parentheses after you introduce its meaning. For example: “...they also trace those species’ evolutionary histories (phylogenies) to a common ancestor...” You may then use ‘phylogeny’ later in your article without adding its definition. Second, each bit of jargon often will need a concept article in the EP Encyclopedia. Rather than detailing each concept necessary to your article, give a quick definition of it, and link the jargon to a concept article, even if someone still needs to write that concept article. For example: “...they also trace those species’ evolutionary histories (phylogenies [relationship]) to a common ancestor...” Not only will those methods keep your articles accessible and atomistic, they will help you identify new articles to write.

Elliott Sober, in the first chapter of his *Philosophy of Biology*, provides many excellent examples of how to introduce abstract concepts and scientific jargon from easier concepts and everyday objects. See his book for ideas about how to introduce scientific jargon.

### **Count Your Words per Sentence**

The fewer words you have in each sentence, the more likely you are to write clearly. Measure sentence length by words per sentence. Most writers have a sentence length after which their grammar and clarity deteriorate. Few write well with more than thirty-five words per sentence. If you don't know your ideal sentence length, assume it is twenty words per sentence. As you write, make sure all of your sentences have fewer than twenty words. Once you consistently write grammatical, clear sentences of fewer than twenty words, change your limit to twenty-five words per sentence. Gradually increase your limit by five words. You may switch from twenty to thirty words per sentence within a year, but spend the rest of your life working to get to forty words per sentence. When you can write well with fifteen, twenty, twenty-five, etc. words per sentence, you will be able to write paragraphs with sentences of different lengths. Much of the art of writing involves a feel for how to control tempo, and one method to control tempo is combining sentences of different lengths.

Writing short sentences is harder than it at first sounds. As you work to write short sentences, identify the subject, verb, and object before you write each sentence. Restart a sentence until you get it right.

### **Take Special Care with Your First Paragraph**

EP Encyclopedia articles tend to be short, so their first paragraphs are especially important. The easiest thing readers can do is stop reading. If your first paragraph is strong, you decrease the chance that they will navigate away from your article. First paragraphs should clearly answer the five w's that circumscribe your topic.

What or who is your topic?

Where was or is your topic?

When was your topic extant and significant?

Why is your topic significant to embryology's history? (The answer to that question is your significance statement.)

The last question is important from research, writing, and reading perspectives. An encyclopedia entry about Charles Darwin could include many different facts. If you start by answering why Darwin is significant to embryology's history, you may ignore, for purposes of research and writing, Darwin's work on barnacles. The why-question, then, circumscribes your topic more than the other questions.

Avoid cheesy introductory sentences. Good encyclopedia articles open without hooks, but with strong factual statements.

Introduce your topic with examples of concrete things, not abstract concepts. If your topic is birth control pills, talk about women, and pills, and why the former take the latter. Do not talk about “the halting of zygote implantation”. Start with things you can point to in space and time, and introduce abstractions in later paragraphs.

Keep your first few paragraphs short. Short paragraphs are easier than long ones to read on the webpage.

### **Structure Your Article**

Your article need not tell a story, but it must have structure. A list of facts is inappropriate. Before you write, outline your article. Again, the key information that will help you is your topic’s significance for embryology’s history. Your statement of significance acts, in a way, as your article’s thesis statement. Include mostly information that establishes the truth of your significance statement.

As you outline, think about your paragraph’s goals. Ultimately, your paragraphs should combine to establish the truth of your significance statement. For each paragraph, ask yourself, “How does this paragraph help establish my significance statement?” When you can answer that question for each outlined paragraph, order them. Different kinds of orders work best for different purposes. Chronological orders work well for biographies. Orders of increasing abstraction, from concrete particulars to generalizations, work well for concept articles. The specialized writing guides will help you organize your paragraphs.

Paragraphs, like sentences, are often clearer when short. Furthermore, long paragraphs are hard to read on the EP Encyclopedia’s website. Strive to keep your initial paragraphs about four or five sentences long. Avoid paragraphs longer than seven or eight sentences. As with sentences, if you think about paragraphs’ lengths, and combine different lengths felicitously, you will write gracefully and control tempo.

### **Final Notes**

The suggestions or rules above do not define all good writing. You will find many expert writers who break some of those rules. The difference between expert writers and bad writers is that expert writers break the rules for reasons, while bad writers break the rules because they don’t know any better. If you can display your mastery of the rules, you join the class of able writers, and you are free to break them.

For the EP Encyclopedia’s purposes, if you use the rules as much as you can, you will write accessible, atomistic articles. Those are the encyclopedia’s goals, so focus your writing with the above suggestions.

Never use clichés. Relying on the ways cookies crumble or canaries die in coal mines is lazy and presumptuous. Describe events clearly and originally.

Read your articles out loud to yourself. Doing so will help you catch sentences that are too long and bad transitions between sentences and paragraphs.

Finally, if you get help from university writing centers, you will write better articles.

## 6- Specialized Writing Guides

The guides on the following pages will help you organize your article. The questions provide entry points for research and ideas about how link to other EP Encyclopedia articles. Do not treat the guides as checklists, but as starting points to organize your articles.

Some categories of articles are easier to write than others, especially for beginners. People, Experiment, and Technology are good articles for beginners to write. Sets of them are also good bases for Organization, Concept, and Context articles. As you start writing your first articles, or you start writing new clusters, start by writing articles of the first three kinds, and then build from them to other kinds of articles. A good strategy is to pick a person for a People article, read her primary works related to embryology, read key secondary literature about her, and then write the article. Then, based on her primary works, which you have already read, write Experiment, Literature, and Technology articles.

The criteria for each category are suggestions to help you research your topic and order your article. Your topic may not meet all of the criteria. If you cannot answer many of a category's questions for your topic, then consider different categories.

The formats and paragraph numbers are also suggestions. Once you learn how to write EP Encyclopedia articles, then you may write your articles with formats different from the suggested ones.

## Specialized Guide for PEOPLE Entries

### Notes:

- Always start your research for People entries by checking the Dictionary of Scientific Biography and the National Academy of Sciences online biographies. Also, you should read several of the person's authored works that are significant for embryology's history before you write – books, research articles, popular articles, etc.
- This guide focuses on scientists, but People entries can be about non-scientists.

### Good Examples:

- Hans Spemann (1869–1941)
- Lewis Wolpert (1920– )

### Title

Use the full name of the person. List the name in order of given, middle, and family name. After the name, include their birth and death years in parenthesis. For people who are still alive, leave the death year blank. Use en dashes to separate the years. Follow the examples under **Good Examples**.

### Introduction (~1 paragraph)

#### *Identify the Person.*

- What was or is the full name of the person? If the name is in a language other than English, report both the original name and the English translation.
- When and where did the person live? In what major institutions did she work?
- What were the person's important experiments, technologies or concepts that are relevant to the description of the person's work?
- Why is the person important to embryology's history? What are her main contributions?

### Body (~5-10 paragraphs)

#### *Retell the person's history in chronological order.*

Address the following questions:

#### *Personal life, family history and personality:*

- Who were the person's parents? Name the mother and father, and list the mother first. How was the person's childhood, if relevant? When and where was the person born? How many siblings? Did the person marry? If so, whom?
- Where did the person go to school? What kinds of degrees did the person earn? With whom did the person study? What are the main features of the person's personality? How did they influence her life and her career?

***Scientific Career and Achievements:***

- Did the person research? What kind of research did the person do?
- What important aspects of the person's research applied to embryology or development? Briefly describe that research. Rely on original sources, such as the articles in which the person published her findings.
- Did the person invent any instrument or procedure important to embryology? Did she contribute to the understanding of specific mechanisms or to the discovery of specific entities? Did the person shape or modify key embryological concepts? If so, which ones?
- With whom did the person collaborate? With whom did the person debate, and why and about what?
- Did the person write important books or articles? What is their title? What are they about? Be specific.
- What are the major institutions where the person worked? Did the person help form any organizations? If so, which? Did she contribute to the growth of preexisting institutions?
- Did the person win any awards? If so, which ones? Is there any institution named after the person?

***About the person:***

- Are there important biographies about the person? Which ones? Who are the authors and what kind of perspective do they provide on the person's work?
- Are the person's achievements contentious or still debated? If yes, why, and by whom? Report the main aspects of the debate.

**Conclusion (~1 paragraph)**

Summarize the person's contributions to embryology, and reiterate why she is significant to embryology's history.

## Specialized Guide for EXPERIMENT Entries

### Notes:

- Entries that detail specific journal articles about experiments are best as Experiment entries, and not Literature articles.

### Good Examples:

- “On the Nature of the Process of Fertilization and the Artificial Production of Normal Larvae (Plutei) from the Unfertilized Eggs of the Sea Urchin” (1899), by Jacques Loeb
- China’s First Baby Conceived through In Vitro Fertilization-Embryonic Transfer (1988), by Zhang Lizhu

### Title

If the topic is from an experiment(s) reported in a single journal article, title your entry with the title of the journal article in quotes, followed by the publication year, a comma, ‘by’, and the researchers’ names. For example, see the first bullet under **Good Examples**.

For topics not confined to single journal articles, use a common title for the experiment, but still include the experiment’s year(s) and the name(s) of the experimenter(s). For example, see the second style under **Good Examples**.

### Introduction (~1 paragraph)

*Identify the experiments.*

- What is the full name of the experiments? If its original name was not in English, provide the original name. If the experiment has both a scientific and a more common name, mention both.
- What was the phenomenon investigated in the experiments? What was the problem addressed? What were the main results of the experiments?
- Who conducted the experiment? Use full names. When, where, and by whom was it published?
- Why is the experiment important to the history of embryology?

### **Body I (~2 paragraphs)**

*Provide historical and conceptual background to understand the experiments.*

- Who conducted the experiments? Provide basic information about the scientist or the group of scientists.
- What were the specific phenomena that the scientists investigated through the experiments? Be specific. Did the experiments contribute to the discovery of new entities? Be specific. Did the experiments contribute to the understanding of specific mechanisms? How?
- What concepts, theories, and ideas constitute background for the understanding of the experiments? What were the main ideas about the phenomenon at the time the experiments were performed? How did the experiment's results help change them?
- In what institutional context did the scientists conduct the experiments? Be specific. When, in what country and in what historical period?
- Where are the experiments first described and by whom? In what book or article? Did other articles refer to the experiments in the history of embryonic research?

### **Body II (~ 3 paragraphs)**

*Describe the experiments.*

- What procedures did the scientists use to conduct the experiment? Be specific and provide a description of the experiment or set of experiments. Be specific.
- Did the researchers test hypotheses? If so, what were they? If not, what other questions were the researchers asking that motivated their investigations?
- What were the instruments used in the procedure?
- Were there specific difficulties that the scientists needed to face in the experiments, technical difficulties, noise factors, or other? How did the scientists overcome them?
- What kind of data did the scientists collect? What kind of observations were they able to obtain? Were the observations unambiguous? Were they contentious? Have other experiments confirmed or overturned the results?

### **Body III (~2 paragraphs)**

*Describe impact and consequences of the experiment.*

- What were the reactions in the scientific community of the time to the results of the experiments? Are the experiments important for disciplines other than embryology? Are the experiments still mentioned today in the scientific community?
- Has there been opposition to the results of the experiments? Was there a debate about their interpretation in the society of the time? What was the reaction of religious organizations or other social and political institutions?

### **Conclusion (~1 paragraph)**

Summarize the contribution of the experiments to embryology, and reiterate why it is significant to embryology's history.

## **Specialized Guide for TECHNOLOGY (Techniques and Instruments) Entries**

### **Good Examples:**

- Fate Mapping Techniques;
- Alexis Carrel's Tissue Culture Techniques and Hanging Drop Tissue Culture
- Laparoscope

### **Title**

Use the name of the Technology.

### **Introduction (~1 paragraph)**

*Identify the technology.*

- What was the full name of the technology? If its original name was not in English, provide the original name. If the technology has both a scientific and a more common name, mention both.
- Who invented the technology? When and where was it invented, and for what purposes?
- Why is the technology important to embryology's history?

### **Body I (~2 paragraphs)**

*Provide historical background to understand the technology.*

- Who, in more depth than the first paragraph, invented the technology? In what institutional, cultural and social contexts? Be specific.
- What was the main function of the technology? What were the specific phenomena that it helped to individuate/explain? What concepts, theories, ideas, or other technologies constitute background for the understanding of its invention?
- Where is the technology first described and by whom?
- What experiments have made use of the technology in the history of embryonic research? In what articles were these experiments reported?

### **Body II (~ 3 paragraphs)**

*Describe the technology in detail.*

*(a) for techniques/procedures (~ 3 paragraphs)*

- What are the steps of the procedure? Did it change over time? How?
- What are the instruments used in the procedure? Did they change over time?

*(b) for Instruments (~3 paragraphs)*

- What are the parts of the instrument? How are they assembled? Be specific.
- Is the instrument the improvement version of an older one? If yes, of which one and how?
- In what kind of procedures did scientists use the instrument?

**Body III (~2 paragraphs)**

*Describe impact and consequences of the technology.*

- What were the reactions in the scientific community to the invention of the technology? Is the technology important for disciplines other than embryology? Is the technology still used today?
- Was the use of the technology contentious? Is it contentious now?
- What was the reaction of religious organization or other social and political institutions to its use? What are their positions now?

**Conclusion (~1 paragraph)**

Summarize the contribution of the technology to embryology, and reiterate why it is significant to embryology's history.

## Specialized Guide for LITERATURE Entries about Books

### Notes:

- Recent books can be problematic as subjects of EP Encyclopedia entries. The more recent the book is, the harder it is to identify its significance for embryology's history. If you pick a recent book, look for reviews, popular press articles, and science outreach articles that describe and contextualize it. Those sources will help you identify the significance your topic has for embryology's history.
- Verb tenses for Literature entries are tricky. When you talk about the history and context of the literature, use past tense. When you talk about the content of the literature, you may use present tense. An example, with differently tensed verbs italicized: "Thomas *published* his book in 1934. In the book, he *argues* that fish *eat* too many tadpoles."
- Movies also follow the format below.

### Good Examples:

- *Form and Function* (1916), by Edward Stuart Russell
- *Artificial Parthenogenesis and Fertilization* (1913), by Jacques Loeb

### Title

Use the title of your book in italics as the title of your EP entry, followed by the year of publication in parentheses, then a comma, then 'by', and finally the primary authors' names.

### Introduction (~1 paragraph)

#### *Identify the book.*

- What is the full name of the book? If the title was in a language different than English, report first the original title and then the English translation.
- Who was (or were) the author(s)? Include both the person's full name and literary name if the two differ.
- When, where, and by whom was the book published? List all publishing details, including number of editions.
- Why is the book important to embryology's history?

### **Body I (~2 paragraphs)**

*Provide context for the understanding of the book and of its significance to the history of embryology.*

- What kind of book is it? Is it a scientific book, a novel, an encyclical letter or something else? In what language was the book written? Was the book translated into other languages?
- What is the main topic of the book? How is the topic addressed?
- Who is the author? Where did she live and where did she work? Was she affiliated with an institution? Was she influenced or motivated by any specific people, theories, or beliefs? What were her intentions while writing the book?
- Did other literature or experiments important to embryology's history influence the book? If so, which? Be specific?
- Who was the intended audience of the book? Has the audience changed over time? Is it a book for specialists? Is it a popular book?

### **Body II (~3 paragraphs)**

*Describe the book in detail.*

- How many chapters compose the book? How is it organized?
- If it is a collected work, summarize the most important contributions. Be specific.
- Summarize the content and main theses of the single chapters.
- Is it one volume or more? Does the book contain relevant images or graphs? What is the cover of the book?
- Are there different editions of the book? Did the organization of the book change in the different editions? Did the author introduce new chapters or sections?

### **Body III (~ 2 paragraphs)**

*Describe reception/impact of the book.*

- What impact did the book have at the time of its publication? How did the scientific community receive it? Was the book important outside a community of specialists? If so, where, and why?
- What was the book's impact in the society of the time? Were there important reviews of the book? Did the book provoke important debates?
- What is the history of its circulation? What is the importance of the book now? Who refers to the book? In what way do people refer to it?
- Did the book influence further publications by the author that were important to the history of embryology? If so, which?

### **Conclusion (~1 paragraph)**

Summarize the contribution of the book to embryology, and reiterate why it is significant to embryology's history.

## Specialized Guide for LITERATURE Entries about Articles

### Notes:

- Entries that detail specific journal articles about experiments are best as Experiment entries, and not Literature entries.
- Recent literature can be problematic as subjects of EP Encyclopedia entries. The more recent a piece of literature is, the harder it is to identify its significance for embryology's history.
- Verb tenses for Literature entries are tricky. When you talk about the history and context of the literature, use past tense. When you talk about the content of the literature, you may use present tense. An example, with differently tensed verbs italicized: "Thomas *published* his article in 1936. In the article, he *argues* that fish *eat* too few tadpoles."
- Television episodes also follow the format below.

### Good Examples:

- "The Chemical basis of Morphogenesis" (1952), by Alan M. Turing.
- National Geographic Channel's "In the Womb," (2005)

### Title

Use the title of the article as the first part of your EP Encyclopedia entry's title, followed by the year of the publication in parentheses, a comma, 'by', and finally the primary authors' names. Put the article's name in quotes. For example, "**Induction and Patterning of the Primitive Streak, an Organizing Center of Gastrulation in the Amniote**" (2004), by Takashi Mikawa, Alisa M. Poh, Kristine A. Kelly, Yasuo Ishii and David E. Reese

### Introduction (~1 paragraph)

*Identify the article.*

- What was the full name of the article? If the original title was in a language different than English, report the original title.
- Who are the authors? When and in what journal or in what book was the article first published? List all publishing details.
- Why is the article important to embryology's history?

### Body I (~1 paragraphs)

*Provide context for the understanding of the article and of its significance to embryology.*

- What is the article about? Is it a review article or a research paper?
- How do the authors address their topics? What were their stated motivations? Were they working at the same institution?
- What other literature, technologies, or experiments important to the history of embryology influence the article? Be specific.

**Body II (~3 paragraphs)**

*Describe the article in detail.*

- What are the main parts of the article? How did the authors organize the article? Be specific.
- What is the content of the article? What are the conclusions of the article? Be specific.

**Body III (~ 2 paragraphs)**

*Describe the reception/impact of the article.*

- What impact did the article have at the time it was published? Is it a highly cited article? How did the scientific community receive it? How did other communities receive it?
- Is the article still cited? In what way do people refer to it? Are there important, historical works talking about the article and its authors? Did the article lead to future work by the authors? If so, which works?
- What other literature important to embryology's history did the article influence?

**Conclusion (~1 paragraph)**

Summarize the contribution of the article to embryology, and reiterate why it is significant to embryology's history.

## Specialized Guide for LAW Entries about Case Laws

### Notes:

- Read the original ruling before writing your entry. You can find it on LexisNexis. Do not rely solely upon others' interpretations of the initial ruling.
- Italicize case law names, and their abbreviations, in your text. Do *not* italicize them in the title or bibliography of your entry.
- Court systems differ by state, and between state federal levels. You will have to understand the court hierarchy relevant to the jurisdiction in which your case was tried.
- A complete list of the federal court system is located here:  
<http://www.library.unt.edu/govinfo/assets/images/judicialorg.gif/>.
- Here is an example of the court system for Virginia:  
[http://www.courts.state.va.us/courts/orgchart\\_jud\\_system.pdf](http://www.courts.state.va.us/courts/orgchart_jud_system.pdf).
- Do not use the terms 'plaintiff' and 'defendant', as they differ as the case goes through the different levels of the court system. Refer to the litigants with their names.

### Good Examples:

- United States v. University Hospital (1984)
- Weber v. Stonybrook Hospital (1983)

### Title

Use the title of the case, followed by its year in parentheses.

### Introduction (~1 paragraph)

*Identify the case.*

- What is the case's name and when was it decided?
- Where was the case decided and at what level (e.g. state appellate court, state supreme court, US Supreme Court, etc.)?
- What was the ruling/holding/finding?
- Why is this case significant to the history of embryology? Explain in one or two sentences.

### Body I (~1-2 paragraphs)

*Provide context to understand the case and its significance to embryology.*

- What was the basic issue that caused someone file a suit? Describe the main facts of the case. Who were the parties involved? Explain who each of the litigants were.
- If the case is challenging the constitutionality of a statute, what is the name of that statute, and what does that statute say? Who enacted the statute and when?
- On what precedents did the case rely? When and where were they decided?
- Does the case fit into a social or scientific context? If so, which, and how? Be specific.
- Where the any *amicus curia* briefs? If so, who authored them and what did they argue?

## **Body II (~2-4 paragraphs)**

*Describe the legal process in detail.*

- Trace the case's history of decisions through lower courts. Include relevant dates, rulings, and judges.
- What key legal and scientific concepts were used in the case's history and who introduced them?
- Did the case rely on any testimony from scientists? If so, whom, and what was the content of that testimony?
- Did the case rely on any literature that was important to the history of embryology? If so, what was the literature?
- If the case relied on precedents, how did the new decision affect how judges use the old precedents?
- Who were the judges that authored the decision, what was the vote of the court, and were there any famous dissenters? If so, why did they dissent?

## **Body III (~2-3 paragraphs)**

*Describe the reaction/impact of the case.*

- What was the scientific and/or social impact of the case ruling?
- Was the case appealed? If so, when, by whom, and to what court? Did the court accept the appeal, and if so, what was the decision? If one of the litigants appealed and the appellate court rejected the case, include that as well.
- How has understanding of the case's ruling been used through time? Did the case become an important precedent for other laws? If so, which laws?
- Has any literature important to the history of embryology been published regarding the case? If so, what is it, who authored it, and why is it important?
- Is the finding of the case still valid in its jurisdiction? Have courts of similar jurisdiction decided similarly?
- What became of the litigants involved in the case?

## **Conclusion (~1 paragraph)**

Summarize your topic's contributions to embryology, and reiterate why it is significant to embryology's history.

## Specialized Guide for LAW Entries about Promulgations

### Notes:

- Promulgations include legislation, executive orders, statutes, codes, etc.
- Read the original law before writing your entry. Do not rely solely upon others' interpretations of the law.

### Good Examples:

- The Baby Doe rules (1984)

### Title

Use the title of the law, followed by its year in parentheses. If the law has a common name, use it in the title, but cite the technical name in the sources.

### Introduction (~1 paragraph)

#### *Identify the law.*

- What is the law's name and when was it passed?
- Who passed the law, and what was its jurisdiction?
- What did the law say or regulate?
- Why is the law significant to the history of embryology? Explain in one or two sentences.

### Body I (~1-2 paragraphs)

#### *Provide context to understand the case and its significance to embryology.*

- What was the basic issue that caused someone author the law?
- Who authored the law, and when?
- Did the law rely on any previous laws or literature important to the history of embryology? What were they? How did the new law affect previous laws?
- How does the law fit into a scientific context?
- Was the law associated with any organizations, organisms, or technologies? If so, which, and why?
- How did the law come to be passed? Was the process long and vitriolic, quick, or other?

### Body II (~1-3 paragraphs)

#### *Describe the law in detail.*

- Detail what the law says.
- What key legal and scientific concepts were used in the law and who introduced them?
- Did the law rely on any input from scientists? If so, whom, and what was the content of that input?

**Body III (~1-3 paragraphs)**

*Describe the reaction/impact of the law.*

- What was the scientific and/or social impact of the law?
- Did the law cause anyone to file a lawsuit? If so, when, by whom, and to what court? Did the court accept the suit, and if so, what was the decision? Did the suit have an appellate process? If so, briefly describe that process. If one of the litigants appealed and the appellate court rejected the case, include that as well.
- How has understanding of law been used through time? Did the law become an important influence for other laws? If so, which laws?
- Has any literature important to the history of embryology been published regarding the law? If so, what is it, who authored it, and why is it important?
- Is the law still valid in its jurisdiction? If not, explain why
- What became of the primary people involved in the law?

**Conclusion (~1 paragraph)**

Summarize your topic's contributions to embryology, and reiterate why it is significant to embryology's history.

## Specialized Guide for ORGANIZATION Entries

### Good Examples:

- The Eugenics Record Office at Cold Spring Harbor Laboratory (1910–1939)
- The Marine Biological Laboratory
- Advanced Cell Technologies, Inc.

### Title

Use the name of your organization as the title of your EP article. If you are writing about a organization that does not exist anymore, include its years of activity into brackets. For example, look at the first title under **Good Examples**.

### Introduction (~1 paragraph)

*Identify the organization.*

- What was the full name of the organization? What kind of organization was it, a university, a research institute or something else? If the name was in a language different than English, report first the original title and then the English translation.
- When, where, and by whom was it first established? Be specific. What are the main steps in its historical evolution?
- Why is this organization important to embryology's history?

### Body I (~ 2 paragraphs)

*Provide a description of the creation of the organization and of the historical and cultural background.*

- Who are the creators of the organization? Where did they live and work? Were they affiliated to other institutions? Were they influenced or motivated by any specific people, theories, beliefs, religions or movements?
- What concepts, theories, or ideas motivated the creation of the organization? What were the intentions that led to its creation? What was its initial function? Was it a research institution? If yes, what kind of research did people do at the organization?
- What kind of funding established the organization? Did other organizations affect the creation of the organization? Which ones, and how?

**Body II (~2 paragraphs)**

*Describe the historical development of the organization.*

- What are the main stages in the development of the organization? Did the organization change significantly over time? If yes, how and why? According to what ideas? Depending on what social and historical circumstances?
- Who held significant leadership roles in the organization? Include full names, specific job, titles, dates of appointment, and any other useful information.
- Who were the main people that worked at the organization? How did they contribute to the history of embryology with their research?
- Are there any concepts or ideas or discoveries that developed specifically in that organization? important technologies did people invent while at the organization?
- Are there important journals or books that published by the organization?

**Body III (~ 2 paragraphs)**

*Describe the relationship of the organization to other institutions in the society of the time.*

- What impact did the organization have in the society of the time? Did the impact change over time?
- Did the agenda of the organization conflict with the ideas of religious institutions or other political or social organizations?
- Did the kind of work done at the organization provoke important debates? Are there important monographs or article that discuss with those issues?

**Conclusion (~1 paragraph)**

Summarize the contribution of the organization to embryology, and reiterate why it is significant to embryology's history.

## Specialized Guide for CONCEPT Entries about Mechanisms or Entities

### Notes:

Concept article are difficult for people new to the EP. We recommend you write

### Good Examples:

Mechanisms:

- Gastrulation in *Xenopus*,
- Human Meiosis

Entities:

- Bicoid
- Stem Cells
- The Carapacial Ridge (CR).

### Title

Use the name of the mechanism or entity.

### Introduction (~1 paragraph)

*Identify the mechanism or entity.*

- What is the name of the mechanism or entity? Does it have both a scientific and a more common name, for instance one due to its discoverer? Provide both.
- What are the main features of the mechanism or entity?
- Who are some key people associated with the concept?
- Why is the mechanism or entity important to the history of embryology?

### Body I (~2 paragraphs)

*Contextualize (conceptually and historically) the mechanism or entity.*

- Who discovered the mechanism or entity, and when? Did those scientists receive awards for their investigations? In what historical periods did they operate? In what institutions?
- What kind of instruments allowed the discovery of the mechanism or entity? Are there important experiments that facilitated the discovery?
- What are the most important publications that explain or elucidate the mechanism or entity?
- Did ideas of the entity or mechanism change over time? If the mechanism or entity has a long history as object of scientific inquiry, mention the most important steps of its investigation.
- What other concepts are important to understand the topic?

## **Body II (~3 paragraphs)**

*Describe the current understanding of the mechanism or entity.*

In the description, refer to the most relevant and recent articles or books on the topic.

(a) for *entities*:

- What kind of entity is it (molecular, genetic, cellular)? What are its main characteristics?
- In what kind of mechanisms does the entity operate? At what level of biological organization? Be specific.
- What are the most recent instruments that facilitate the investigation of the entity?
- What happens if the entity has some structural or functional defects? Are there specific diseases that derive from these defects? Be specific.

(b) for *mechanisms*:

- What are the main parts that constitute the mechanism? How does the mechanism operate? At what level of biological organization? Is it a genetic, cellular or evolutionary mechanism?
- What are the main stages that characterize the operation of the mechanism? Be specific.
- What happens if the mechanism does not work properly? Are there specific syndromes or disorder that derive from a defective operation of the mechanism?

## **Body III (~2 paragraphs)**

*Describe if and how investigations of the mechanisms caused public debates*

- Did the investigation of the mechanism or entity cause debate in the scientific community?
- Does the investigation of the mechanism or entity raise ethical questions? If yes, in what context and why?

## **Conclusion (~1 paragraph)**

Summarize the importance of the mechanism or entity to the history of embryology.

## Specialized Guide for CONCEPT Entries about Theories and Movements

### Good Examples:

- Ovism
- Spermism
- Preformationism in the Enlightenment

### Title

Use a common name for the theory or movement, include a time period, if it is relevant.

### Introduction (~1 paragraph)

*Identify the theory or movement.*

- What was or is the full name of the theory or movement? If the name is in a language other than English, report both the original name and the English translation.
- Who are the most important people or institution that contributed to the theory or movement?
- When and where was the theory or movement created? When and where did it develop?
- What was the theory or movement about?
- Why is this movement or theory important to embryology's history?

### Body I (~2 paragraphs)

*Describe the origins and development of the theory or movement.*

- Who are the main people that contributed to the elaboration of the theory or movement? When did they live? Where did they work? In what institutions? Be specific.
- Did the theory or movement spread quickly? Why or why not? Did it find resistance in the scientific community of the time? If so, why?

### Body II (~2 paragraphs)

*Describe the main conceptual aspects of the theory or movement.*

- What were the main problems that the theory addressed? What were the specific embryological phenomena that it helped to individuate/explain? What were the main ideas and values that characterized it?
- Did the theory or movement oppose other specific theories and movements? If yes, which ones? Did the theory or movement represent the evolution of an old one? If so, what were the older theories that it referred to?
- What are the kinds of results produced by the use of the theory? Are there important experiments that were performed by proponents of the theory or movement? Are there important publications?
- Are there specific instruments or procedures that people developed to test or apply the theory?

**Body III (~2 paragraphs)**

*Describe the Reaction to the theory or movement.*

- Did the theory or movement stimulate debate in the society of the time? Did it address issues that were ethically contentious?
- Did the movement have a political agenda? Did it contribute to the creation of important institutions? Do those institutions still exist?
- Do religious or social institutions express an opinion about the theory or movement?
- Did the theory or movement influence the production of specific laws?

**Conclusion (~1 paragraph)**

Summarize the contribution of the theory or movement to embryology, and reiterate why it is significant to embryology's history.

## Specialized Guide for CONCEPT Entries about Diseases, Syndromes, and Disorders

### Good Examples:

- Effects of Prenatal Alcohol Exposure on Ocular Development
- Conjoined Twins
- Niemann-Pick Disease

### Title

Title your entry after the most commonly used name for the disorder, be it vernacular or scientific. If the most commonly used name is scientific, you may include a common vernacular name in parentheses after the scientific name, and vice versa.

### Introduction (~1 paragraph)

*Identify the disease, syndrome, or disorder.*

- What is the name of the disease, etc.? Does it have both a scientific and a more common name, for instance one due to its discoverer? Report both.
- What are the main features of the disease? Provide a definition and a brief description of its causes and of its consequences.
- Why is the disease important to embryology's history?

### Body I (~2 paragraphs)

*Provide the conceptual and historical context for the understanding of the disease, etc.*

- Who are the most important scientists or personalities that contributed to the understanding of the disease? When and where did they work? Did they publish their results? Did they receive important awards?
- What are the main experiments that facilitated our understanding of the causes of the disease? Did our understanding of the disease change over time?
- What kind of instruments and procedures were used for the prevention or cure, if any, of the disease? Are they actually effective? Did they change over time?

### Body II (~4)

*Describe the current understanding of the disease*

- What is the current explanation for the occurrence of the disease? Do we know the mechanisms that cause? Be specific.
- How does the disease develop? How and when in the process of development is it possible to detect it? Through what kind of instruments and procedures?
- Are there standardize procedures to cure or prevent the disease? Who invented them? When?
- Is there consensus in the scientific community about the cures of the disease? If not, present the main ideas and highlight the areas of conflict.

**Body III (~2 paragraphs)**

***Legal and ethical issues about the syndrome***

- What is the position of major religious authorities about the cures or the prevention of the disease?
- Are there laws that specifically regulate the cure or prevention of the disease?

**Conclusion (~1 paragraph)**

Summarize the main characteristics of the disease, and reiterate why its investigation is significant to embryology's history.

## Specialized Guide to Writing IMAGE Entries

### Good Examples:

- Images of Embryos in *Life Magazine* in the 1950s
- Hartsoeker's Homunculus Sketch from *Essai de Dioptrique* (1694)

### Title

Titling EP entries about Images can be difficult. Use the title of the image EP article, followed by a comma, 'by', the primary creators' names, and the year of the publication parentheses. If that format will not work, follow one of the examples above, or create one specific to your topic. Make sure you include year(s) in the title.

### Introduction (~1 paragraph)

*Identify the image.*

- What does the image portray? What is it about?
- Who created the image? Include the person's full name and the date of creation.
- How was the image created? Briefly introduce basic information about the medium. Is it a photograph, oil painting, sculpture, digital, or other?
- Why is the image important to embryology's history?

### Body I (~2-4 paragraphs)

*Provide the historical and cultural background for the understanding of the image.*

- What were the specific topics that the image portrayed?
- Why did someone create the image? Was it for educational, artistic or other reasons? Who influenced the image's creation? Be specific.
- What concepts, theories, ideas, or movements constitute background for the understanding of its creation? What ideas or concepts did the image advance?
- What was the intended audience of the video? Who was supposed to use the image?
- Who created the image? Where and when?
- How was the image created? Elaborate on techniques and tools involved in the image's creation, *e.g.*, new photographic techniques, microscopy, etc.
- Did the image appear first on a textbook, in a journal article, in the personal files of an artist or scientist, or other? Provide full names for those who have owned the image or original video.
- Did the artist or creator collaborate with anyone?

### Body II (~2-3 paragraphs)

*Describe the image.*

- What does the image portray exactly? What are the peculiarities of the image?
- What features of the image are relevant to the history of embryology? Be specific.

**Body III (~1-3 paragraphs)**

*Describe impact and consequences of the image.*

- Chronologically trace the history of the places that displayed the image: magazines, books, journals, newspapers, art galleries, museums, the internet, text books, etc.
- What were the reactions in the scientific community to the production of the image? Is the image important for disciplines other than embryology? Is the image still displayed or used today?
- Was the image contentious because of its content? Is it contentious now? What was the reaction of religious organization or other social and political institutions to its production? What are their positions now?

**Conclusion (~1 paragraph)**

Summarize the image's contributions to embryology, and reiterate why it is significant to embryology's history.

## Specialized Guide for CONTEXT Entries

### Notes:

- Context articles are especially difficult. You cannot write them well until you understand how the EP Encyclopedia relationships work, and have written many accessible, atomist articles. For those reasons, we student contributors may not write Context articles unless they have already fully developed an interrelated cluster of articles.
- Consider focusing on a scientific context, a political context, a religious context, etc.

### Good Examples:

- China's One Child Policy
- Reassessment of Carrel's Immortal Tissue Culture Experiments

### Title

There is no formula for titling context articles. Work for something that captures the breadth of the period, and try to include the period in the title.

### Introduction (1-2 paragraphs)

#### *Identify the context.*

- Introduce the context in one or two sentences.
- Why is this context important to embryology's history? Explain in one or two sentences.
- How did this context come to matter in embryology? Include dates and consider the relevant social, political, cultural, and scientific actors that influenced its creation, interpretation, and implementation.
- How has the meaning of the context changed over time? Who and what influenced this change?

### Body (*many* paragraphs)

#### *Describe the context.*

- Describe the social, cultural, political, and/or scientific factors that influenced the context. Explain its history. What individuals or institutions promoted its use, definition, or meaning, and for what purposes?
- Who was part of the context? Which experiments, technologies, locations, organizations, concepts, literature, laws, and religions constituted the context?
- Describe how its interpretation has changed over time as a reflection of the interactions between individuals and institutions relevant the context's history.
- What other contexts, problems, theories, or ideas influenced the creation of context?
- What other contexts emerged?

### Conclusion (~1 paragraph)

Summarize your topic's contributions to embryology, and reiterate why it is significant to embryology's history.

## 7- Common Questions about Style

Below is an index of common problems about style. Pay special attention to capitalization, italicization, and number conventions.

### Abbreviations

- No periods are required in degree abbreviations, e.g., PhD and MD. Use lower case when referring to any master's degree but capitalize when specifying actual degree title, e.g., "Master's of Science."
- United States of America is abbreviated USA or the US without periods or spaces.
- Don't use spaces or punctuation for organization abbreviations, e.g., FDA, NIH, MBL.
- Introduce a person in text by full name the first time, then use last name only.
- Name initials must have periods and a space between initials, e.g., T. H. Morgan.
- For species, give the whole name the first time it appears and use the common abbreviated form thereafter. Capitalize the genus name, but not the species name. Standard abbreviation form is the genus initial (capitalized) and the species name. For example, write *C. elegans* for *Caenorhabditis elegans*. For very common experimental organisms, using only the genus name is permissible, e.g., *Drosophila*, *Xenopus*, and *Bacillus*.
- Do not use '%', but spell out 'percent', e.g., sixty percent.

### Capitalization, Titles, Headings, and Sub-Headings

- Only capitalize the title of a person or department or the words "university" or "college" when referring to the official name.
- In titles, headings, and sub-headings, capitalize all major words.
- Capitalize named periods of time, e.g., Middle Ages, Renaissance.

### City Style

- For cities in the US and Canada, introduce them as City, State/Province, e.g., Toronto, Ontario.
- For all other cities, introduce them as City, Nation, e.g., Freiburg, Germany.
- After you have introduced a city and its state/province or nation in an article, do not include nation or state/province information with further instances of the city's name.

## Dates

- Use day month year format (without punctuation), e.g., 28 August 1956.
- Write dates without commas, e.g., “In May 1894 she joined ....”
- Decades don’t need apostrophes, e.g., 1750s, 1860s, and 1970s.
- Spell out numbered centuries without capitalization, e.g., sixteenth century.
- Capitalize named periods of time, e.g., Middle Ages, Renaissance.

## Degrees

- No periods are required in degree abbreviations, e.g., PhD and MD. Use lower case when referring to any master’s degree but capitalize when specifying actual degree title, e.g., “Master’s of Science.”
- Terminal doctoral degrees outside of the US and Germany are often not abbreviated PhD. Refer to doctorate degrees as doctorates. If you find documentation that the person earned a PhD, then you may refer to the degree as such.
- Medical degrees are not everywhere abbreviated as MD. Refer to medical degrees as medical degrees. If you find documentation that the person earned an MD, then you may refer to it as such.
- Undergraduate degrees are labeled and abbreviated differently throughout the world. If you cannot find documentation that explicitly names a person’s undergraduate degree, call it an undergraduate degree.

## Genes and Gene Products

- Except for human genes, italicize gene names, but not the names of the genes’ protein products, e.g. *ospA* gene, OspA protein.
- Write the names of human genes in all caps and without italicization, e.g. CD5
- Capitalize only the first letter of animal genes, e.g. Mouse Cd5
- Italicize and lowercase virus and fungus gene names, which are usually three letters, e.g. *src*

## Hyphens, Em Dashes, and En Dashes

- Use a hyphen to join a prefix with an adjective, e.g., anti-Darwinian.
- Don't hyphenate -ly adverbs, e.g., highly developed species.
- Use em dashes—the longest dash—sparingly to indicate a strong break in the sentence.
- Don't put spaces before or after dashes.
- Use en dashes for “through” in your Sources, e.g., January–March and pp. 234–45.
- Avoid dashes for “through” in your text, e.g., from 1920 through 1925, they weighed from three to four grams.
- On a Macintosh, make an en dash by holding ‘option’ and the hyphen ‘-’ key, and make an em dash by holding ‘shift’ and ‘option’ and hyphen.
- On a PC and in Word, make an en dash by typing letters, then a space, then two hyphens, then a space, then more letters. The text autocorrects, e.g., word – word. To make an em dash, type letters, then two hyphens, then more letters. The text autocorrects, e.g., word—word.

## Italicization

- Italicize non-English words.
- Italicize rather than underline book and journal titles that you refer to in your text.
- Italicize TV show, but not individual episodes nor station names, and movie titles, e.g., the *NOVA* episode “The Miracle of Life” on PBS.
- Italicize (no underline or bold type) for emphasis, e.g., I *really* mean it.
- Italicize species names and their abbreviated forms (check **Taxonomy**).
- Italicize gene names, but not their protein products (check **Genes and Gene Products**).
- Italicize court decisions in article titles and text, e.g., *Weber v. Stony Brook*.
- Italicize abbreviations of court decisions, e.g., ...the *Weber* decision left many...
- Do not italicize court decisions in the sources, e.g., *Weber v. Stony Brook Hospital*, 60 N.Y. 2d 208 (1983).
- Do not italicize statute names.
- Do not italicize journal article titles.

## Laws

- Check **Italicization** for those rules.
- Do not include the full legal citation in the text, but only on the sources.
- When possible, upon introducing a law in an article, include the law's year of origination at the end of the law's name, e.g., *Weber v. Stony Brook* (1983). With further instances of the law's name within the article, do not include the law's year.

## Literature

- Italicize journal, magazine, book, and TV show titles. Check **Italicization** for more rules.
- Put titles of articles from journals, magazines, and TV show episodes, in quotation marks, e.g., “1953 and all That: A Tale of Two Sciences,” (1984).
- When possible, upon introducing a piece of literature in an article, include the literature’s year of origination at the end of the piece’s name. See the above bullet for an example. With further instances of the piece’s name within the article, do not include the piece’s year.

## Names

- Introduce people and things with their full names.
- After the first use of the full name, if you refer to the person or thing again by name, use only the last name or abbreviated names.
- Use names, not pronouns, when you first talk about people or things in any paragraph.

## Nobel Prize

- This is the correct way to refer to the Nobel Prize in Physiology or Medicine. Unless you are only saying “Nobel Prize” in general, use the full and correct title as shown above.

## Numbers

- Use Arabic numerals for all units of measure, e.g., 400 mm.
- Spell out whole numbers zero through one hundred, e.g., four liters, thirty-two children.
- Use Arabic numerals for comparisons, e.g., 5 out of 40 mice.
- Spell out numbers related to time (through one hundred), e.g., eighty days, 120 years.
- Major exception: embryonic stages must remain as numerals, e.g., stage 1, etc.
- Do not use ‘%’, but spell out ‘percent’, e.g., sixty percent.

## Punctuation and Space Placement

- Use serial commas, e.g., red, white, and blue.
- Commas and periods go inside quotation marks; semicolons, colons, and question marks (if not part of the quotation) go outside.
- Use a comma after city and state or country: “Born in Scandiano, Italy, on ....”
- Use a space between all numbers and units of measure (4 mm).
- Use quotation marks around article titles in text.
- Use one space after the ending of any sentence.

## Since/ As

- ‘Since’ is a temporal preposition, not a logical one, e.g. “Since 2000, Phillips has taught in Michigan.”
- When you need a logical preposition, use ‘as’, not ‘since’, e.g., “As he needed wire for the fish, he returned to the store,” *not* “Since he needed wire...”

## Spelling

- Use American, rather than British, spelling

## Taxonomy

- For Linnaean names, italicize genus and species names.
- Capitalize the genus name, but not the species name.
- For species, give the whole name the first time it appears and use the common abbreviated form thereafter.
- Standard abbreviation form is the genus initial (capitalized) and the species name. For example, write *C. elegans* for *Caenorhabditis elegans*.
- For very common experimental organisms, using only the genus name is permissible, e.g., *Drosophila*, *Xenopus*, and *Bacillus*.

## Titles

- Don’t refer to people with titles like Professor, Dr., Mr., Md., etc.
- If a person has a British title, such as Sir or Dame, or a Germanic title, such as von, use those titles in People article titles and when you first introduce that person in her People article.
- Introduce a person in text by full name the first time then use last name only.

### **This/ That**

- ‘This’ and ‘that’ have different functions as pronouns.
- ‘This’ is self referential, e.g., “In this paper, I argue...”
- ‘That’ is not self referential, e.g., “Bonner wrote a book. In that book, he said...”, *not* “Bonner wrote a book. In this book...”
- Only rarely should you use ‘this’ as a pronoun.
- If you use ‘this’ or ‘that’ as pronouns, make sure their referent is clear.

### **These/ Those**

- ‘These’ and ‘that’ have different functions as pronouns.
- ‘These’ is self referential, e.g., “In these pages I use 500 verbs.”
- ‘Those’ is not self referential, e.g., “Gilbert had four shelves. On those shelves he had...”, *not* “Gilbert had four shelves. On these shelves he had...”
- Only rarely should you use ‘these’.

### **That/ Which**

- When you have a clause that describes a subset of the objects to which a word can refer, do *not* separate the clause with a comma, but use ‘that’ as the first word in the clause.  
e.g. “She used the frogs that were brown in her experiment.”  
- ‘Frogs’ is a word that refers to many animals. The clause ‘that were brown’ describes a subset of those animals. We don’t separate the clause with a comma.
- When you have a clause that further describes the noun immediately before the clause, separate it with a comma and use ‘which’ as the first word in that clause.  
e.g. “She used the salamanders, which were green, in her experiment.”  
- The salamanders she used were each green.

## 8- Sources and Citation Style

EP Encyclopedia articles have no footnotes or endnotes. Furthermore, quotations and parenthetical citations are appropriate only rarely and with approval from your editor. Each article concludes with a list of sources. List only the sources used in your research. Each article should cite at least two to five scholarly books or journal articles, depending on the topic. You may also cite popular press articles, presentations, and websites, but those sources generally may not be your primary information sources.

The EP Encyclopedia's citation style follows the fifteenth edition of *The Chicago Manual of Style*. Below are some general considerations and examples of citation style. If you have a question of style not covered in the following pages, refer to *The Chicago Manual of Style*, and for issues of legal style, refer to *The Bluebook: A Uniform System of Citation*.

Some general considerations:

- Double space your citations.
- Use the heading "Sources" rather than "References."
- Alphabetize your sources by authors' last names. With more than one source from an author, order by publication date.
- Always list the full first names of authors.
- List all authors of a work. Never use 'et al.'
- Use en dashes for inclusive page ranges, e.g. "1149–51" not "1149-51."
- Abbreviate 'editor' to 'ed.', and 'translator' to 'trans.', but for non-standard positions spell out the title completely. (e.g. transcriber, annotator).
- For articles from online and open access journals, provide links to the articles. For articles from subscription journals accessed through an institutional library, do *not* provide links to the articles.

Common Citation Formats:

### Books

- One author

Neugebauer, Otto. *The Exact Sciences in Antiquity*. Mineola, NY: Dover, 1969.

- Two authors

Cowlshaw, Guy, and Robin Dunbar. *Primate Conservation Biology*. Chicago: University of Chicago Press, 2000.

- Four or more authors

Laumann, Edward O., John H. Gagnon, Robert T. Michael, and Stuart Michaels. *The Social Organization of Sexuality: Sexual Practice in the United States*. Chicago: University of Chicago Press, 1994.

- Editor, translator, or compiler instead of author

Lattimore, Richmond, trans. *The Iliad of Homer*. Chicago: University of Chicago Press, 1951.

- Editor, translator, or compiler in addition to author

Bonnefoy, Yves. *New and Selected Poems*. Eds. John Naughton and Anthony Rudolf. Chicago: University of Chicago Press, 1995.

- Chapter or other part of a book

Wiese, Andrew. “‘The House I Live In’: Race, Class, and African American Suburban Dreams in the Postwar United States.” In *The New Suburban History*, eds. Kevin M. Kruse and Thomas J. Sugrue, 99–119. Chicago: University of Chicago Press, 2006.

- Chapter, including intro or preface, of an edited volume originally published elsewhere (as in primary sources)

Cicero, Quintus Tullius. “Handbook on Canvassing for the Consulship.” In *Rome: Late Republic and Principate*, ed. Walter Emil Kaegi Jr. and Peter White. Vol. 2 of *University of Chicago Readings in Western Civilization*, eds. John Boyer and Julius Kirshner, 33–46. Chicago: University of Chicago Press, 1986. Originally published in Evelyn S. Shuckburgh, trans., *The Letters of Cicero*, vol. 1 (London: George Bell & Sons, 1908).

Rieger, James. “Introduction” to *Frankenstein; or, The Modern Prometheus*, by Mary Wollstonecraft Shelley, xi–xxxvii. Chicago: University of Chicago Press, 1982.

- Book published electronically

Kurland, Philip B., and Ralph Lerner, eds. *The Founders’ Constitution*. Chicago: University of Chicago Press, 1987.  
<http://press-pubs.uchicago.edu/founders/> (Accessed March 27, 2011).

### **Journal Articles**

- Article in a print journal

Smith, John Maynard. "The Origin of Altruism." *Nature* 393 (1998): 639–40.

- Article in a print journal accessed online

Smith, John Maynard. "The Origin of Altruism." *Nature* 393 (1998): 639–40.

- Article in an online-only journal

Anderson, Kent, John Sack, Lisa Krauss, and Lori O'Keefe. "Publishing Online-Only Peer-Reviewed Biomedical Literature: Three Years of Citation, Author Perception, and Usage Experience." *The Journal of Electronic Publishing*.

<http://www.press.umich.edu/jep/06-03/anderson.html> (Accessed August 9, 2007).

### **Popular magazine article**

Martin, Steve. "Sports-Interview Shocker." *New Yorker*, May 6, 2002.

### **Newspaper article**

Nieder Korn, William S. "A Scholar Recants on His 'Shakespeare' Discovery." *New York Times*, June 20, 2002, Arts section, Midwest edition.

### **Book review**

Gorman, James. "Endangered Species." Review of *The Last American Man*, by Elizabeth Gilbert. *New York Times Book Review*, June 2, 2002.

### **Thesis or dissertation**

Amundin, M. "Click Repetition Rate Patterns in Communicative Sounds from the Harbour Porpoise, *Phocoena phocoena*." PhD diss., Stockholm University, 1991.

### **Paper presented at a meeting or conference**

Doyle, Brian. "Howling Like Dogs: Metaphorical Language in Psalm 59." Paper presented at the annual international meeting for the Society of Biblical Literature, Berlin, Germany, June 19–22, 2002.

## Laws

- Case Law

Weber v. Stony Brook Hospital, 60 N.Y. 2d 208 (1983).

Stambovsky v. Ackley, 572 N.Y.S.2d 672 (App. Div. 2007).

United States v. Dennis, 183 F. 201 (2d Cir. 1950).

Roe v. Wade. 410 U.S. 113 (1973)

- Legislation

Homeland Security Act of 2002, 6 U.S.C. § 101 (2002).

An Act Guaranteeing Governmental Independence, Ky. Rev. Stat. Ann. § 520.020 (passed Jan. 3, 1974).

## Web site

Evanston Public Library Board of Trustees. “Evanston Public Library Strategic Plan, 2000–2010: A Decade of Outreach.” Evanston Public Library. <http://www.epl.org/library/strategic-plan-00.html> (Accessed June 1, 2005).

## E-mail

John Doe, e-mail message to author, October 31, 2005.

## Reference Works

- *Dictionary of Scientific Biography*

Allen, Garland E. “Morgan, Thomas Hunt.” *Dictionary of Scientific Biography* 9: 515–26.

(Note: no date or publisher information required for this resource only.)

- *Biographical Dictionary of Women in Science*

Harvey, Joy, and Marilyn Ogilvie. “Sanger, Margaret Higgins (1879–1966).” In *Biographical Dictionary of Women in Science* 2 (2000): 1149–51. Eds. Joy Harvey and Marilyn Ogilvie.

(Note: inclusion of the entry author[s] and the book editors.)

## 9- Tables of Relationships

As you write EP Encyclopedia articles, you need to think about how to relate them to other articles. The articles relate to each other for two purposes. First, on the website, related articles weblink to each other. Those links allow readers to explore their interests while they avoid information they don't want. For instance, the Marine Biological Laboratory article mentions the MBL's embryology course, and it links to another article specifically about that course, and a reader, if uninterested in the course, need not click the link. As the articles link, their contents should overlap when required, but only sparsely. Each article must be atomistic and contain only those contents that illustrate its topic's significance for embryology's history.

Second, the relationships connect articles. As we add articles to the encyclopedia, we hope to uncover unexpected connections, new molecules with unappreciated atoms. Just as things can connect in different ways, articles can relate in different ways. We want the relationships between the articles to reflect the relationships between the things. If you want to write atomistic articles, you have to learn which of those relationships to use, and how to use them.

The EP Encyclopedia uses greater than forty types of relationships. Each topic category uses a different subset of the total number of relationship types. Once you pick a topic, fitting it to one of the fourteen categories thus limits the relationship types available for your article.

Relationships connect two "objects." For instance, Thomas Hunt Morgan and William Keith Brooks relate to each other. Morgan was a student of Brooks. The previous sentence describes a relationship; Morgan and Brooks are the objects, and the relationship is: X was a student of Y. When you incorporate relationships into your articles, you must pick the objects and the relationship.

The order of the objects is essential to relate them correctly. While Morgan was a student of Brooks, Brooks was *not* a student of Morgan. The relationship 'X was a student of Y' is not *symmetrical*. Many of the relationships used in the EP Encyclopedia are unsymmetrical, so to pick the right relationships, you must pick the right order of objects. When you pick relationships, the topic of your article is always the first object. You must write such that editors can clearly see which relationship you wish to link two articles.

Imagine you want to describe the relationship between Morgan and Brooks. If you were writing a biography about Morgan, you would pick the relationship 'X was a student of Y' and write "Morgan was a student of Brooks". Then you highlight 'Brooks' and write the relationship in brackets behind the name, so that the sentence looks like "Morgan was a student of Brooks [hasTeacher]." If you were writing a biography of Brooks, you would pick the relationship 'X was a teacher of Y' and write "Brooks was Morgan's [hasStudent] teacher." When your article goes online, the bracketed words and the highlighting disappear, and the highlighted words link to the indicated article.

The next few pages list the topic categories and the subsets of relationships available for each of them. Once you pick a topic and fit it to a category, read the list of relationships available to that category, as they are the only ones you may use in your article. The table lists the relationships as they hold between topic categories.

Object 1 is the category for your topic. If you are writing a biography about Morgan, then Object 1 is People. Go to the page that lists 'PEOPLE' under the column titled 'Object 1'. Imagine that in your biography you wish to say that Morgan worked for the MBL. Object 2 is the topic category for the article to which you wish to link. An article about the MBL would have a topic category Organization. Under the column titled 'Object 2', look for 'Organization'. The third column, 'relationship expression', lists the EP Encyclopedia relationships you may use to link your article about Morgan to the article about the MBL. Read the relationship definitions in the fourth column, find the one that best fits the link between the things, in this case Morgan and the MBL, and choose the relationship expression that captures that real-world link. As Morgan researched at the MBL, you should write: "Morgan researched at the [Marine Biological Laboratory](#) [isEmployee]."

Only highlight and list a relationship the first time you discuss Object 2. Thus, if you mention the MBL later in your article, do *not* link to it. Not everything requires a link. Only link to those things that also have significance to embryology's history. Furthermore, use links to atomize your articles, especially concept articles. For instance, the concept homunculus makes sense only if you also understand the concept preformationism. Rather than writing a full account of preformationism before a discussion of the homunculus concept, just write a sentence that describes their relationships and link to the article about the homunculus concept.

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>PEOPLE</b>	People	hasTeacher	student of, taught by, educated by, advised by
		hasStudent	had students, taught, educated, supervised
		hasCoWorker	worked with, collaborated with, were co-workers
		hasCoAuthor	co-authored with, collaborator, co-edited
	Experiment	conducted	conducted, performed, designed, developed, carried out
	Technology	isInventor	invented, designed, developed, created, originated
		used	used, experimented with, manipulated
	Literature	isAuthor	wrote, co-wrote, penned
	Law	isLitigant	Person was litigant in court case
		isAuthor	person wrote text of law or was major backer of law/case
	Organization	isStudent	studied at, educated at, visited, was a student at
		isDirector	was head of, chaired, directed, president of
		obtainedMD	obtained an MD from
		obtainedPhD	obtained a PhD from
		obtainedDegree	obtained degree from
		isEmployee	worked at, did research at, visited, hired at
		fundedBy	obtained funding from, got grants from, was awarded fellowship
	Concept	contributedTo	contributed to, defined, articulated, explained, developed, modified
	Image	isCreator	created, painted, drew, photographed, diagrammed, developed, recorded, filmed, sculpted
		used	used, included, stole, adapted, published, copied, commented on, referred to
		depictedIn	is depicted in, is shown in, illustrates, represents
	Organism	isInventor	bred, invented, designed
		used	used, experimented with, manipulated

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>PEOPLE (Cont.)</b>	Context	contributedTo	was an actor in, advanced, helped form, influenced the context
		isBackgroundTo	forerunner to, work preceded context
	Religion	hasAffiliation	was affiliated with, funded by, joined
	Ethics	contributedTo	is relevant to, wrote about
		influencedBy	used ethics, was influenced by ethics
	Award	hasAward	won, was awarded, was presented with, was honored with
	Place	hasLocation	lived in, moved to, born in, spent time in

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>EXPERIMENT</b>	People	conductedBy	conducted by, did, tried, performed, developed, designed, carried out
	Experiment	hasBackground	Was preceded by, based on, used data from
		isBackgroundTo	was basis for, led to
	Technology	used	used, utilized
	Literature	isTopic	discussed in, described by, reported in, reviewed in
	Law	regulatedBy	law prohibits or allows, experiment must be in compliance with
		contributedTo	experiment led to creation of law; influenced law
	Organization	conductedBy	conducted by, performed, done, developed, designed, carried out
		fundedBy	funded by, endowed by, supported by
	Concept	contributedTo	contributed to, led to
	Image	depictedIn	is depicted in, shown in, drawn in, illustrated in, photographed in
	Organism	used	used, killed, ablated, manipulated, bred, raised, cloned
	Context	isEmbeddedIn	context contributed to the experiment; led to
		isBackgroundTo	led to, helped form context, inspired
	Religion	prohibitedBy	prohibited by, is frowned on, not permitted by, interdicted by
		allowedBy	
	Ethics	isEmbeddedIn	Experiment has implications for ethics
Award	contributedTo		
Place	conductedAt	Geographic location of experiment	

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>TECHNOLOGY</b>	People	hasInventor	invented by, designed by, created by, developed by, originated by, crafted by
		usedBy	used tech but didn't invent it
	Experiment	contributedTo	contributed to, made possible
	Technology	contributedTo	contributed to
		isBackgroundTo	
	Literature	isTopic	reported in, discussed in, reviewed by, is topic of
	Law	regulatedBy	law prohibits or allows, experiment must be in compliance with
		contributedTo	experiment led to creation of law; influenced law
	Organization	hasInventor	invented by, designed by, created by, developed by, originated by, crafted by
		hasFunding	funded by, financed by
	Concept	contributedTo	contributed to
	Image	created	created, originated, developed, invented, produced
		used	used, manipulated, altered, copied, magnified, clarified
		depictedIn	is depicted in, is shown in, is photographed in, is drawn in, is illustrated in
	Organism	used	used, killed, manipulated
	Context	isEmbeddedIn	context contributed to the technology; led to
		contributedTo	
	Religion	prohibitedBy	prohibited by, is frowned on, not permitted by, interdicted by
		allowedBy	
	Ethics	isEmbeddedIn	tech has implications for ethics
Award	contributedTo		
Place	hasLocation	technology has geographic area	

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>LITERATURE</b>	People	hasAuthor	
		hasTopic	
	Experiment	hasTopic	
	Technology	hasTopic	
	Literature	isPrequel	precedes later related text
		isSequel	is preceded by earlier related text
	Law	hasTopic	
		contributedTo	
	Organization	hasTopic	
		hasPublisher	
	Concept	hasTopic	
	Image	hasTopic hasIllustration	
	Organism	hasTopic	
	Context	hasTopic	
		contributedTo	
	Religion	hasTopic	
		isEmbeddedIn	
	Ethics	hasTopic	
		isEmbeddedIn	
	Award	hasAward	
Place	hasTopic		

Object 1	Object 2	relationship expression	relationship definitions
<b>LAW</b>	People	hasAuthor	Judges author case laws, other people author promulgations
		hasLitigant	Only applies to Case law. people who are not only directly mentioned in the case title (e.g. "Roe" or "Wade," but also those who are major players in the case
	Experiment	regulates	Law/case prohibits or regulates the experiment
	Technology	regulates	
	Literature	isTopic	
		hasBackground	literature preceded and influenced law/court case
	Law	precedes	the case/statute article of interest is a precedent for this later case/statute/law; the case of interest is cited in this later case
		reliesOn	the case/statute article of interest relies on this previous case/statute/law; the case mentions this earlier case/law
		hasTopic	regulates, or is about
	Organization	hasAuthor	Authored
		hasLitigant	
	Concept	defines	law or case provides a definition of the concept
		hasTopic	law or case discusses the concept, mentions, is concerned with, relates to
	Image	hasTopic	law or case discusses, is concerned with, mentions, relates to the image
	Organism	regulates	law or case sets rules about the use of organism
		hasTopic	law or case discusses, is concerned with, mentions, relates to the organism
	Context	contributedTo	law has contributed to development of the concept; influenced, added to, enhanced
	isEmbeddedIn	law is very much integral in the context; law isn't possible with the context; is embedded in, is part of, context makes law relevant	

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>LAW (Cont.)</b>	Religion	contributedTo	law/case contributes to some aspect of the religion
		isEmbeddedIn	law/case is very much integral to religion; religion makes law relevant
		hasTopic	mentions or deal with religion
	Ethics	contributedTo	
		isEmbeddedIn	
		hasTopic	
	Award	hasTopic	
	Place	hasJurisdiction	law / case applies to a certain geographic area

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>ORGANIZATION</b>	People	hasGraduate	awarded a degree to, graduated, educated
		funded	funded, gave grant to, awarded fellowship to
		hasEmployee	employed, hired, has member (i.e. society)
	Experiment	conducted	conducted, performed, designed, developed, carried out
	Technology	isInventor	invented, designed, developed, created, originated
		used	
	Literature	isPublisher	organization as publisher (i.e. University Press)
		isAuthor	organization as author of literature (i.e.
	Law	isLitigant	Organization was litigant in court case
		isAuthor	organization was author of or backer of law
	Organization	funded	funded by
	Concept	used	
		contributedTo	
	Image	isPublisher	published the image or is organization-as-creator of the image
		depictedIn	image is a picture of the campus or site; or a group shot of a society
	Organism	isInventor	housed, bred
		used	used the organism in research or other work
	Context	contributedTo	organization contributed to development of context
	Religion	hasAffiliation	affiliated with
	Ethics	contributedTo	
Award	hasAward	was awarded, won, was given	
	awards	organization gives the award; bestows, grants, endows, etc	
Place	hasLocation		

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>CONCEPT</b>	People	usedBy	used by, rejected, modified, propagated, invented, contributed to
	Experiment	isBackgroundTo	background to, contributed to
	Technology	isBackgroundTo	background to, contributed to
	Literature	isTopic	literature discusses this concept
	Law	definedBy	law/case gives legal definition to this concept
		isTopic	the law/case discusses, mentions, has this concept as a topic
	Organization	usedBy	used by, discussed in, developed by, adapted by, rejected by
	Concept	contributedTo	background to, contributed to
	Image	depictedIn	depicted, illustrated, demonstrated, captured
	Organism	hasTopic	the concept uses or refers to the organism
	Context	isEmbeddedIn	
		contributedTo	
	Religion	isEmbeddedIn	relevant to, background to, contributed to
		contributedTo	
	Ethics	isEmbeddedIn	relevant to, background to
		contributedTo	
	Award	contributedTo	concept was key to the award being given
Place	isBackgroundTo	the place was an important geographic locale for development of concept	

Object 1	Object 2	relationship expression	relationship definitions
<b>IMAGE</b>	People	hasCreator	created by, painted by, drawn by, photographed by, diagrammed by, developed by, recorded by, commissioned by
		isPortrait	Is a portrait
		depicts	person is in image
	Experiment	depicts	image shows details of experiment; image illustrates experiment
	Technology	depicts	illustrates technology / shows details
	Literature	isIllustration	illustration in a text
	Law	depicts	
	Organization	locatedIn	published in, housed in
		hasCreator	created by, commissioned by
		depicts	is of organization/depicts organization
	Concept	depicts	
	Image	contributedTo	The image includes a representation of another image; drawn after, supercedes, is updated version of, animation of another image
	Organism	depicts	image illustrates, diagrams, shows details of organism, is of the organism
	Context	isIcon	Image is iconic of context
		isEmbeddedIn	
		contributedTo	
	Religion	isEmbeddedIn	
		contributedTo	
	Ethics	isEmbeddedIn	
		contributedTo	

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>IMAGE (Cont.)</b>	Award	contributedTo	image was key to the award being given
		depicts	image depicts the award (like a picture of someone being given the Nobel)
	Place	depicts	depicts, shows, illustrates,

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>ORGANISM</b>	People	usedBy	
	Experiment	usedBy	
	Technology	usedBy	
	Literature	discussedIn	
	Law	discussedIn	
		regulatedBy	
	Organization	usedBy	
	Concept	isTopic	used by, organism is part of understanding the concept
	Image	depictedIn	
	Organism	--	
	Context	isEmbeddedIn	
		contributedTo	
	Religion	isEmbeddedIn	
		contributedTo	
	Ethics	isEmbeddedIn	
		contributedTo	
	Award	contributedTo	was key to award being given
Place	hasLocation		

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>CONTEXT</b>	People	hasParticipant	Person was major actor in context/movement
		influenced	The context influenced person's actions
	Experiment	isBackgroundTo	
		contributedTo	
	Technology	isBackgroundTo	
		contributedTo	
	Literature	isTopic	is Topic, is discussed in
		contributedTo	influenced, created
	Law	contributedTo	context influenced law's creation
		isBackgroundTo	context is background to law
	Organization	hasNexus	organization is nexus of context's development
		contributedTo	contributed to formation/change of organization
	Concept	embeds	concept's development embedded in context
		contributedTo	context contributed to concept
		isBackgroundTo	context is the background to the concept
	Image	contributedTo	context contributed to creation of image
		isBackgroundTo	context related to background of image
		hasIcon	Context has an iconic image
	Organism	embeds	Organism's use embedded in context
		used	
Context	isBackgroundTo		
	contributedTo		

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>CONTEXT (Cont.)</b>	Religion	hasBackground	Religion is background to the context
		contributedTo	the context influenced religion
	Ethics	contributedTo	the context contributed to ethics/ideas
		embeds	ethics is embedded in the context
	Award	embeds	provided context for the award
	Place	hasLocus	Context had a geography-bound locus

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>RELIGION</b>	People	hasMember	
		hasEmployee	
	Experiment	prohibits	
		allows	
	Technology	prohibits	
		allows	
	Literature	isTopic	
		isBackgroundTo	
	Law	isBackgroundTo	
		isTopic	
	Organization	hasAffiliate	
	Concept	contributedTo	
		hasBackground	
	Image	contributedTo	
	Organism	hasTopic	
	Context	isEmbeddedIn	
		contributedTo	
	Religion	hasBackground	
	Ethics	isEmbeddedIn	
		contributedTo	
Award	awards	religious organization gives an award	
Place	hasLocus	religion has a geographic area associated with it	

<b>Object 1</b>	<b>Object 2</b>	<b>relationship expression</b>	<b>relationship definitions</b>
<b>ETHICS</b>	People	usedBy	
	Experiment	contributedTo	
		hasTopic	
	Technology	contributedTo	
		hasTopic	
	Literature	isTopic	
		isBackgroundTo	
	Law	isTopic	
		isBackgroundTo	
		contributedTo	
	Organization	usedBy	
		contributedTo	
	Concept	isBackgroundTo	
		contributedTo	
	Image	isBackgroundTo	
		hasTopic	
	Organism	hasTopic	
	Context	isEmbeddedIn	
		contributedTo	
	Religion	isEmbeddedIn	
		contributedTo	
	Ethics	isEmbeddedIn	
		contributedTo	
	Award	contributedTo	
	Place	hasLocus	

Object 1	Object 2	relationship expression	relationship definitions
<b>AWARD</b>	People	hasRecipient	
	Experiment	awardedFor	
	Technology	awardedFor	
	Literature	awardedFor	
		isTopic	
	Law	isTopic	
	Organization	hasRecipient	
		awardedBy	
	Concept	hasBackground	
	Image	depictedIn	
		awardedFor	
	Organism	hasBackground	
	Context	isEmbeddedIn	
	Religion	isEmbeddedIn	
		awardedBy	
	Ethics	isEmbeddedIn	
	Award	--	
Place	hasLocation	place where award ceremony is held, eg. Stockholm for the Nobel	

Object 1	Object 2	relationship expression	relationship definitions
<b>PLACE</b>	People	isLocation	birthplace, where person lived, worked
	Experiment	isLocation	
	Technology	isLocation	
	Literature	isLocation	
		isTopic	
	Law	isJurisdiction	
		isTopic	
	Organization	isLocation	
	Concept	contributedTo	
	Image	depictedIn	
		isLocation	
	Organism	isLocation	
	Context	isLocus	
	Religion	isLocus	
	Ethics	isLocus	
	Award	isLocation	
Place	--		

## 10- Page and File Name Formats and Sample Articles

Below is a description of the format your articles should have before you turn them in for editing. Afterwards are instructions for file name formats. **The following pages are examples of properly formatted articles. The examples only show their first and last pages.**

### Page Format

- Use 12 point Times New Roman font.
- Double space throughout, including your sources.
- Use bold, twelve-point Times New Roman font for your title. Your title should be left justified and the first line of your page.
- Hit 'enter' twice between the end of your title and the start of your first paragraph.
- Indent the start of every paragraph.
- Put right justified page numbers in your footer sections.
- After your final line of text, hit 'enter' twice and then type your name, as you want it to appear on the website, right justified.
- After your name, hit 'enter' twice and left justify the word 'Sources'. Bold it, and attach a colon so you see **Sources:**.
- After **Sources:**, hit 'enter' twice and list your sources as described in the citation style section. s
- For your sources, use hanging indents, as demonstrated in the example articles.

### File Name Format

You will likely turn your articles in online. Save your articles as Word documents and use the following naming conventions.

- Start with the category abbreviation, e.g. Pe for people and Exp for experiment.
- Next use your articles title, or for long titles, understandable abbreviations.
- Finish with your initials.
- For an experiment article about parthenogenesis by Cera Lawrence, the file name is **ExpParthenogenesisCL.doc**.
- The file naming convention for People articles is slightly different. Use Pe, then the person's last name, her first and middle initials, followed by your initials. For example, a people article by Ellen DuPont about John Philip Trinkaus is named **PeTrinkausJPED.doc**.

## **John Philip Trinkaus (1918–2003)**

John Philip Trinkaus was born 23 May 1918 in Rockville Center, New York. Affectionately called “Trink” by his friends, his social confidence and ironclad work ethic combined to make him one of the preeminent developmental biologists of the twentieth century. His scientific contributions included investigations of several different aspects of embryology, but he is best known for his studies of **morphogenesis** [contributedTo] and **cell migration** [contributedTo] during **gastrulation** [contributedTo].

Trinkaus began his higher education at **Wesleyan University** [obtainedDegree] in Connecticut, where he obtained his BA in 1940. He then moved to New York City to attend **Columbia University** [obtainedDegree] and obtained his MA in 1941. After leaving Columbia, Trinkaus continued to explore the educational opportunities the east coast had to offer, moving this time to **Johns Hopkins University** [obtainedPhD] in Baltimore, Maryland. Shortly after arriving at Johns Hopkins, however, his studies were interrupted by WWII. Trinkaus spent three and a half years in the military stationed in the US doing aviation research. After the war, Trinkaus returned to Johns Hopkins to resume his work in the lab of embryologist **B. H. Willier** [hasTeacher] and received his PhD in embryology in 1948.

After over twenty years as a student, Trinkaus turned the tables in 1948, accepting a position as an instructor of biology in the department of zoology (later the department of biology) at **Yale University** [isEmployee]. He was soon promoted to full professor and continued to teach and perform research at Yale throughout his academic career. In addition to teaching and researching, Trinkaus was a fellow of Yale’s **Branford College**

[isDirector] from 1951 to 1966... ..and beer-drinking contest at Yale, and celebrated his seventieth birthday at “Trink-fest,” a three-day tribute event at the MBL organized by his friends and colleagues. Trinkaus died on 8 February 2003 at the age of 84. He received the final edited copy of his autobiography, *Embryologist: My Eight Decades in Developmental Biology* [isAuthor], days before his death, and it was published posthumously.

M. Ellen M. DuPont

**Sources:**

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Kimmel, Charles B., and James A. Weston. “An Overview of Trink’s Scientific

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**“Experiments on Artificial Parthenogenesis in Annelids (*Chaetopterus*) and the Nature of the Process of Fertilization” (1901), by Jacques Loeb**

Jacques Loeb [conductedBy] showed that scientists could achieve artificial parthenogenesis [contributedTo] with one species of annelid worm through a series of experiments in 1900. Loeb published the results of his experiments in 1901 as “Experiments on Artificial Parthenogenesis in Annelids (*Chaetopterus*) and the Nature of the Process of Fertilization,” in *The American Journal of Physiology*. His results broadened the range of animals to which artificial parthenogenesis applied beyond sea urchins [hasRelevance]. Scientists could now also cause artificial parthenogenesis with the eggs of *Chaetopterus* [used], a segmented marine worm.

Loeb had detailed his earlier experiments with sea urchins in two papers: “On the Nature of the Process of Fertilization and the Artificial Production of Normal Larvae (Plutei) from the Unfertilized Eggs of the Sea Urchin” [isTopic] (1899) and “Further Experiments on Artificial Parthenogenesis and the Nature of the Process of Fertilization” [isTopic] (1900). The three sets of experiments were Loeb’s initial breakthrough with artificial parthenogenesis, and they prompted years of research, which culminated in his 1913 book *Artificial Parthenogenesis and Fertilization* [isBackgroundTo].

Loeb conducted his research with *Chaetopterus* [used] at the Marine Biological Laboratory [conductedAt] in Woods Hole, Massachusetts, following a winter spent researching sea urchins at Stanford University’s Hopkins Marine Station [hasRelevance] in Pacific Grove, California. He had determined the various mixtures of salt waters that...

Loeb published no results about artificial parthenogenesis experiments with annelids following his 1900 experiments. When he talked about artificial parthenogenesis in his later works, Loeb focused on his sea urchin results, especially in *The Mechanistic Conception of Life* [isBackgroundTo] and *The Organism as a Whole* [isBackgroundTo].

Steve Elliott

**Sources:**

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York: G. P. Putnam's Sons, 1916.

## 11- Proofreaders' Marks

The following is a list of marks you will see on your on your critiqued drafts. They are not the only marks you will see, just commonly used ones. 'Graph' is shorthand for 'paragraph'.

"... red sea urchins ( <sup>ita.</sup> <u>Strongylocentrotus franciscanus</u> ) proved more <i>difficult</i> ..."	Italicize, de-italicize
"... Thomas Hunt <u>Morgan</u> ..."	Capitalize
"... she studied <u>Biology</u> at Cold Spring..."	Make lowercase
"... the newts <u>were used to discover</u> ..."	Passive construction
"..what it was she had gone and done to get back to where it was she had come from..."	Unclear wording
" <del>Thankfully</del> , his opponent died young..."	Delete
"Greer used salt, paper and celluloid to increase..."	Insert punctuation
"... Johnson combined the chemicals and <u>we</u> created life..."	Word choice is suspect

## 12- Bibliography and Websites

### Bibliography

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### Websites

The Embryo Project: <http://embryo.asu.edu/>

Lab Notebook (The EP class site):  
<https://embryoproject.basecamphq.com/projects/1157576/log>