

# Initial Statistical Exploration of Xenofelinoid Genetics\*

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Sol: New Hope, Shackleton Crater, Luna

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**Abstract**—Xenofelinoids, the fascinating feline-like creatures of Colony TF\*6290193 (Felisfire), are a popular subject of study and breeding. However, scientific understanding of their complex genetics remains limited. This study provides baseline statistical data on xenofelinoid inheritance patterns. Using a controlled breeding protocol with two distinct lineages over five generations, we meticulously tracked the frequency of markings, analyzed dominant and recessive traits, and documented any novel genetic combinations. Our findings contribute to a more systematic approach to xenofelinoid breeding, enhancing predictability and fostering informed genetic experimentation within the Felisfire community.

**Index Terms**—statistics, genetics, xenobiology, breeding

## I. INTRODUCTION

Since the inception of the colony by the crew of the U.T.V. Optimism, Humanity has been inundated with interest and inquiry about the lifeforms on Colony TF\*6290193 “*Felisfire*”. Plenty of research has been done on the main object of fascination, the *Xenofelinoids* [1]. But publicized records are sparse and information is collected informally in the form of guides distributed amongst the colony [2].

This paper aims to provide baseline statistical data for more informed breeding of xenofelinoids. We aim to enhance reproducibility in this popular Felisfirian pastime [3].

## II. METHODS

### A. Specimens

We start with 8 progenitor felidae specimens, divided into 2 identical lineages. Each lineage was established with 2 mating pairs engineered with distinctive markings that serve as visual identifiers. These identifiers were unique within each lineage, allowing us to clearly differentiate and track the progeny’s genealogical origins.

The two lineages, though visually distinct due to their coat colors, were designed to be genetically identical apart from select sections of the exome, serving as mirrors of each other. This strategic design ensured that the genetic makeup of both groups remained diverse enough to prevent inbreeding [1]. The setup thus created a balanced environment, allowing us to study hereditary patterns and mitigate any unwanted consequences of close breeding.

This meticulous setup enabled us to control the breeding process, fostering a controlled environment where the risks of inbreeding were significantly mitigated. The distinctive markings acted as a telltale sign of each cat’s lineage, offering an at-a-glance understanding of their genetic heritage.

### B. Breeding

Each lineage began with four freshly hatched xenofelinoids. To promote diverse genetic combinations, we employed a structured breeding approach. Initially, we used love potions<sup>tm</sup> to artificially increase interaction scores to facilitate breeding when natural interactions had not yet reached the optimal range (95-100) [insert citation for xenofelinoid interactions and their impact on breeding].

Within each lineage, we implemented a round-robin breeding system. This involved systematically pairing each female with each male to maximize genetic diversity and avoid immediate inbreeding [insert citation for round-robin breeding techniques, if applicable]. After this initial round, we introduced selected specimens from the opposite lineage into the breeding pool. A second, cross-lineage round-robin breeding cycle followed, further diversifying the genetic makeup of each group [insert citation for benefits of outbreeding or cross-lineage breeding]. This process continued through five generations, allowing us to track inheritance patterns effectively.

We meticulously recorded the frequency of marking inheritance, instances of dominant or recessive traits, and the emergence of any novel markings or combinations.

## III. PREPARE YOUR PAPER BEFORE STYLING

Before you begin to format your paper, first write and save the content as a separate text file. Complete all content and organizational editing before formatting. Please note sections III-A–III-E below for more information on proofreading, spelling and grammar.

Keep your text and graphic files separate until after the text has been formatted and styled. Do not number text heads— $\LaTeX$  will do that for you.

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Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, ac, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

### B. Units

- Use either SI (MKS) or CGS as primary units. (SI units are encouraged.) English units may be used as secondary units (in parentheses). An exception would be the use of English units as identifiers in trade, such as “3.5-inch disk drive”.
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- Use a zero before decimal points: “0.25”, not “.25”. Use “cm<sup>3</sup>”, not “cc”.)

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Number equations consecutively. To make your equations more compact, you may use the solidus ( / ), the exp function, or appropriate exponents. Italicize Roman symbols for quantities and variables, but not Greek symbols. Use a long dash rather than a hyphen for a minus sign. Punctuate equations with commas or periods when they are part of a sentence, as in:

$$a + b = \gamma \quad (1)$$

Be sure that the symbols in your equation have been defined before or immediately following the equation. Use “(1)”, not “Eq. (1)” or “equation (1)”, except at the beginning of a sentence: “Equation (1) is . . .”

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Please use “soft” (e.g., `\eqref{Eq}`) cross references instead of “hard” references (e.g., (1)). That will make it possible to combine sections, add equations, or change the order of figures or citations without having to go through the file line by line.

Please don’t use the `{eqnarray}` equation environment. Use `{align}` or `{IEEEeqnarray}` instead. The `{eqnarray}` environment leaves unsightly spaces around relation symbols.

Please note that the `{subequations}` environment in  $\LaTeX$  will increment the main equation counter even when there are no equation numbers displayed. If you forget that, you might write an article in which the equation numbers skip from (17) to (20), causing the copy editors to wonder if you’ve discovered a new method of counting.

$\BibTeX$  does not work by magic. It doesn’t get the bibliographic data from thin air but from .bib files. If you use  $\BibTeX$  to produce a bibliography you must send the .bib files.

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Do not use `\nonumber` inside the `{array}` environment. It will not stop equation numbers inside `{array}` (there won’t be any anyway) and it might stop a wanted equation number in the surrounding equation.

### E. Some Common Mistakes

- The word “data” is plural, not singular.
- The subscript for the permeability of vacuum  $\mu_0$ , and other common scientific constants, is zero with subscript formatting, not a lowercase letter “o”.
- In American English, commas, semicolons, periods, question and exclamation marks are located within quotation marks only when a complete thought or name is cited, such as a title or full quotation. When quotation marks are used, instead of a bold or italic typeface, to highlight a word or phrase, punctuation should appear outside of the quotation marks. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)
- A graph within a graph is an “inset”, not an “insert”. The word alternatively is preferred to the word “alternately” (unless you really mean something that alternates).
- Do not use the word “essentially” to mean “approximately” or “effectively”.
- In your paper title, if the words “that uses” can accurately replace the word “using”, capitalize the “u”; if not, keep using lower-cased.
- Be aware of the different meanings of the homophones “affect” and “effect”, “complement” and “compliment”, “discreet” and “discrete”, “principal” and “principle”.
- Do not confuse “imply” and “infer”.
- The prefix “non” is not a word; it should be joined to the word it modifies, usually without a hyphen.
- There is no period after the “et” in the Latin abbreviation “et al.”.
- The abbreviation “i.e.” means “that is”, and the abbreviation “e.g.” means “for example”.

An excellent style manual for science writers is [7].

### F. Authors and Affiliations

**The class file is designed for, but not limited to, six authors.** A minimum of one author is required for all conference articles. Author names should be listed starting from left

to right and then moving down to the next line. This is the author sequence that will be used in future citations and by indexing services. Names should not be listed in columns nor group by affiliation. Please keep your affiliations as succinct as possible (for example, do not differentiate among departments of the same organization).

G. Identify the Headings

Headings, or heads, are organizational devices that guide the reader through your paper. There are two types: component heads and text heads.

Component heads identify the different components of your paper and are not topically subordinate to each other. Examples include Acknowledgments and References and, for these, the correct style to use is “Heading 5”. Use “figure caption” for your Figure captions, and “table head” for your table title. Run-in heads, such as “Abstract”, will require you to apply a style (in this case, italic) in addition to the style provided by the drop down menu to differentiate the head from the text.

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H. Figures and Tables

a) *Positioning Figures and Tables:* Place figures and tables at the top and bottom of columns. Avoid placing them in the middle of columns. Large figures and tables may span across both columns. Figure captions should be below the figures; table heads should appear above the tables. Insert figures and tables after they are cited in the text. Use the abbreviation “Fig. 1”, even at the beginning of a sentence.

TABLE I  
TABLE TYPE STYLES

Table Head	Table Column Head		
	Table column subhead	Subhead	Subhead
copy	More table copy <sup>a</sup>		

<sup>a</sup>Sample of a Table footnote.

example, write the quantity “Magnetization”, or “Magnetization, M”, not just “M”. If including units in the label, present them within parentheses. Do not label axes only with units. In the example, write “Magnetization (A/m)” or “Magnetization {A[m(1)]}”, not just “A/m”. Do not label axes with a ratio of quantities and units. For example, write “Temperature (K)”, not “Temperature/K”.

ACKNOWLEDGMENT

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Fig. 1. Example of a figure caption.

Figure Labels: Use 8 point Times New Roman for Figure labels. Use words rather than symbols or abbreviations when writing Figure axis labels to avoid confusing the reader. As an