Congratulations! You now have meaningful and reproducible data that you and your co-authors would like to share with your scientific community. Please read the following before writing your first draft.

1. Plagiarizing or falsifying data is unethical and illegal. It is your moral responsibility to keep all your raw files and codes organized such that when your integrity is questioned, your work speaks for itself. This goes for anything that has your name on it.

2. Science builds on reproducible data. Along with reproducing results before publishing, make sure that you list all parameters required for anyone to reproduce your results. So, don't skip important details!

3. Again, science builds on others' work. So, properly cite all the works that your experiments' hypotheses rely on, experimental results/ simulations your work validates or contradicts, etc.

Yay, first draft! ☺

Step 1: Decide on the authors

Below is the established criterion for co-authors that you are expected to follow:
1) Significant involvement (meaning, at least one plot should have been by the author or a theoretical calculation) in study conception/design, data collection, or data analysis/interpretation.
2) Involvement in drafting or revising manuscript.
3) Approval of final version of manuscript for publication (always make sure you send all your drafts to co-authors and get their approval).
4) Responsibility for accuracy and integrity of all aspects of research.

Usually, I start with the fourth point above – figure out who all have checked the accuracy of the work, and work my way upwards. If someone doesn't follow this exact standard, but has given a valuable idea or two, always put them in acknowledgement. It is a good practice in science and in life to recognize the contribution of other people.

Step 2: Write in a simple language the take-away from your paper.

Write what you want your intended audience to remember. This step will help you stay focused on your narrative.

Step 3: Finalize your figures and tables and the corresponding text in the captions.

Write what you want your readers to see in the most simple and direct way possible. Be descriptive, but not too wordy.

1. Keep the axis labels, spacing, fonts and legends consistent across all figures.
2. If you have a figure of your experimental setup, keep the elements as proportional as possible. Use icons and annotations that are consistent with the terms used in the literature in your field.
3. In any plot, each data set must be labeled separately.
4. Only the region of interest must be displayed. Don’t have too much empty space in your plots.

5. There should be no non-physical numbers on the axis. Don't extend your plot to include negative numbers to make space.
6. Labels should not be in bold.
7. Axis numbers must have only the relevant number of significant digits.
8. Make sure that your axes numbers are readable and are not overcrowded.
9. Use a solid line to connect the dots only if a mathematical relationship represents them. Else use dotted lines to guide the eyes.
10. In the case of normalization, write what the axis is normalized to.
11. Write how your error bars are determined.

Step 4: Write elaborately about your experimental setup and theory

All writing should be such that each sentence follows the previous on some logical connection. Don't just blurt out facts. (Read point 3 in the general tips section)

- Experimental setup: Write it once and write it correctly. If you are unsure about something, leave a '?' at the place and fill it up later with the correct detail.

- Theory. Present the mathematical formalism behind your approach in the most logical way possible. Begin at the beginning and end where your results end.

Abbreviations: Even if you have a table of abbreviations, write it out the first time you introduce in the text.

Abbreviations in science:

1) The spelled-out words should not be capitalized. Eg: The program's graphical user interface was extremely user friendly. The program's GUI was extremely user friendly.

2) Words are capitalized when the abbreviation represents the official name of an organization or company. Eg: The open access journal mBio is published by the American Society for Microbiology. The open access journal mBio is published by ASM.

3) Proper nouns (the names of specific people, geographical locations, or trademarks) are always capitalized. Eg: There are four basic properties to each Fourier transform. There are four basic properties to each FT.

Step 5: Write about your experimental results.

Include all the details required for anyone to recreate your experiment and the results. Again, make sure to write it once and write it correct. If you don't know some details, leave it blank, don't write something wrong.

Paragraphs: The beginning of each paragraph is a signal that a new step is reached.

Step 6: Write the discussion/ conclusion section.

Write out a bulleted list of conclusions you'd like to make: Elaborate on what happened with the data and synthesize it in terms of the grand scheme.

Step 7: Write the introduction.

Lay out the current state of knowledge in the field in a way that leads to the specific questions that you have investigated. Present the hypothesis you have proposed.

Step 8: Write the abstract.

Start your paragraph, either from the big picture and move to small or the other way around. But make sure that it is not more than 5-6 lines and that 80% of it directly talks about your specific work. Get to your contribution in the second or, at the maximum, third sentence.

Abstract should include answers to the following:

1) What have you demonstrated in your paper?

2) Is there any specific advantage to the system you have chosen to perform your work in?

3) How is it relevant to your future goal or where do you see it being applied?

4) If quoting any numbers, how is it better compared to the state of art (quote with reference)?

Step 9: Title

Write the shortest answer to "What, why, how" of your experiment. Emphasize your unique elements. The title must have answers to at least 3 of these questions: what system you use, what is the process, what final purpose does it serve, what have you demonstrated (your results) that hasn't been before, and the point of writing. Title not more than 10 words (not too long).

Step 10: Revise, revise and revise.

1. Fix the succession of loose sentences. Make your narrative tight and to the point by causally connecting one sentence to the next.
2. Cut all the unnecessary parts that ramble about unnecessary details. Make every word count.
3. With a pen on each word, read carefully and thoroughly.
4. Don't inject opinions! Opinions are personal conclusions that are not substantiated by data.
5. Make sure that you have cited all the relevant previous works.

General tips:

1. Read each paragraph after writing and rewrite as needed.
2. Each paragraph = idea + discussion. A new paragraph indicates a new unit of thought! It is a new step in the development of your thought.
3. Write thematic strings before expanding into a paragraph. Thematic strings are a series of ideas that are logically connected. An easy way to do this is to identify the nouns and verbs that are integral to your narrative. Start at the very beginning and write till the end. Connect one sentence to the next using the relevant connectors for one of these logics: reason, comparison, condition, correlation, contradiction, etc.
4. Express coordinate ideas in a similar form.

   Example: "In spring, in summer or in winter" and not "In spring, summer or in winter".
   It was both a long ceremony and very tedious. Corrected version: The ceremony was both long and tedious.
   My objections are, first, the injustice of the measure; that it is unconstitutional. Corrected version: My objections are, first, that the measure is unjust; second, that it is unconstitutional.

5. Keep related words together.

   A dog, if you fail to discipline him, becomes a household pet. Corrected version: If you fail to discipline him, a dog becomes a household pet.

6. Place the emphatic words of a sentence at the end.

   Wrong version: This steel is principally used for making razors, because of its hardness.
   Corrected version: Because of its harness, this steel is used principally for making razors.

7. Quantify your qualifiers (adjectives and adverbs). Small/ large /faster begs the question, smaller/larger/ faster than what. Quantify!

8. A participial phrase at the beginning of a sentence must refer to the grammatical subject. Example: On arriving in Gwalior, his friends met him at the station. Corrected version: On arriving in Gwalior, he was met at the station by his friends.

References:

1) https://www.aje.com/arc/editing-tip-capitalization-when-defining-abbreviations/

2) http://www.icmje.org/