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# The Discovery Of DNA, Communication And Collaboration

Communication and collaboration are vital in scientific research and for scientists to effectively communicate has a deep history in the discovery of DNA. The winners of the noble prize, James Watson and Francis Crick, are hotly debated in science, if Rosalind Franklin's data was stolen by them and that sexism was in science to discredit her and rob her of the prize. This can all be explained away by poor use of communication, collaboration and conflict in ideas.

Collaboration in the lab was poor within the team on discovering DNA. Science should be accessible to all races, sex and religion. As it's important for everyone to be able to better humanity as a whole and to see everything from a different view that others can't always see clearly. Franklin was hired by Crick for her expertise in X-ray crystallography. She was a good addition, her expertise means they could have physical proof in photos and to verify their conclusions. However, Watson objectifies Franklin the first time he saw her, as described in *The Double Helix*: (Watson, 2010) "Momentarily I wondered how she would look if she took off her glasses and did something novel with her hair..." He believed he knew more than she did, and she was a tool for his use. John Randall did not include Maurice Wilkins in the meeting of how the DNA work was to be allocated to the team, and because of this both Wilkins and Franklin had a belief of ownership of this project as both X-ray crystallographers. This lack of communication shows the lack of collaboration within the team. When Wilkins began to look at Franklin's data without her knowledge or approval. Franklin, as a result, felt paranoid that they were trying to control her work. Even more proof of this poor teamwork. Coincidentally, Franklin's data also helped what Crick's been working on for months for his PhD, this made Franklin even more isolated and disrespected. There was a conflict of ideals in the team this is shown in (Elliott, 2019) when "The others want to build models based on available data. While Franklin believed this was unprofessional without proper data." This shows that Franklin had a different standard of models than the others, this caused tension, which could have been resolved through proper collaboration. (Elliott, 2019) Figure 1: The famous Photo 51 that Franklin took, which led Watson and Crick to their insight the double helix.

Franklin's data lead to Watson's and Crick's major conclusions. Such as figure 1 as proof of the double helix. All of this shows that the team working on the discovery of DNA was not working together well due to a lack of collaboration, if they had better collaboration, the whole thing would have been discovered quicker and no one would have been disrespected and hurt.

Science relies on clear communication, the team for DNA had an absence of communication, this caused many problems. In (Cobb, 2015) "Franklin even while working on her own without anyone to benefit from."

She worked very well as a brilliant scientist and made lots of ground that would have been very hard to do by individual when only armed with a pencil and a ruler she faced complexed mathematics and had realised that DNA had a double helix structure and that the way the bases of the nucleotides on each strand were connected, this could have been done even better and quicker if communication was used to get help from the rest of the team. Franklin noted (Cobb, 2015) 'an infinite variety of nucleotide sequences would be possible to explain the biological specificity of DNA' this shows that she saw the genetic code of DNA. To show and prove this

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she would have had to make modals and have many pages maths showing it. But Watson and Crick had already finished. Franklin was invited to approve the modal in which she did. She was only credited with the supporting data while Watson's and Crick's modal was published. As said in (Lloyd, 2010) it perfectly sums it up "She vastly held up the King's team in this survival end to this race and destroyed. The story all ended surprisingly happily in that the Cambridge team found the answer. There were three papers published in Nature, the first by Watson and Crick. The second and the third by Wilkins and by Franklin. So, Franklin got to say, in Nature, in the same issue as Watson and Crick, everything she knew about DNA, including the publication of the photographs." She did get credit but not what she deserved. The story could have ended much happy if the team communicated better and this controversial topic wouldn't even exist.

As discussed, the team didn't at all have the best collaboration and communication. As science relies on both, this means that collaboration and communication are paramount. Just look at the recent photos of a black hole, something by the law of light can't be photographed but 200 scientists and graphic designers took 2 years to finally do it, that is proof that collaboration and communication are so important.

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