Science Simplified - A Digital Strategy to Promote Cancer Research and Raise

Awareness and Inspire

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Background

The National Institutes of Health (NIH) and National Cancer Institute (NCI) have long recognized the need for improved professional development for careers in cancer-related research. The decline in STEM interests among school age students impacts availability of future STEM workforce. Simultaneously, the rapid growth of STEM jobs and projected supply gap of professionals to fill those roles creates a competitive environment for various STEM disciplines to attract personnel. With the rise in prevalence and use of social media, there is an emerging opportunity to introduce new audiences to cancer-related research careers to attract and recruit the next generation of the cancer workforce.

CANCER RESEARCH CONTINUUM



Source: National Cancer Institute (NCI)

The use of social media as a tool for sharing accurate public health information has been demonstrated, as well as its use to reach geographically isolated and underserved communities to enhance health literacy. Emerging research now points towards social media as a potentially impactful medium to generate interest in STEM.

Aims

We seek to develop a social media approach under the banner of Science Simplified that integrates science communication, cancer research and engineering into an engaging and informative product. We aim to create a holistic program that integrates public health education, research awareness, and community engagement to increase STEM interest and highlight exciting careers in STEM.



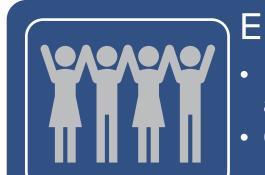
Provide Access to High-Quality Cancer-Related Information

- Use social media to disseminate accurate information to lay audiences
- Combat spread of cancer misinformation



Highlight Cutting-Edge Cancer Research
Informs people of new science and technologies
Demonstrates researchers working to tackle cancer

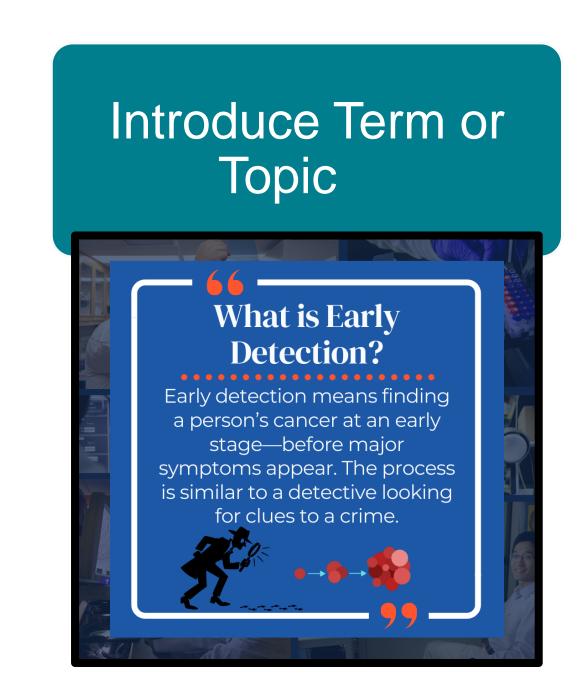
Demonstrates researchers working to tackle cancer
Showcases researchers from many backgrounds
Highlight engineering contributions to cancer research



Engage Community

- Provides space to ask questions about cancer, engineering, and research
- Coupling with other health programming the CCIL engages

Science Simplified Model







We adapt an **Objectives** and **Key Results** (OKR) framework for communicating the importance of cancer research and its impact. We define a "**What? Why?** and **How?**" of the selected topic. The goal is to create short and concise posts that quickly engage readers.

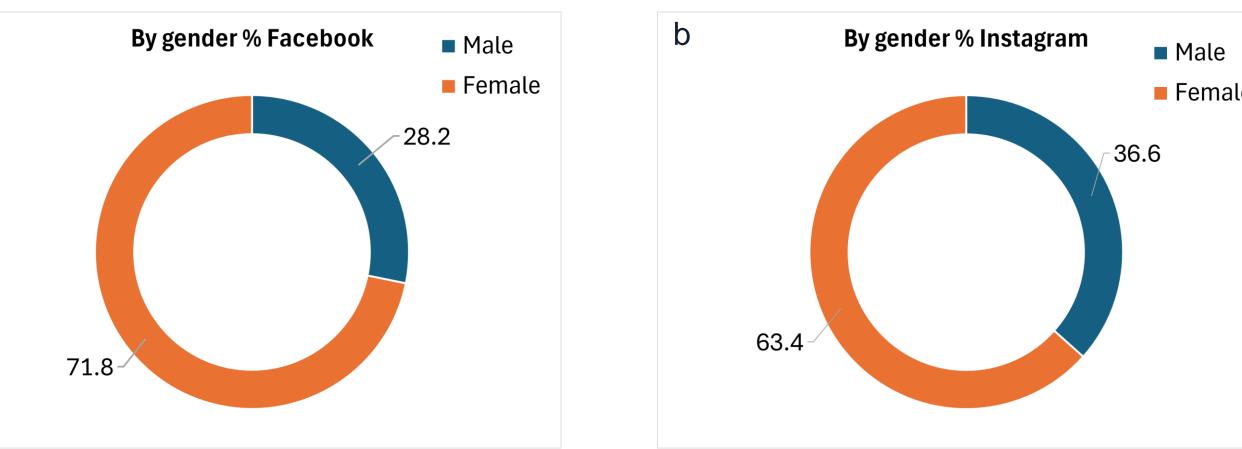


Figure 1. Gender demographics breakdown of Facebook and Instagram audiences. A)
Percentage of Male and Female users that Follow the Cancer Center at Illinois
Facebook account B) Percentage of Male and Female users that Follow the Cancer Center at Illinois Instagram account.

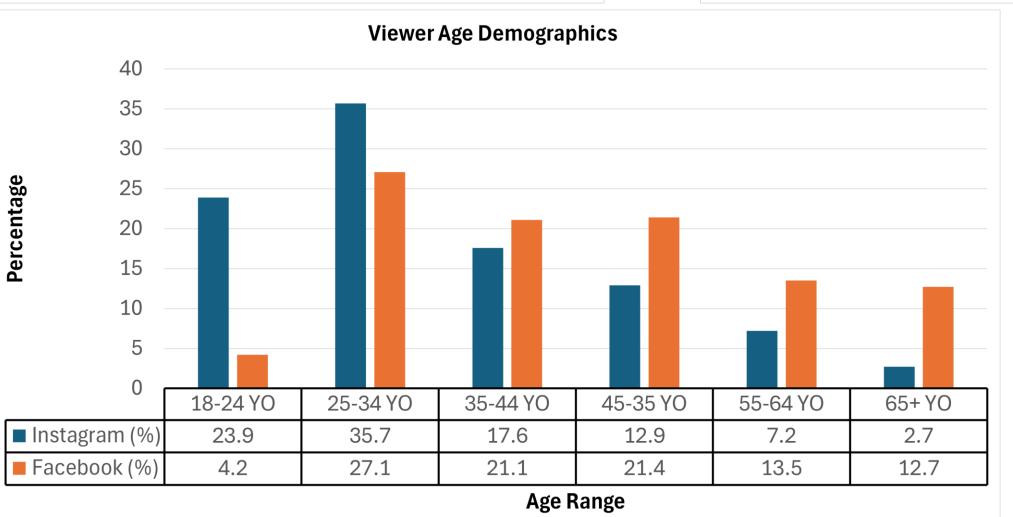


Figure 2. Age demographics breakdown of Facebook and Instagram audiences. The majority of the Instagram audience (59.6%) is 34 years old or younger in contrast to the Facebook audience where the younger than 34 audience is the minority.(31.3%).

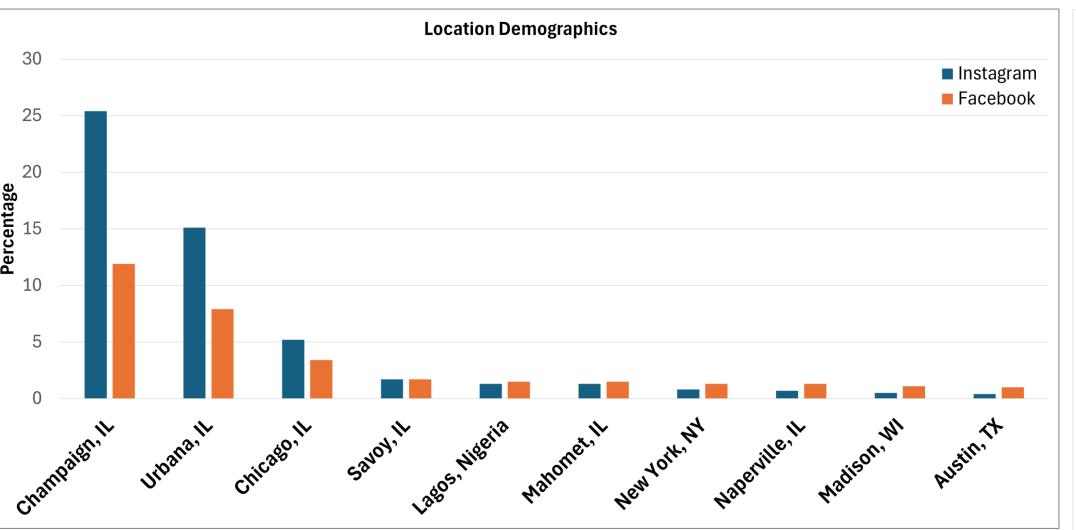


Figure 4. Geographical breakdown of viewer demographics. The majority of viewers are concentrated in the cities surrounding the University of Illinois at Urbana-Champaign campus.

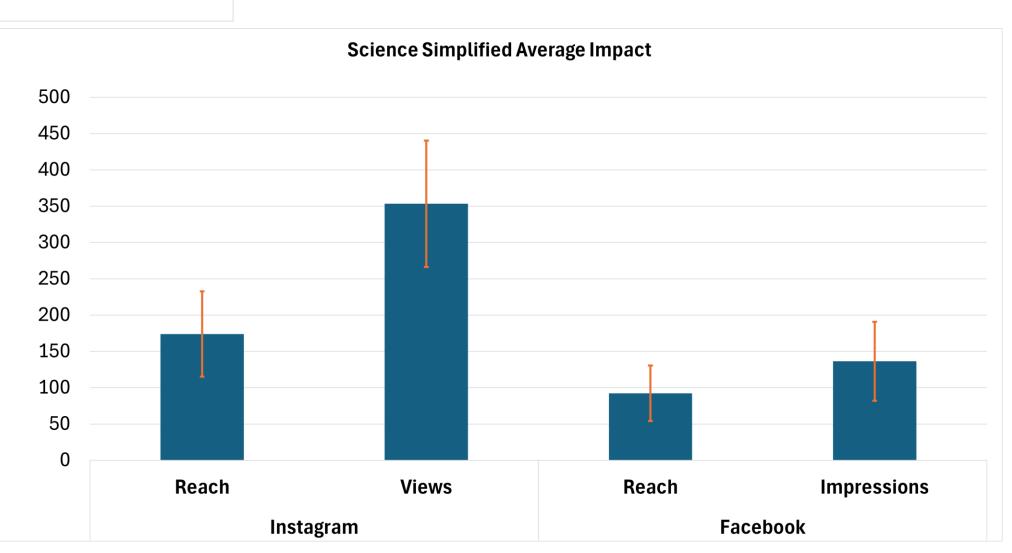


Figure 3. Engagement analytics of Science Simplified Content.

Instagram reach is defined as the number of unique users who see your content, and views are the number of times the content is viewed.

Facebook impressions are defined as the number of times content was viewed and reach the number of people that see a post.

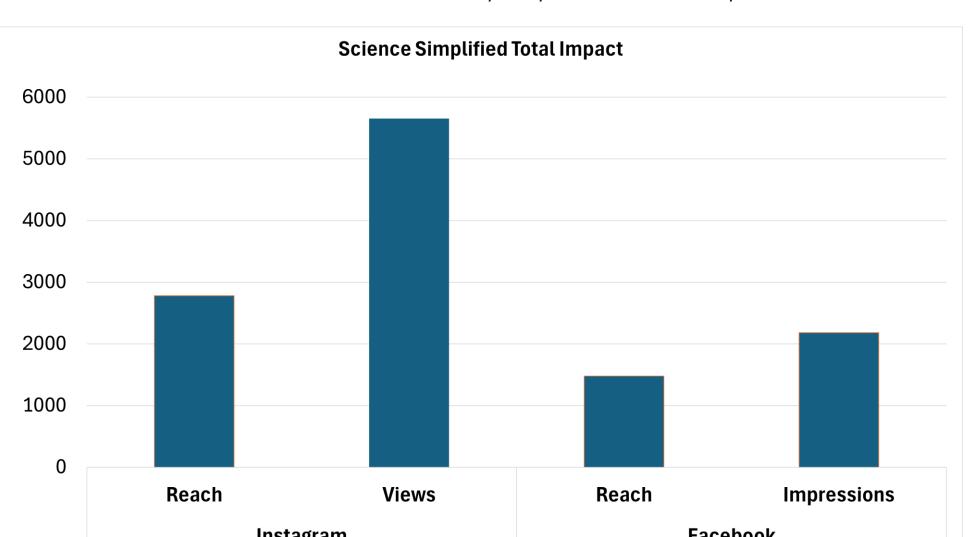


Figure 5. Total Engagement of Science Simplified Content across Social Media. Instagram reach is defined as the number of unique users who see your content, and views are the number of times the content is viewed. Facebook impressions are defined as the number of times content was viewed and reach the number of people that see a post.

Conclusions

Recruiting the next generation of the cancer research workforce requires sustained effort in outreach and engagement. Creating interest in cancer research in younger generations requires engaging with them in places they spend their time such as on social media. Therefore, it is essential that we utilize social media to develop digital strategies to engage with people on these platforms.

Future Goals

Future plans involve creating behind-the-scenes style content of research to give the general public a better idea of what research looks like. Other plans include:

- Virtual tours to highlight capabilities and demystify the research process
- Interviewing students working in research labs to talk about their research and their journey.
- Digital content for asynchronous and virtual community outreach and engagement.
- Incorporation of science simplified into community health initiatives.
- Using the data to tailor captions and content to the different age-groups that utilize the different platforms.

Check out Science Simplified



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References

science, 8, e994. https://doi.org/10.7717/peerj-cs.994

society, 24(7), 673-688. https://doi.org/10.1080/13573322.2017.1423464

Evans, M.A., Lopez, M., Maddox, D. et al. Interest-Driven Learning Among Middle School Youth in an Out-of-School STEM Studio. J Sci Educ Technol 23, 624–640 (2014). https://doi.org/10.1007/s10956-014-9490-z
Al Tamime, R., & Weber, I. (2022). Using social media advertisement data to monitor the gender gap in STEM: opportunities and challenges. PeerJ. Computer

National Center for Science and Engineering Statistics (NCSES). 2023. Diversity and STEM: Women, Minorities, and Persons with Disabilities 2023. Special Report NSF 23-315. Alexandria, VA: National Science Foundation. Available at https://ncses.nsf.gov/wmpd.

Schor N. F. (2024). Developing the next-generation cancer research workforce in the National Institutes of Health Intramural Research Program. Journal of the National Cancer Institute, 116(5), 637–641. https://doi.org/10.1093/jnci/djae017
Goodyear, V. A., Armour, K. M., & Wood, H. (2018). Young people and their engagement with health-related social media: new perspectives. Sport, education and

Chen, C., Hardjo, S., Sonnert, G. et al. (2021) The role of media in influencing students' STEM career interest. IJ STEM Ed 10, 56 (2023).

Get the facts: Diversity in extramural programs. Get the Facts | Diversity in Extramural Programs. (2019).

https://web.archive.org/web/20240926172357/https://extramural-diversity.nih.gov/diversity-matters/get-the-facts

Kaljo, K., Ngui, E. M., Treat, R., & Rader, J. S. (2023). Student-centered Pipeline to Advance Research in Cancer Careers (SPARCC): Diversifying the Clinical Cancer Research Workforce. Journal of cancer education: the official journal of the American Association for Cancer Education, 38(1), 370–377.

White, Erin and Shakibnia, Ariana F. (2019) "State of STEM: Defining the Landscape to Determine High-Impact Pathways for the Future Workforce," Proceedings of the Interdisciplinary STEM Teaching and Learning Conference: Vol. 3, Article 4. DOI: 10.20429/stem.2019.030104

Jafar, Z., Quick, J. D., Rimányi, E., & Musuka, G. (2024). Social Media and Digital Inequity: Reducing Health Inequities by Closing the Digital Divide. International iournal of environmental research and public health, 21(11), 1420. https://doi.org/10.3390/ijerph21111420

Swire-Thompson, B., & Lazer, D. (2020). Public Health and Online Misinformation: Challenges and Recommendations. Annual review of public health, 41, 433–451. https://doi.org/10.1146/annurev-publhealth-040119-094127