

# Using twitter for science

Lex Nederbragt

# February 5, 2019, an email arrived

Dear Dr Grytten,

I am writing from *Genome Biology* as I have recently seen your co-author, Lex Nederbragt, discussing on Twitter your preprint entitled ‘Assessing graph-based read mappers ...’

As you may have seen, we recently launched a call for papers for manuscripts describing methods for analyzing graph genomes

We think your preprint would fit very nicely in the collection

We would be very happy for you to submit it to our article collection, guaranteeing peer-review if it is submitted

# What is ?

- Short message service ('microblogging')
- Limited to ~~140~~ 280 characters
- Tweets and tweeting
  - 'open access'
- Follow people's tweets - timeline

Credit due: <http://www.slideshare.net/kbradnam/twitter-101-an-introduction-to-twitter#>

Getting started on **twitter** 

# Step 1 – get an account

NOT necessary!



**Lex Nederbragt**  
@lexnederbragt

Tweets <b>37.9K</b>	Following <b>312</b>	Followers <b>7,766</b>
------------------------	-------------------------	---------------------------

Since June 2009,  
@lexnederbragt is my twitter ‘handle’

## Step 2 – find interesting accounts to follow



**Lex Nederbragt**  
@lexnederbragt

Tweets **37.9K**   Following **312**   Followers **7,766**

I follow @SandveGeir  
and get to see his tweets  
in my timeline



**Geir Kjetil Sandve**  
@SandveGeir Follows you

Tweets **16**   Following **33**   Followers **69**

Following

# Step 3 – be followed



**Lex Nederbragt**  
@lexnederbragt

Tweets **37.9K**   Following **312**   Followers **7,766**

→  
@SandveGeir  
also follows me  
←



**Geir Kjetil Sandve**  
@SandveGeir

Tweets **16**   Following **33**   Followers **69**   **Following**

## Step 4 – start reading and posting tweets

Following helps filter all tweets

A large, rounded rectangular button with a thin black outline. The word "Follow" is centered inside in a bold, dark gray sans-serif font.

**Follow**

# What to do with twitter

Read content

 **Nature News & Comment**   
@NatureNews

Follow 

Check out our pick of the best science books to read this week 



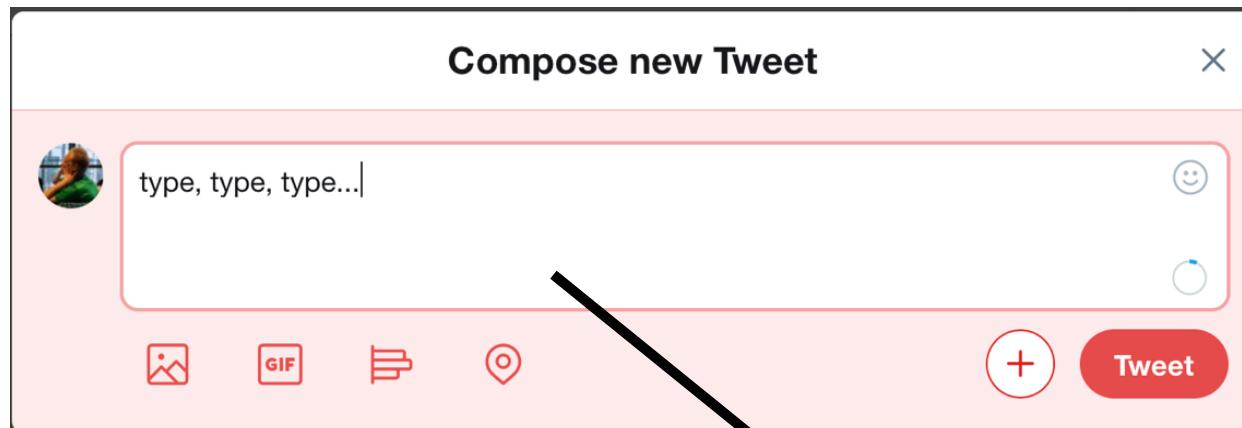
**The future of genetic engineering, a treasure trove of insects, and a love letter...**  
Barbara Kiser reviews five of the week's best science picks.  
[nature.com](http://nature.com)

Tweets often contain links



# What to do with twitter

## Write content



Links you insert are automatically shortened

# What to do with twitter

## Promote your work



Geir Kjetil Sandve  
@SandveGeir

Following

Devil in details: the choice of metric may lead to entirely different conclusions in genomic colocalization analysis



THE PREPRINT SERVER FOR BIOLOGY

Beware the Jaccard: the choice of metric is important and n...

Background The generation and systematic collection of genome-wide data is ever-increasing. This vast amount of data has enabled researchers to study relations between a variety of ge...

[biorxiv.org](http://biorxiv.org)

3:40 PM - 29 Nov 2018

9 Retweets 13 Likes



1



9



13



# What to do with twitter

## Redistribute content



Geir Kjetil Sandve  
@SandveGeir

Following

Devil in details: the choice of metric may lead to entirely different conclusions in genomic colocalization analysis



Beware the Jaccard: the choice of metric is important and n...

Background The generation and systematic collection of genome-wide data is ever-increasing. This vast amount of data has enabled researchers to study relations between a variety of ge...

biorxiv.org

Post to your timeline

3:40 PM - 29 Nov 2018

9 Retweets 13 Likes



13



13



# What to do with twitter

Or 'like' it

Geir Kjetil Sandve  
@SandveGeir

Following

Devil in details: the choice of metric may lead to entirely different conclusions in genomic colocalization analysis

**bioRxiv**  
THE PREPRINT SERVER FOR BIOLOGY

Beware the Jaccard: the choice of metric is important and n...  
Background The generation and systematic collection of genome-wide data is ever-increasing. This vast amount of data has enabled researchers to study relations between a variety of ge...  
[biorxiv.org](http://biorxiv.org)

3:40 PM - 29 Nov 2018

9 Retweets 13 Likes

Q 13 M

A black arrow points from the text "Or 'like' it" to the "Likes" button in the tweet footer.

# What to do with twitter

## Communicate

 **Albert Vilella** @AlbertVilella · May 4

What are #GraphGenomes and how do they compare to #NGS #Mapping to the linear-based representation of the #HumanGenome ? See here the highlights of recent preprints on the subject: [youtube.com/watch?v=AQ5Mpf...](https://youtube.com/watch?v=AQ5Mpf...)  
#TheOmicsCast

Vilella  
Genomics  
Limited

Vilella Genomics

[youtube.com](https://youtube.com)

3

10

24

# What to do with twitter

## Communicate

Me mentioning others, who will be notified about it

Albert Vilella @AlbertVilella · May 4  
What are #GraphGenomes and how do they compare to #NGS #Mapping to the linear-based representation of the #HumanGenome ? See here the highlights of recent preprints on the subject: youtube.com/watch?v=AQ5Mpf... #TheOmicsCast

Vilella Genomics  
youtube.com

3 10 24

Replies 3 Retweets 10 Likes 24

Hey @IvarGrytten @kuppern87: this is @AlbertVilella discussing your work on graph mappers! @SandveGeir

Albert Vilella @AlbertVilella  
What are #GraphGenomes and how do they compare to #NGS #Mapping to the linear-based representation of the #HumanGenome ? See here the highlights of recent preprints on the subject: youtube.com/watch?v=AQ5Mpf... #TheOmicsCast  
[bit.ly/theomicscast](http://bit.ly/theomicscast)

3:52 PM - 4 May 2019

1 Retweet 1 Like

Ivar Grytten @IvarGrytten FOLLOW YOU

PhD student mainly working on graph-based reference genomes

Follow

Oslo, Norway

FOLLOWERS 29 FOLLOWING 60

Knut Rand @kuppern87 FOLLOW YOU

Statistics PhD student at the University of Oslo

Follow

Oslo, Norway

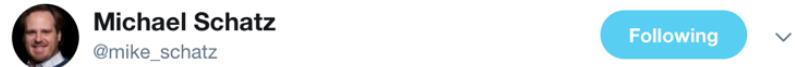
FOLLOWERS 50 FOLLOWING 98



# What to do with twitter

Follow conferences

hashtag



Opening talk for **#bog19** by @arjunrajlab.  
Non-genetic variability and therapy  
resistance in cancer. Should be a great  
meeting!



1:34 AM - 8 May 2019

5 Retweets 24 Likes



# What to do with twitter

## Follow conferences



**Anthony Mathelier**

@AMathelier

Following



Ivo Gut starting the day with the presentation of the pan-cancer project.  
**#osloinsilico2019**

9:26 AM - 16 May 2019

1 Like



1



1



Tweet your reply

# What twitter is NOT

**Facebook**

**lengthy discussions**

**for old news**

# Who is on twitter

## News services



Where the Conversation Begins. Follow for breaking news, NYTimes.com home page articles, special features and RTs of our journalists.  
New York, NY · <http://www.nytimes.com/>

Followed by [Ion Torrent](#), [Life Technologies](#), [Illumina](#) and [3 others](#).

82,609  
TWEETS    629  
FOLLOWING    4,962,004  
FOLLOWERS



Nyhetsfeed fra Aftenposten. Kontaktinfo: Tlf: 02286, e-post: 2286@aftenposten.no eller SMS/MMS til 2286.  
Oslo, Norway · <http://www.ap.no>

Followed by [Ståle Nygård](#), [Universitetet i Oslo](#), [forskning.no](#) and [2 others](#).

38,791  
TWEETS    71  
FOLLOWING    17,468  
FOLLOWERS



CNN.com is among the world's leaders in online news and information delivery.  
Everywhere · <http://cnn.com/>

Followed by [Last Gen Sequencing](#), [Sébastien Boisvert](#), [forskning.no](#) and [4 others](#).

16,991  
TWEETS    65  
FOLLOWING    7,297,505  
FOLLOWERS

# Who is on twitter

## Science journals

 **Nature News&Comment** ✅ ×  
@NatureNews

The latest science news and opinion from [@NatureMagazine](#).  
Winner Best Twitter, Online Media Awards 2011, and Shorty Award for science, 2012.  
London · <http://www.nature.com/news>

Followed by [Dale Yuzuki](#) , [Nature Magazine](#) , [Håvard Kauserud](#) and  
[10+ others](#).

14,853 TWEETS    2,754 FOLLOWING    350,075 FOLLOWERS

 **Science Magazine** ✕  
@sciencemagazine

The world's leading outlet for scientific news, commentary, and cutting-edge research.  
Washington, DC & Cambridge, UK · <http://www.sciencemag.org>

Followed by [Håvard Kauserud](#) , [Protist 2012](#) , [Last Gen Sequencing](#) and  
[10+ others](#).

6,094 TWEETS    346 FOLLOWING    50,258 FOLLOWERS

 **forskning.no** ✕  
@forskningno

Nina Kristiansen, redaktør i forskning.no - nettavis om norsk og internasjonal forskning.  
Oslo, Norway · <http://forskning.no>

Followed by [Håvard Kauserud](#) , [Grønt UiO](#) , [Protist 2012](#) and [9 others](#).

3,454 TWEETS    493 FOLLOWING    7,211 FOLLOWERS

# Who is on twitter

## Your colleagues



A screenshot of a Twitter profile card for Geir Kjetil Sandve. The card has a blue header with a circular profile picture of a man with a beard. Below the header, the name "Geir Kjetil Sandve" and the handle "@SandveGeir" are displayed, with a note that he follows you. The stats show 16 tweets, 33 following, and 69 followers. A large blue "Following" button is prominent. At the bottom, there's a small "Follow" button.

Tweets 16    Following 33    Followers 69    [Following](#)

**Geir Kjetil Sandve**  
@SandveGeir Follows you



A screenshot of a Twitter profile card for Ivar Grytten. It features a blue profile picture placeholder. The name "Ivar Grytten" and handle "@IvarGrytten" are shown, with a note that he follows you. The bio states: "PhD student mainly working on graph-based reference genomes". Location is listed as "Oslo, Norway". The stats show 29 followers and 60 following. A "Follow" button is present.

[Follow](#)

**Ivar Grytten**  
@IvarGrytten [FOLLOWS YOU](#)

PhD student mainly working on  
graph-based reference  
genomes

Oslo, Norway

FOLLOWERS 29    FOLLOWING 60



A screenshot of a Twitter profile card for Knut Rand. It features a blue profile picture placeholder. The name "Knut Rand" and handle "@kuppern87" are shown, with a note that he follows you. The bio states: "Statistics PhD student at the University of Oslo". Location is listed as "Oslo, Norway". The stats show 50 followers and 98 following. A "Follow" button is present.

[Follow](#)

**Knut Rand**  
@kuppern87 [FOLLOWS YOU](#)

Statistics PhD student at the  
University of Oslo

Oslo, Norway

FOLLOWERS 50    FOLLOWING 98

And more...

# Who is on twitter

## Your work



**IFI, UiO**

@UniOslo\_IFI

Institutt for informatikk har et bredt studietilbud med 800 bachelorstudenter, 450 masterstudenter og 220 PhD-studenter.

© Gaustadalléen, Oslo, Norway [mn.uio.no/ifi/](http://mn.uio.no/ifi/) Joined June 2013

5 Following 288 Followers

[Follow](#)



**Universitetet i Oslo**

@UniOslo

Universitetet i Oslo, Norges eldste og beste. University of Oslo. Følg oss på:  
[facebook.com/UniOslo](http://facebook.com/UniOslo)

© Oslo, Norway [uio.no](http://uio.no) Joined May 2009

2,242 Following 23.7K Followers

[Follow](#)

# What do you find on twitter

**News – fast!**



<http://twitpic.com/135xa> - There's a plane in the Hudson. I'm on the ferry going to pick up the people. Crazy.

 Reply  Retweet  Favorite  Pocket

50+  
RETWEETS

50+  
FAVORITES

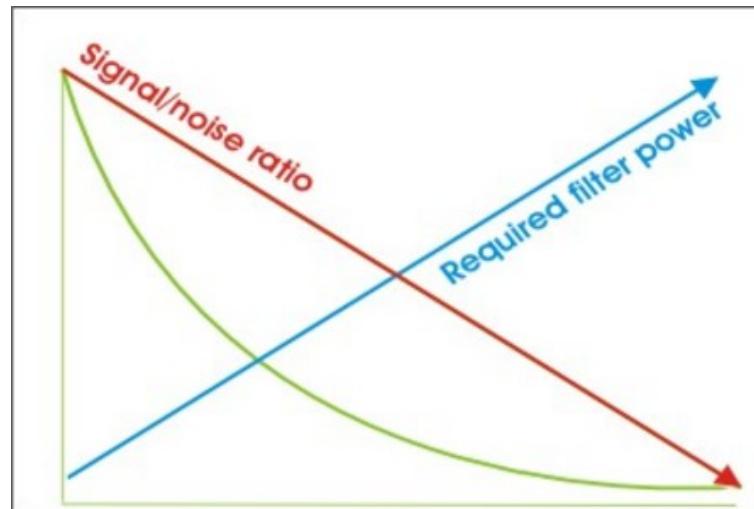


9:36 PM - 15 Jan 09 via TwitPic · Embed this Tweet



# What do you find on twitter

**Lot's of noise**



[http://longtail.typepad.com/the\\_long\\_tail/2005/05/isnt\\_the\\_long\\_t.html](http://longtail.typepad.com/the_long_tail/2005/05/isnt_the_long_t.html)

# What do you find on twitter

## **Science:**

science news

new scientific articles

new blog posts

conference tweeting

# What do you find on twitter

**Stephen Turner** [@genetics\\_blog](#) Following

#iCanHazPDF anyone? Generation and Analysis of Genome-Wide DNA Methylation Maps  
[springerlink.com/content/x1xt30...](http://springerlink.com/content/x1xt30...)  
#bioinformatics

Reply Retweet Favorite

4:42 PM - 1 May 12 via Tweet Button · Embed this Tweet

**Monkey Bones** [@iratesheep](#) 19h

@genetics\_blog #youcanhazpdf - google doc file at [bit.ly/IHhchX](http://bit.ly/IHhchX)

Details

# What do you find on twitter

 **Geir Kjetil Sandve**  
@SandveGeir Following ▾

Very excited to announce with  
[@yana\\_safanova](#) and Pavel Pevzner and  
[@victorgreiff](#) a joint @UiO/[@UCSD](#) PhD  
position in merging probabilistic modeling  
and machine learning analysis for antibody  
and T-cell receptor repertoire analysis:  
[tinyurl.com/suurph](http://tinyurl.com/suurph). Deadline: April 7 2019!



**PhD fellowships available in computational science through the SUURPh tra...**  
Job title: PhD fellowships available in computational science through the SUURPh  
training programme (166324), Employer: University of Oslo, Deadline: The applica...  
[jobbnorge.no](#)

8:38 PM - 12 Mar 2019

7 Retweets 18 Likes



# What do you find on twitter

 **Torbjørn Rognes**  
@torognes

Following ▾

We have made VSEARCH more user-friendly,  
try our latest release! Version 2.13.0.



**torognes/vsearch**

Versatile open-source tool for metagenomics. Contribute to  
torognes/vsearch development by creating an account on GitHub.

[github.com](https://github.com/torognes/vsearch)

12:14 PM - 23 Apr 2019

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12 Retweets 21 Likes



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Reply  12  12  21 

# What do you find on twitter

 **Michael White** @MWClimateSci

[Follow](#) ▾

I've handled the review of > 1000 papers at [@nature](#). Over time, you notice aspects of presentation on which reviewers tend to comment. In the interests of minimizing hassles during review, I offer the following suggestions (a bit targeted to climate papers).

12:34 AM - 30 Mar 2019

4,305 Retweets 9,726 Likes

100 4.3K 9.7K

 Tweet your reply

**Michael White** @MWClimateSci · Mar 30  
Double space: make it easy on the reader (and editor) by double spacing the entire text, including references and figure legends.

## Twitter thread

-  **Michael White** @MWClimateSci · Mar 30  
Double space: make it easy on the reader (and editor) by double spacing the entire text, including references and figure legends.
- 18 24 298
-  **Michael White** @MWClimateSci · Mar 30  
Use big fonts: again, make the paper easy to read. Tracking 30 words across one line in a tiny font is hard, especially if you are reading for hours at a time. Instead, use a font that provides about 12-15 words per line of text.
- 2 19 234
-  **Michael White** @MWClimateSci · Mar 30  
Use continuous line numbers: reviewers like to refer to specific line numbers and frequently comment on their absence.
- 4 24 288
-  **Michael White** @MWClimateSci · Mar 30  
Avoid subjective wording: reviewers will often object to words/phrases like "unprecedented", "paradigm shift", "amazing", "dramatic", and "remarkable". Best to present your results, and let the readers make up their minds about the magnitude of the advance.
- 7 79 708
-  **Michael White** @MWClimateSci · Mar 30  
Avoid acronyms: a rule of thumb might be to use an acronym if the term is used at least five times. Do use common acronyms, like SST, CDW, NPP, AMOC. Avoid, if at all possible, inventing acronyms that are unique to your paper.
- 11 55 524
-  **Michael White** @MWClimateSci · Mar 30  
Avoid words like "influence": instead, state the direction of the effect you're describing. So, instead of hypothetically writing "Precipitation influences net primary production" write "Precipitation increases net primary production". Better yet, use numbers.
- 2 63 595
-  **Michael White** @MWClimateSci · Mar 30  
Avoid using "significant" to mean "big" or "major": too easily confused with the results of a statistical test. Even if you are reporting the results of a statistical test, it's better to report the numerical results instead. In fact, best to avoid "significantly" entirely.
- 6 72 702
-  **Michael White** @MWClimateSci · Mar 30  
Define uncertainties: probably half of initial submissions do not fully define the meaning of error bars and/or uncertainties. 95% confidence intervals, ranges, 2 sigma? Is the box plot showing the interquartile range, or something else? Tell us, in the figure legend.
- 1 34 400
-  **Michael White** @MWClimateSci · Mar 30  
Consider accessibility: try to use colors in a way that won't create problems for the many readers with some form of color blindness (for a good discussion and design suggestions see [somersault1824.com/tips-for-desig...](#)).
- 13 143 794
-  **Tips for designing scientific figur...**  
[somersault1824.com](#)

# What do you find on twitter



Vy



@vygruppen

Follow



Slik påvirker arbeidet på jernbanen  
togtrafikken rundt Oslo i sommer:  
[bit.ly/2JsNBEb](https://bit.ly/2JsNBEb)

Translate Tweet

9:22 AM - 16 May 2019

# What do I find on twitter

finding out about new articles

finding out about new blog posts

following a conference without being there

news items relevant for my research

networking

announcing new blog posts

# Why do I use twitter

Building reputation

Getting updates

Discuss science

Get help

# Cool stuff that happened



A screenshot of a Twitter profile card. At the top is a circular profile picture of a young man with brown hair, smiling. Below the picture, the name "Nick Loman" is displayed in bold black text, followed by the handle "@pathogenomenick" and the status "Follows you". To the right of the profile picture are five metrics: "Tweets 56.9K", "Following 1,613", "Followers 24.3K", "Likes 17.9K", and "Lists 1". Below these metrics is a navigation bar with three tabs: "Tweets" (which is bolded), "Tweets & replies", and "Media". Underneath the navigation bar, the text "Pinned Tweet" is visible.

**Nick Loman**  
@pathogenomenick Follows you

Tweets 56.9K   Following 1,613   Followers 24.3K   Likes 17.9K   Lists 1

**Tweets**   Tweets & replies   Media

Pinned Tweet

# Cool stuff that happened



NORWEGIAN SEQUENCING CENTRE

@norseqcenter

**NSC course: High Through-put Sequencing: technology basics, applications and bioinformatic analysis (Oct. 25-27 2011)**

**Wednesday - Thursday Oct 26<sup>th</sup>-27<sup>th</sup> 9:00-17:00 De novo genome assembly**

Teachers

Lex Nederbragt (NSC, CEES - Dept. of Biology, Univ. of Oslo, <http://flavors.me/flxlex>) Nick Loman  
(School of Biosciences, University of Birmingham, United Kingdom,  
<http://pathogenomics.bham.ac.uk/staff/nloman.html>), Karin Lagesen (CEES), Ave Tooming  
klunderud (NSC and CEES), Trine Ballestad Rounge (CEES, Dept. of Biology, Univ. of Oslo)

# Cool stuff that happened

 **Lex Nederbragt**  
@lexnederbragt

#Illumina has a trade-in program to swap a 454  
#GSFLX for a discount on the #MiSeq? Smart!  
[bit.ly/H6Iukk](http://bit.ly/H6Iukk)

---

4 RETWEETS 

4:15 PM - 30 Mar 12 via chrome-share · Embed this Tweet

[Reply](#) [Delete](#) [Favorite](#)

**twitter** © 2012 Twitter About Help



**In Sequence**  
The Inside Read on Genome Sequencing

Home News Magazine Blogs Careers Video

Arrays MDx Informatics PCR Proteomics RNAi/miRNA

Home » News » In Sequence

## 454 Customers Report Mixed Results on FLX+; Short Reads and Low Throughput Top Problems

April 17, 2012

By [Monica Heger](#)

**Nearly a year** after Roche's 454 Life Sciences launched the GS FLX+, which promised modal read lengths of 700 base pairs with the longest reads reaching more than 1,000 base pairs, a number of customers are still experiencing problems with the system.

"On paper it's nice, but it takes a long time to get to work," said [Lex Nederbragt](#), who coordinates sequencing on the 454 and Pacific Biosciences systems at the Norwegian Sequencing Center in Oslo. Since purchasing the upgrade in August, he said his lab has consistently been having problems getting good runs, although he said they are slowly improving.

 [RSS Feed](#)

 [Subscribe to In Sequence](#)

Not so cool stuff that might happen

Over-following

Distracting

Addictive

Politics

Harassment

March 30, 2019, an email arrived

# March 30, 2019, an email arrived

Kunne du tenkt deg å holde en innføring i Twitter på et tirsdagsmøte?

Jeg kunne godt begynt med en 1-minutt om min totale forvirring

Mer konkret er jeg nysgjerrig på blant annet følgende:

...

..Geir Kjetil

# Geir Kjetil's questions

- Apps? Web?



Tweetbot for iOS/Mac

# Geir Kjetil's questions

- How to keep track of threads

# Geir Kjetil's questions

- Splitting one's feed into themes?

Twitter lists

# Geir Kjetil's questions

- How to contribute to a discussion (customs, referencing, tags)

Reply (by default: reply all)

# Geir Kjetil's questions

- How to refer to other people
- How to avoid being seen as spamming others?

Add '@username', be professional

# Geir Kjetil's questions

- How to discover relevant content, add comments?
- Who gets this content in their feed?

Follow the right people, check the right hashtags  
All followers and those mentioned see content

# Geir Kjetil's questions

- Can one be critical?

YES, be professional and constructive

# Geir Kjetil's questions

- How to work with the 280 character limitation?

Practice!

Links count only 23 characters

Mentions don't count, media don't count

# Geir Kjetil's questions

- What is a good mindset for a ‘tweeter’?

## Build an online reputation

- Be professional
- Be to the point
- Be constructive
  - Share

My 2nd most popular tweet



Lex Nederbragt  
@lexnederbragt

Følg

“The Genome Reference Consortium has decided to indefinitely postpone the release of the next coordinate-changing assembly GRCh39/hg39, instead opting for additional patches to GRCh38/hg38”  
[genome.ucsc.edu/blog/patches/](http://genome.ucsc.edu/blog/patches/)  
@GenomeBrowser @GenomeRef

Assembly	Year
NCBI34/hg16	2003
NCBI35/hg17	2004
NCBI36/hg18	2006
GRCh37/hg19	2009
GRCh38/hg38	2014

22:58 - 25. feb. 2019

109 retweets 75 liker



6 109 75

Should the Centre for Bioinformatics be on Twitter?