

Can we really use bibliometrics to form research teams?

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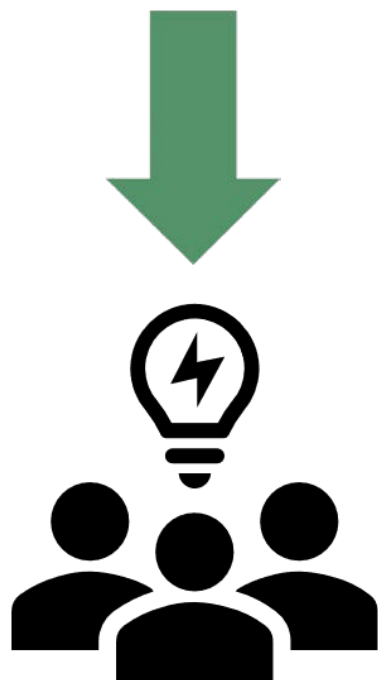
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Presented at 2019 Science of Team Science Conference,
Lansing, MI

May 21, 2019

Building strategic research teams: a data-driven approach?

- Individuals with the best stats
- Institutions with the best records



Our science dream team!

A baseball card for Frank Robinson, an outfielder for the Baltimore Orioles. The card features a portrait of Robinson in a Orioles uniform and a green circle with the text "OUTFIELD ORIOLES". Below the portrait is the name "FRANK ROBINSON". To the right of the portrait is a yellow box containing his name, position, team, and a table of his major and minor league batting record. The table lists years from 1953 to 1967, along with statistics for AB, H, 2B, 3B, HR, RBI, and AVG. Below the table is a small illustration of a player at bat and the text "Q - WHO LED THE ORIOLES STAFF IN APPEARANCES IN 1967?" and "SEWYD & LYN WOODS - A SCORING MAT". At the bottom right, it says "DT.C.G. PRINTED IN U.S.A."

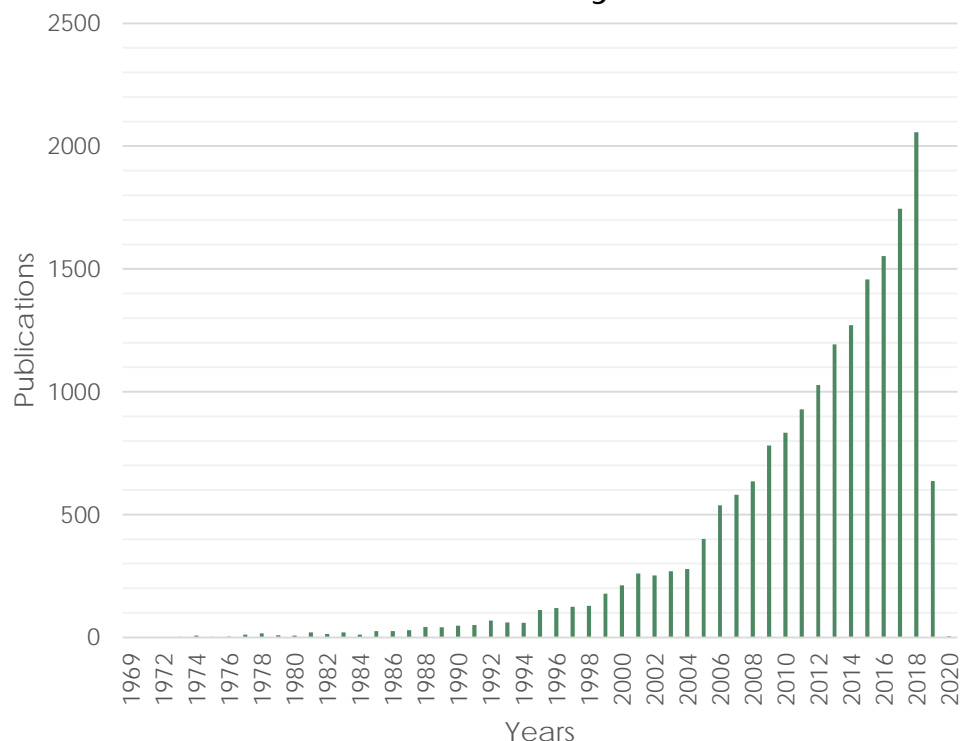
Objectives of this presentation

- Identify which types of bibliometric measures can be useful in building and enhancing a research team
- Identify gaps and challenges in employing a bibliometric approach to complement team formation
- Provide some guidance and insights for research team formation at the individual, group and organization levels

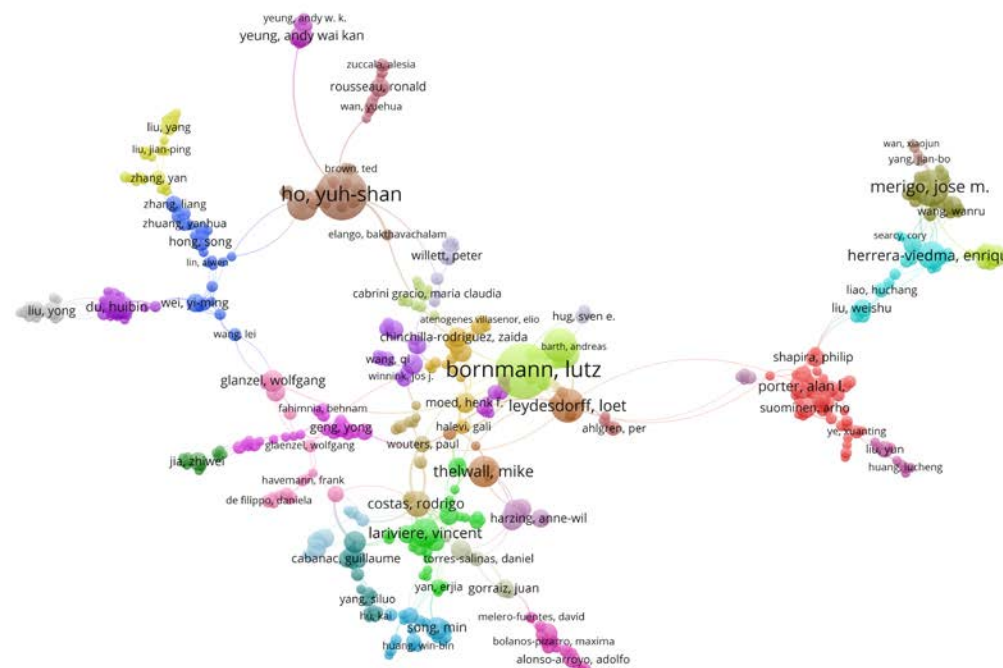
Bibliometrics

is the application of quantitative analysis and statistics to scholarly output such as journal articles and their accompanying citation information.

Query = Bibliometric*



Query: Bibliometric*
Years: 2014 - 2018
Authors: 1,972*

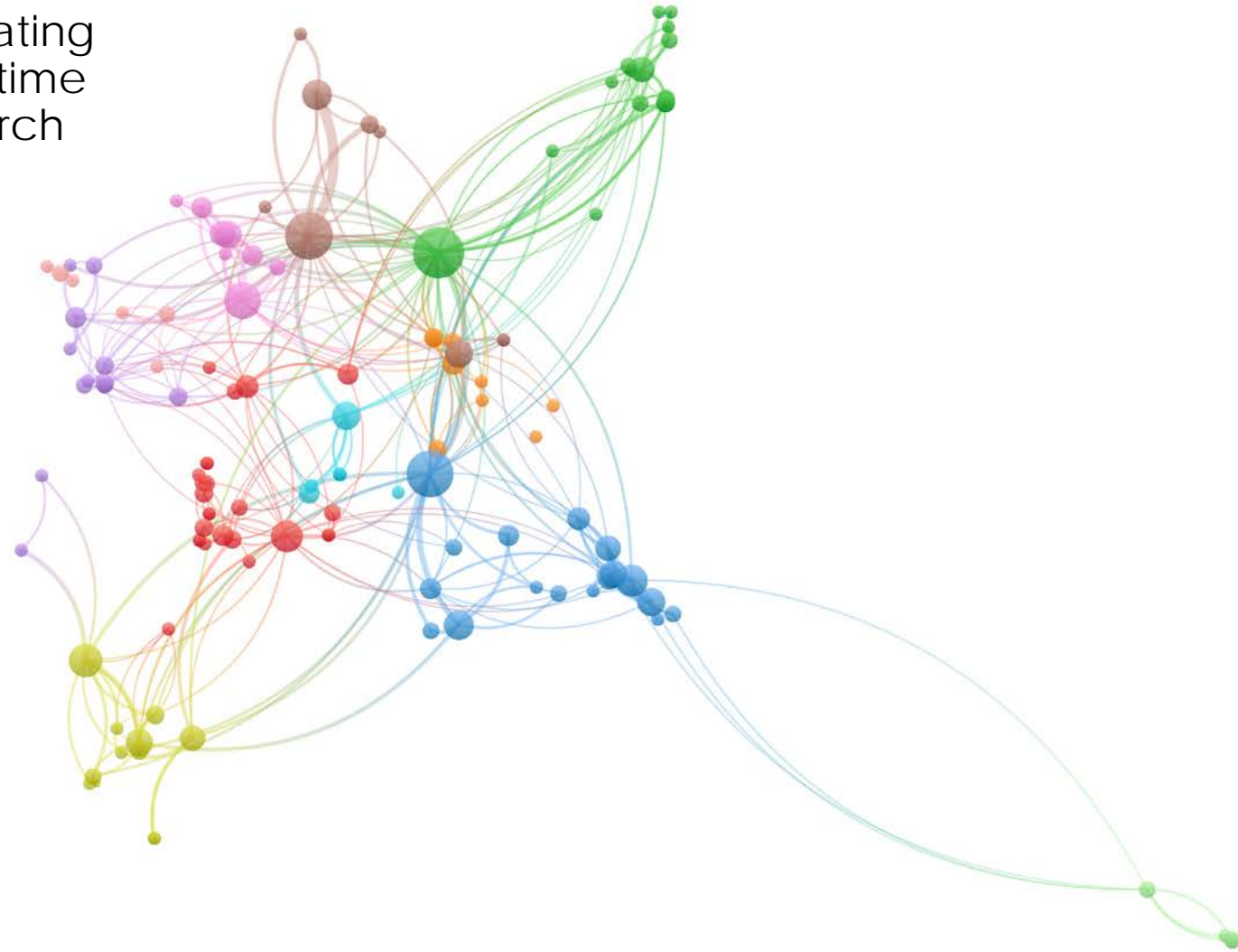


Bibliometrics can give us important collaboration insights

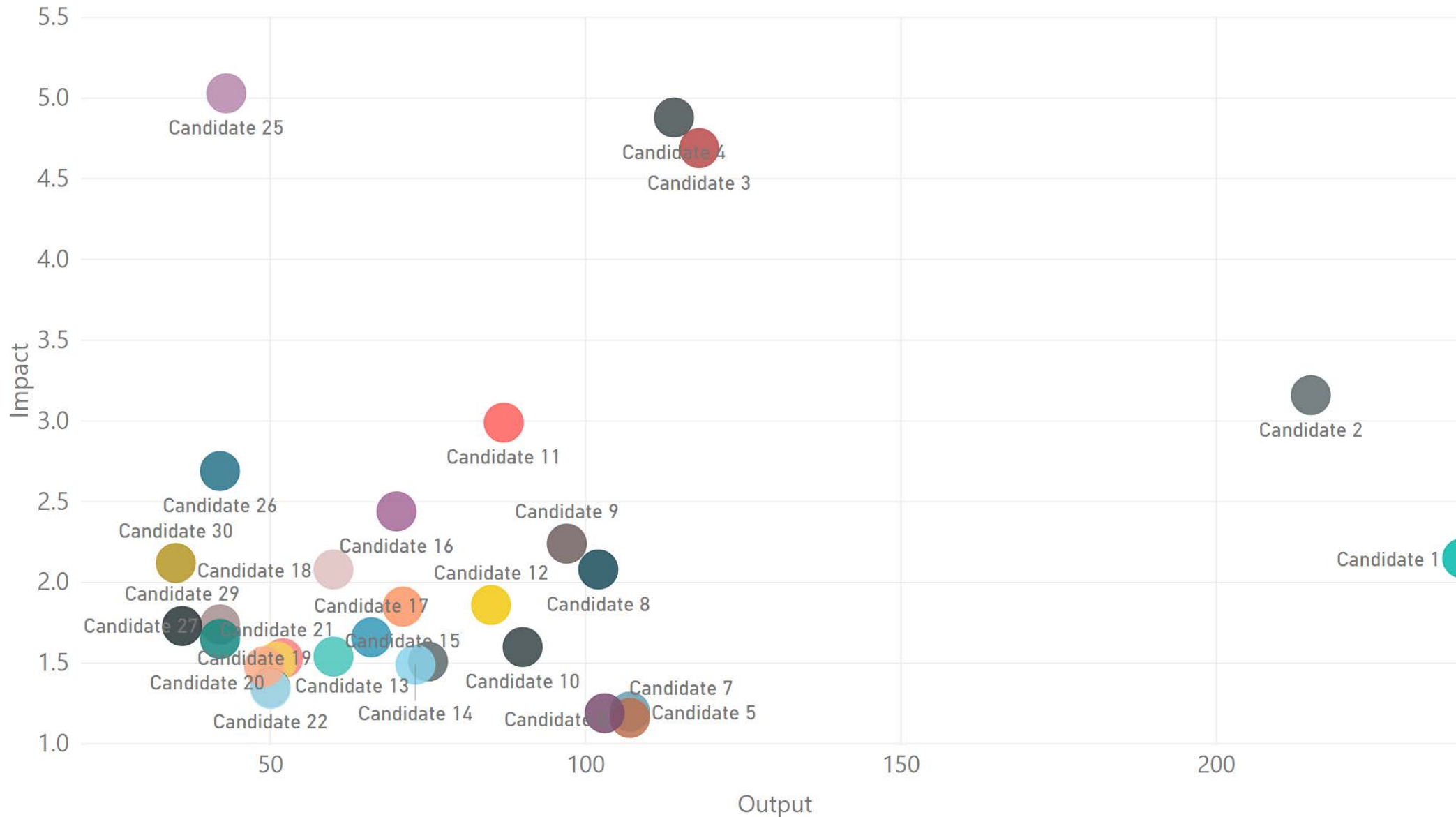
Bibliometric	Team considerations
Publication Volume	Are they active in their field?
Publication Impact	Is their work recognized?
Journal of Publication	Are they accepted by their peers?
Co-Authors	Are they part of successful teams?
Subjects and Keywords	Is their expertise relevant?
Institution	Is their geolocation relevant?

Case Study: Programmatic Collaboration

- All team leads are collaborating
- Network shows growth overtime
- Diversity in strength of research collaboration



Case Study: Benchmarking and Collaboration



Gaps and Challenges

- Technical issues in data (names, affiliation, etc.)
- Database coverage limitations
- Local data preparation, verification, and data curation
- Threshold criteria and weighting



Key Take Aways: Bibliometrics as Complementary Tools

- Personalities
- Team size
- Diversity
- Seniority
- Expertise
- Geolocation
- Knowledge integration
- Conflict tolerance
- Institutional context



End Notes

- Clear understanding of limitations and caveats of using bibliometric tools and techniques, including data sources
- Meaningful use of bibliometrics and link to collaboration decisions – not just an academic exercise
- Best practices in bibliometrics for team formation are based on compromises – different implications in different contexts
- Diversity in collaboration is always ideal, bibliometrics can facilitate collaborative matchmaking leading to a more organic collaboration

Thank you

