

Impact_Journal_Count

Michael Volk

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Import Author Information

Import list of scholars. Some of the scholars do not have a Google Scholar page so their unique ID was mared as “NA.” They are not considered in the analysis. If it is necessary to have their citation information we can count their citations manually.

```
df <- readxl::read_xlsx("./PI_google_scholar_ids.xlsx")
head(df, n = 3)
```

```
## # A tibble: 3 x 5
##   title last_name first_name institution google_scholar_id
##   <chr> <chr>      <chr>      <chr>          <chr>
## 1 PI     Zhao      Huimin    U of Ill Urbana-Champaign R8waAyOAAAAAJ
## 2 coPI   Burke     Martin    U of Ill Urbana-Champaign u4hmNXAAAAAJ
## 3 coPI   Denmark   Scott     U of Ill Urbana-Champaign NA
```

```
print(dim(df)) #Rows, Columns
```

```
## [1] 16 5
```

Extract High Impact Journal Information

Any journal with “Nature” in it’s title is captured with `str_extract` and articles published in “Science” were captured with an exact character match.

```
pubs <- lapply(df$google_scholar_id, get_publications)

impact_journal_count <- c()
nature <- c()
nature_sister <- c()
science <- c()
log_check <- c()
for (i in 1:length(pubs)){
  author <- pubs[[i]]
  #nature count
  nature_tot_count <- length(author$journal[as.logical(str_count(author$journal, "Nature"))])
  nature_count <- length(author$journal[author$journal == "Nature"])
  nature_sister_count <- nature_tot_count - nature_count
  nature_log <- as.logical(str_count(author$journal, "Nature"))
}
```

```

#science count
science_count <- length(author$journal[author$journal == "Science"])
science_log <- author$journal == "Science"

total_count <- nature_tot_count + science_count
total_log <- list(nature_log + science_log)

impact_journal_count <- c(impact_journal_count, total_count)
log_check <- c(log_check, total_log)
nature <- c(nature, nature_count)
nature_sister <- c(nature_sister, nature_sister_count)
science <- c(science, science_count)
}
num_cites <- c()
for (i in 1:nrow(df)){
  if (df$google_scholar_id[i] != "NA"){
    num_cites <- c(num_cites, get_profile(df$ google_scholar_id[i])$total_cites)
  }
  else {
    num_cites <- c(num_cites, 0)
  }
}
df_impact <- mutate(df, nature, nature_sister, science, impact_journal_count, num_cites)

```

Missing Google Scholar Profiles

For Authors without a Google Scholar profile the data was manually downloaded from the author profile page on *Web of Science*. Profile pages for Scott E. Denmark and Kenton McHenry exist but a profile page for Rachel Switzky could not be found. Scott E. Denmark has two search result hits, these were combined then downloaded. Kenton McHenry only has one one search result hit. This portion of the analysis is not completely reproducible as *Web of Science* requires log in credentials.

```

# Denmark, Scott E.
denmark <- read.table("Denmark_Scott_2020_05_22.txt", header = TRUE, sep = ",", skip = 2)
denmark_nature_tot <- sum(as.logical(str_count(denmark$Source.Title, "NATURE")))
df_impact$nature[3] <- sum(denmark$Source.Title == "NATURE")
df_impact$nature_sister[3] <- denmark_nature_tot - df_impact$nature[3]
df_impact$science[3] <- sum(denmark$Source.Title == "SCIENCE")
df_impact$impact_journal_count[3] <- df_impact$nature[3] + df_impact$nature_sister[3] + df_impact$science[3]
df_impact$num_cites[3] <- sum(denmark$Total.Citations)
denmark_log <- as.logical(str_count(denmark$Source.Title, "NATURE") + as.integer(denmark$Source.Title == "SCIENCE"))

# McHenry, Kenton
mchenry <- read.table("McHenry_Kenton_2020_05_22.txt", header = TRUE, sep = ",", skip = 2)
mchenry_nature_tot <- sum(as.logical(str_count(mchenry$Source.Title, "NATURE")))
df_impact$nature[10] <- sum(mchenry$Source.Title == "NATURE")
df_impact$nature_sister[10] <- mchenry_nature_tot - df_impact$nature[10]
df_impact$science[10] <- sum(mchenry$Source.Title == "SCIENCE")
df_impact$impact_journal_count[10] <- df_impact$nature[10] + df_impact$nature_sister[10] + df_impact$science[10]
df_impact$num_cites[10] <- sum(mchenry$Total.Citations)
mchenry_log <- as.logical(str_count(mchenry$Source.Title, "NATURE") + as.integer(mchenry$Source.Title == "SCIENCE"))

```

Team Totals

Total number of publications from the team classified as: Nature publication, Nature Sister publication, Science publication

```
publications_totals <- data.frame(sum(nature),sum(nature_sister), sum(science))
names(publications_totals) <- c("Nature Publications","Nature Sister Journal Publications","Science Publications")
knitr::kable(publications_totals, caption = "Team Publication Totals")
```

Table 1: Team Publication Totals

Nature Publications	Nature Sister Journal Publications	Science Publications
13	95	16

Average Citation per Author

The average number of citations per team member including the three team members without google scholar profiles.

```
knitr::kable(mean(df_impact$num_cites), col.name = "Average", caption = "Average citation per team member")
```

Table 2: Average citation per team member

Average
20368.88

All Results

Table of Results

```
knitr::kable(df_impact)
```

title	last_name	first_name	institution	google_scholar_id	nature	nature_sister	science
PI	Zhao	Huimin	U of Ill Urbana-Champaign	R8waAy0AAAAJ	2	19	0
coPI	Burke	Martin	U of Ill Urbana-Champaign	u4hmNXAAAAAJ	1	9	3
coPI	Denmark	Scott	U of Ill Urbana-Champaign	NA	1	4	2
coPI	Peng	Jian	U of Ill Urbana-Champaign	H2JX-RQAAAAJ	0	9	1
coPI	Sinha	Saurabh	U of Ill Urbana-Champaign	7BM1uyYAAAAJ	1	4	3
srPe	Diao	Ying	U of Ill Urbana-Champaign	ZbEs7rsAAAAJ	0	7	0
srPe	Han	Jiawei	U of Ill Urbana-Champaign	Kv9AbjMAAAAAJ	0	0	0
srPe	Ji	Heng	U of Ill Urbana-Champaign	z7GCqT4AAAAJ	0	1	0
srPe	Maranas	Costas	PA St U University Park	l3M1PW0AAAAJ	0	10	0
srPe	McHenry	Kenton	U of Ill Urbana-Champaign	NA	0	0	0
srPe	Schroeder	Charles	U of Ill Urbana-Champaign	wIY9shsAAAAJ	0	4	1
srPe	Shukla	Diwakar	U of Ill Urbana-Champaign	Cm2dWNYAAAAJ	0	6	0
srPe	Switzky	Rachel	U of Ill Urbana-Champaign	NA	0	0	0
srPe	White	Maria	U of Ill Urbana-Champaign	ICPpNtkAAAAJ&hl	2	5	3

title	last_name	first_name	institution	google_scholar_id	nature	nature_sister	science
srPe	Zanibbi	Richard	Rochester Inst of Tech	k6xVb1QAAAAJ	0	0	0
coPI	Grzybowski	Bartosz A.	Northwestern University	hjS0xZ0AAAAJ	7	21	5

```
knitr::kable(select(df_impact, last_name, first_name, impact_journal_count, num_cites))
```

last_name	first_name	impact_journal_count	num_cites
Zhao	Huimin	21	18376
Burke	Martin	13	7091
Denmark	Scott	7	26388
Peng	Jian	10	6268
Sinha	Saurabh	8	10301
Diao	Ying	7	5430
Han	Jiawei	0	187215
Ji	Heng	1	6559
Maranas	Costas	10	15798
McHenry	Kenton	0	105
Schroeder	Charles	5	3144
Shukla	Diwakar	6	2740
Switzky	Rachel	0	0
White	Maria	10	9075
Zanibbi	Richard	0	2119
Grzybowski	Bartosz A.	33	25293

Titles of Author's High Impact Publications

The following are titles of the high impact papers (Nature, Nature Sister, and Science) published by each Author. Authors that did not have Google Scholar Profiles were omitted from this part of the analysis.

```
for (i in 1:nrow(df_impact)){
  last_name <- df_impact$last_name[i]
  author_col_name <- (sprintf("%s's High Impact Publications",last_name))
  if (i != 3 & i != 10){
    authors_pubs <- pubs[[i]]$title[as.logical(log_check[[i]])]
    print(i)
  }
  else if (i == 3){
    #Scott E Denmark
    authors_pubs <- denmark$Title[denmark_log]
  }
  else if (i == 10){
    #Kenton McHenry
    authors_pubs <- mchenry$Title[mchenry_log]
  }

  print(knitr::kable(authors_pubs, col.names = "High Impact Publication Titles",
    caption = author_col_name))
  cat('\n')
}
```

[1] 1

Table 5: Zhao’s High Impact Publications

High Impact Publication Titles
Molecular evolution by staggered extension process (StEP) in vitro recombination
Chromatin architecture reorganization during stem cell differentiation
Activation and characterization of a cryptic polycyclic tetramate macrolactam biosynthetic gene cluster
CRISPR–Cas9 strategy for activation of silent <i>Streptomyces</i> biosynthetic gene clusters
Automated multiplex genome-scale engineering in yeast
In vitro ‘sexual’ evolution through the PCR-based staggered extension process (StEP)
Combinatorial metabolic engineering using an orthogonal tri-functional CRISPR system
Direct observation of TALE protein dynamics reveals a two-state search mechanism
Cooperative asymmetric reactions combining photocatalysis and enzymatic catalysis
Genome-scale engineering of <i>Saccharomyces cerevisiae</i> with single-nucleotide precision
Direct cloning of large genomic sequences
TALE proteins search DNA using a rotationally decoupled mechanism
Building a global alliance of biofoundries
Genome-wide identification of natural RNA aptamers in prokaryotes and eukaryotes
Activation of silent biosynthetic gene clusters using transcription factor decoys
Indoleacetate decarboxylase is a glycyl radical enzyme catalysing the formation of malodorous skatole
Radical-mediated C–S bond cleavage in C2 sulfonate degradation by anaerobic bacteria
Towards a fully automated algorithm driven platform for biosystems design
An efficient gene knock-in strategy using 5’-modified double-stranded DNA donors with short homology arms
Multi-functional genome-wide CRISPR system for high throughput genotype–phenotype mapping
DNA punch cards for storing data on native DNA sequences via enzymatic nicking

[1] 2

Table 6: Burke’s High Impact Publications

High Impact Publication Titles
Generating diverse skeletons of small molecules combinatorially
Synthesis of many different types of organic small molecules using one automated process
Amphotericin forms an extramembranous and fungicidal sterol sponge
Synthesis of most polyene natural product motifs using just 12 building blocks and one coupling reaction
Nontoxic antimicrobials that evade drug resistance
MIDA boronates are hydrolysed fast and slow by two different mechanisms
Electronic tuning of site-selectivity
Restored iron transport by a small molecule promotes absorption and hemoglobinization in animals
Towards the generalized iterative synthesis of small molecules
Small-molecule ion channels increase host defences in cystic fibrosis airway epithelia
Axial shielding of Pd(II) complexes enables perfect stereoretention in Suzuki–Miyaura cross-coupling of Csp ³ boronic acids
Toward generalization of iterative small molecule synthesis
Flexible tetracycline synthesis yields promising antibiotics

Table 7: Denmark’s High Impact Publications

High Impact Publication Titles
Pre-transmetalation intermediates in the Suzuki-Miyaura reaction revealed: The missing link
Catalytic, stereospecific syn-dichlorination of alkenes
Mechanistic, crystallographic, and computational studies on the catalytic, enantioselective sulfenofunctionalization of alkenes
N-silyl oxyketene imines are underused yet highly versatile reagents for catalytic asymmetric synthesis
Prediction of higher-selectivity catalysts by computer-driven workflow and machine learning
Organic chemistry - Catalysts break symmetry
Demystifying the asymmetry-amplifying, autocatalytic behaviour of the Soai reaction through structural, mechanistic and computational studies

[1] 4

Table 8: Peng’s High Impact Publications

High Impact Publication Titles
Template-based protein structure modeling using the RaptorX web server
A community effort to assess and improve drug sensitivity prediction algorithms
Computational solutions for omics data
Selection bias at the heterosexual HIV-1 transmission bottleneck
A community computational challenge to predict the activity of pairs of compounds
A network integration approach for drug-target interaction prediction and computational drug repositioning from heterogeneous information
Quality score compression improves genotyping accuracy
Community assessment to advance computational prediction of cancer drug combinations in a pharmacogenomic screen
Compressive mapping for next-generation sequencing
Typing tumors using pathways selected by somatic evolution

[1] 5

Table 9: Sinha’s High Impact Publications

High Impact Publication Titles
Assessing computational tools for the discovery of transcription factor binding sites
The genome of a songbird
Functional and evolutionary insights from the genomes of three parasitoid Nasonia species
Genomic signatures of evolutionary transitions from solitary to group living
Core and region-enriched networks of behaviorally regulated genes and the singing genome
Intravital imaging by simultaneous label-free autofluorescence-multiharmonic microscopy
Towards a fully automated algorithm driven platform for biosystems design
ChIPs and regulatory bits

[1] 6

Table 10: Diao’s High Impact Publications

High Impact Publication Titles
Solution coating of large-area organic semiconductor thin films with aligned single-crystalline domains
Flow-enhanced solution printing of all-polymer solar cells
The role of nanopore shape in surface-induced crystallization
One-dimensional self-confinement promotes polymorph selection in large-area organic semiconductor thin films
Dynamic-template-directed multiscale assembly for large-area coating of highly-aligned conjugated polymer thin films
Rotator side chains trigger cooperative transition for shape and function memory effect in organic semiconductors
Repurposing DNA-binding agents as H-bonded organic semiconductors

[1] 7

Table 11: Han’s High Impact Publications

High Impact Publication Titles

[1] 8

Table 12: Ji’s High Impact Publications

High Impact Publication Titles
Moralization in Social Networks and the Emergence of Violent Protests

[1] 9

Table 13: Maranas’s High Impact Publications

High Impact Publication Titles
Creation and analysis of biochemical constraint-based models using the COBRA Toolbox v. 3.0
A genome-scale Escherichia coli kinetic metabolic model k-ecoli457 satisfying flux data for multiple mutant strains
Pathway design using de novo steps through uncharted biochemical spaces
PoreDesigner for tuning solute selectivity in a robust and highly permeable outer membrane pore
EcoFABs: advancing microbiome science through standardized fabricated ecosystems
A microbial factory for diverse chemicals
Artificial water channels enable fast and selective water permeation through water-wire networks
Bacterial colonization reprograms the neonatal gut metabolome
Author Correction: Artificial water channels enable fast and selective water permeation through water-wire networks
Enzymes: Orchestrating hi-fi annotations

Table 14: McHenry’s High Impact Publications

High Impact Publication Titles

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Table 15: Schroeder’s High Impact Publications

High Impact Publication Titles

Observation of polymer conformation hysteresis in extensional flow
Multiplexed single-molecule assay for enzymatic activity on flow-stretched DNA
Direct observation of TALE protein dynamics reveals a two-state search mechanism
TALE proteins search DNA using a rotationally decoupled mechanism
Effect of molecular architecture on ring polymer dynamics in semidilute linear polymer solutions

[1] 12

Table 16: Shukla’s High Impact Publications

High Impact Publication Titles

Cloud-based simulations on Google Exacycle reveal ligand modulation of GPCR activation pathways
Activation pathway of Src kinase reveals intermediate states as targets for drug design
Dynamic-template-directed multiscale assembly for large-area coating of highly-aligned conjugated polymer thin films
Conformational heterogeneity of the calmodulin binding interface
A network of molecular switches controls the activation of the two-component response regulator NtrC
Corrigendum: Cloud-based simulations on Google Exacycle reveal ligand modulation of GPCR activation pathways

[1] 13

Table 17: Switzky’s High Impact Publications

High Impact Publication Titles

[1] 14

Table 18: White’s High Impact Publications

High Impact Publication Titles

A predictably selective aliphatic C–H oxidation reaction for complex molecule synthesis
Combined effects on selectivity in Fe-catalyzed methylene oxidation
Adding aliphatic C–H bond oxidations to synthesis
Total synthesis and study of 6-deoxyerythronolide B by late-stage C–H oxidation
A manganese catalyst for highly reactive yet chemoselective intramolecular C(sp ³)–H amination
Diverting non-haem iron catalysed aliphatic C–H hydroxylations towards desaturations
Oxidative diversification of amino acids and peptides by small-molecule iron catalysis
Manganese-catalysed benzylic C (sp ³)–H amination for late-stage functionalization

High Impact Publication Titles

Chemoselective methylene oxidation in aromatic molecules
Late-stage oxidative C (sp³)-H methylation

[1] 15

Table 19: Zanibbi's High Impact Publications

High Impact Publication Titles

[1] 16

Table 20: Grzybowski's High Impact Publications

High Impact Publication Titles

Self-assembly at all scales
The mosaic of surface charge in contact electrification
Dynamic self-assembly of magnetized, millimetre-sized objects rotating at a liquid-air interface
Directing cell motions on micropatterned ratchets
Plastic and moldable metals by self-assembly of sticky nanoparticle aggregates
Photoconductance and inverse photoconductance in films of functionalized metal nanoparticles
Electrostatic self-assembly of macroscopic crystals using contact electrification
The nanotechnology of life-inspired systems
Colloidal assembly directed by virtual magnetic moulds
Ultrasensitive detection of toxic cations through changes in the tunnelling current across films of striped nanoparticles
Dynamic hook-and-eye nanoparticle sponges
Geometric curvature controls the chemical patchiness and self-assembly of nanoparticles
The 'wired' universe of organic chemistry
Multicolour micropatterning of thin films of dry gels
Control of surface charges by radicals as a principle of antistatic polymers protecting electronic circuitry
Self-assembly of polymeric microspheres of complex internal structures
Molecular dynamics imaging in micropatterned living cells
Dynamic aggregation of chiral spinners
Chemoelectronic circuits based on metal nanoparticles
Systems of mechanized and reactive droplets powered by multi-responsive surfactants
Charged nanoparticles as supramolecular surfactants for controlling the growth and stability of microcrystals
Dynamic internal gradients control and direct electric currents within nanostructured materials
Vortex flows impart chirality-specific lift forces
A long-lasting concentration cell based on a magnetic electrolyte
Automatic mapping of atoms across both simple and complex chemical reactions
Lévy-like movement patterns of metastatic cancer cells revealed in microfabricated systems and implicated in vivo
Oscillating droplet trains in microfluidic networks and their suppression in blood flow
Interference-like patterns of static magnetic fields imprinted into polymer/nanoparticle composites
Targeted crystallization of mixed-charge nanoparticles in lysosomes induces selective death of cancer cells
Enhancing crystal growth using polyelectrolyte solutions and shear flow
Author Correction: Systems of mechanized and reactive droplets powered by multi-responsive surfactants.

High Impact Publication Titles

Systems of mechanized and reactive droplets powered by multi-responsive surfactants (vol 553, pg 313, 2018)

Nanosystem: Programmed communication
