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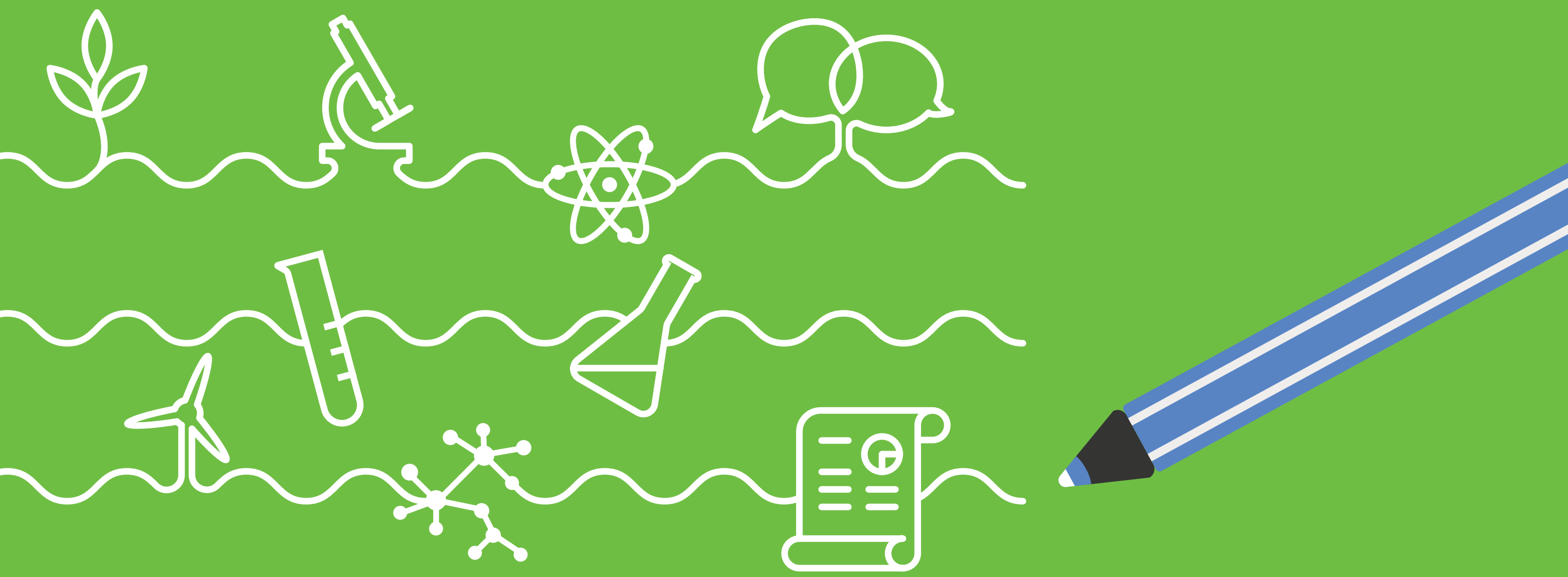


AuthorAID

Research Writing Workshop **Resources**

This handbook is for you to keep.
Please feel free to write anywhere on it.

Resources

D1-S4: Defining the focus and contribution of your paper

Peer assessment form

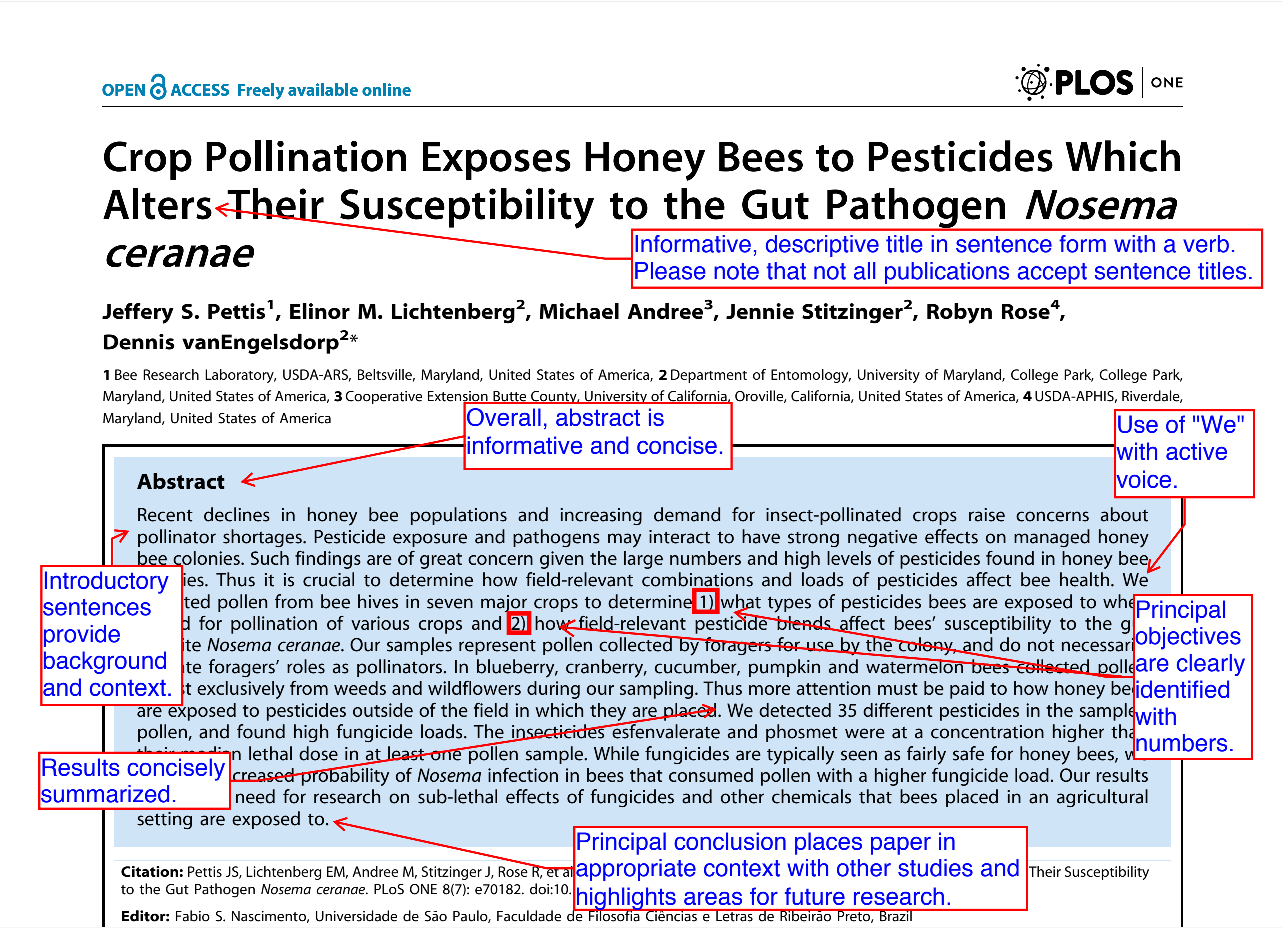
Once you have received your designated peer's essay, please evaluate it by writing your comments in the boxes on the right. Please provide constructive feedback. Email the completed form to your peer and the workshop facilitator.

Question the author should have addressed in their essay	**How clear is the author's response? Do you have any suggestions to improve the clarity or content?**
What is the focus of the author's research project?	
What has already been done or is already known in this area?	
What has the author done to add to what is known?	
What has the author found?	
How would the author's manuscript advance knowledge in their field?	

D2-S3: Writing the working title and abstract of your paper

Please refer to the following example to develop your abstract during this session.

(Adapted from www.authoraid.info/en/resources/details/648)



OPEN ACCESS Freely available online PLOS ONE

Crop Pollination Exposes Honey Bees to Pesticides Which Alters Their Susceptibility to the Gut Pathogen *Nosema ceranae*

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Abstract

Recent declines in honey bee populations and increasing demand for insect-pollinated crops raise concerns about pollinator shortages. Pesticide exposure and pathogens may interact to have strong negative effects on managed honey bee colonies. Such findings are of great concern given the large numbers and high levels of pesticides found in honey bee [illegible]ies. Thus it is crucial to determine how field-relevant combinations and loads of pesticides affect bee health. We [illegible]ted pollen from bee hives in seven major crops to determine 1) what types of pesticides bees are exposed to whe[illegible] [illegible]d for pollination of various crops and 2) how field-relevant pesticide blends affect bees' susceptibility to the g[illegible] [illegible]te *Nosema ceranae*. Our samples represent pollen collected by foragers for use by the colony, and do not necessari[illegible] [illegible]te foragers' roles as pollinators. In blueberry, cranberry, cucumber, pumpkin and watermelon bees collected poll[illegible] [illegible]t exclusively from weeds and wildflowers during our sampling. Thus more attention must be paid to how honey be[illegible] are exposed to pesticides outside of the field in which they are placed. We detected 35 different pesticides in the sample[illegible] pollen, and found high fungicide loads. The insecticides esfenvalerate and phosmet were at a concentration higher tha[illegible] their median lethal dose in at least one pollen sample. While fungicides are typically seen as fairly safe for honey bees, w[illegible] [illegible]creased probability of *Nosema* infection in bees that consumed pollen with a higher fungicide load. Our results [illegible] need for research on sub-lethal effects of fungicides and other chemicals that bees placed in an agricultural setting are exposed to.

Citation: Pettis JS, Lichtenberg EM, Andree M, Stitzinger J, Rose R, et al [illegible] Their Susceptibility to the Gut Pathogen *Nosema ceranae*. PLoS ONE 8(7): e70182. doi:10.[illegible]

Editor: Fabio S. Nascimento, Universidade de São Paulo, Faculdade de Filosofia Ciências e Letras de Ribeirão Preto, Brazil

D3-S2: The methods section of a research paper

Activity: Identifying missing information

The below excerpt is an edited version of a part of the methods section of a published paper. Try to identify the places that have missing, vague or incomplete information in this excerpt. Your job is not to provide the information of course – it's just to look for gaps or ambiguity.

Our study region was the Central Highlands of Victoria, located north east of the city of Melbourne. It includes the Central Highlands Regional Forest Agreement (RFA) area, which is approximately 1,100,000 hectares. It comprises 35% state forest, 16% formal reserves, and 4% other public land. Various kinds of forest covers approximately 64% of the total area of the RFA region, including much of mainland Australia's Mountain Ash forest. These forests provide habitat for a number of threatened and endemic species, but have also been a major source of pulpwood and sawlogs for various industries since the 1930s.

Wildfire is the main form of natural disturbance in forests across this area. The impacts of fire are variable, ranging from complete stand replacement after severe fires, to instances where the previous stand survives into the new stand. Extensive salvage logging following a few fires in recent history resulted in sizable areas of even-aged stands.

The existing reserve network in the Central Highlands RFA was established over several decades. The current Leadbeater's Possum Reserve was established in 2008, consists of both National Park and State Forest, and is dispersed across the region in small units.

D3-S2: The methods section of a research paper

Answer key: Identifying missing information

The below excerpt is an edited version of a part of the methods section of a published paper. Try to identify the places that have missing, vague or incomplete information in this excerpt. Your job is not to provide the information of course – it’s just to look for gaps or ambiguity.

Excerpt of the actual methods section

Paper: Improving the Design of a Conservation Reserve for a Critically Endangered Species, PLOS ONE, 25 January, 2017 dx.doi.org/10.1371/journal.pone.0169629

Our study region was the Central Highlands of Victoria, located north east of the city of Melbourne in the Australian state of Victoria (37°14' S 144°59' E, 38° 5' S 146°27' E). It includes the Central Highlands Regional Forest Agreement (RFA) area, which is approximately 1,100,000 hectares. It comprises 35% state forest, 16% formal reserves, 4% other public land with the remainder private land. Various kinds of forest covers approximately 64% of the total area of the RFA region, including much of mainland Australia’s Mountain Ash forest. These forests provide habitat for a number of threatened and endemic species, but have also been a major source of pulpwood and sawlogs for various industries since the 1930s.

Wildfire is the main form of natural disturbance in forests across this area. The impacts of fire are variable, ranging from complete stand replacement after severe fires, to instances where the previous stand survives into the new stand. Extensive salvage logging following the 1939, 1983 and the 2009 fires resulted in sizable areas of even-aged stands.

The existing reserve network in the Central Highlands RFA was established over several decades, beginning in 1928. The current Leadbeater’s Possum Reserve (30,500 ha) was established in 2008, consists of both National Park and State Forest, and is dispersed across the region in small units ranging from 12 ha to 3353 ha.

D3-S3: The introduction section of a research paper

Make as many sets of cards as there are groups.

Information on importance of topic	Highlights of relevant previous research
Identification of unanswered question(s)	Approach you used to seek the answer(s)

D3-S3: Introduction section of a published paper

Article: Pettis JS, Lichtenberg EM, Andree M, Stitzinger J, Rose R, et al. (2013) Crop Pollination Exposes Honey Bees to Pesticides Which Alters Their Susceptibility to the Gut Pathogen Nosema ceranae. PLOS ONE 8(7): e70182. doi.org/10.1371/journal.pone.0070182

Introduction section of this article

Honey bees, Apis mellifera, are one of the most important pollinators of agricultural crops [1]. Recent declines in honey bee populations in many North American and European countries [2]–[4] and increasing cultivation of crops that require insects for pollination [5] raise concerns about pollinator shortages [5], [6]. Habitat destruction, pesticide use, pathogens and climate change are thought to have contributed to these losses [2], [7], [8]. Recent research suggests that honey bee diets, parasites, diseases and pesticides interact to have stronger negative effects on managed honey bee colonies [9], [10]. Nutritional limitation [11], [12] and exposure to sub-lethal doses of pesticides [13]–[16], in particular, may alter susceptibility to or severity of diverse bee parasites and pathogens.

Recent research is uncovering diverse sub-lethal effects of pesticides on bees. Insecticides and fungicides can alter insect and spider enzyme activity, development, oviposition behavior, offspring sex ratios, mobility, navigation and orientation, feeding behavior, learning and immune function [9], [13], [14], [16]–[22]. Reduced immune functioning is of particular interest because of recent disease-related declines of bees including honey bees [3], [23]. Pesticide and toxin exposure increases susceptibility to and mortality from diseases including the gut parasite Nosema spp. [14], [15]. These increases may be linked to insecticide-induced alterations to immune system pathways, which have been found for several insects, including honey bees [22], [24]–[26].

Surveys of colony food reserves and building materials (i.e. wax) have found high levels and diversity of chemicals in managed colonies [18], [27], [28]. These mixtures have strong potential to affect individual and colony immune functioning. However, almost all research to-date on pesticides' effects on pathogen susceptibility fed a single chemical to test bees [16]. Because pesticides may have interactive effects on non-target organisms (e.g. [29]), it is crucial to determine how real world combinations and loads of pesticides affect bee health.

One pathogen of major concern to beekeepers is Nosema spp. The endoparasitic fungal infections of N. apis and N. ceranae adversely affect honey bee colony health, and can result in complete colony collapse [30]. Infection with Nosema in the autumn leads to poor overwintering and performance the following spring [31], and queens can be superseded soon after becoming infected with Nosema [32]. We chose Nosema as a model pathogen because earlier work [13], [14] had demonstrated an interaction with pesticide exposure.

This study addresses two important questions. 1) What types of pesticides might bees be exposed to in major crops? While multiple studies have characterized the pesticide profile of various materials inside a honey bee nest [27], [28], few have looked at the pollen being brought back to the nest. 2) How do field-relevant pesticides blends affect bees' susceptibility to infection by the Nosema parasite?

D4-S1: Figures and tables

To be printed and put up on the wall.

THE STUDY LOCATIONS, TOTAL NUMBER OF COLONIES, TOTAL SPECIES AND GENERIC RICHNESS, TOTAL NUMBER OF SITES SURVEYED, TRANSECTS PER SITE AND TOTAL NUMBER OF PAIRED TRANSECTS PER LOCATION

Location	Number of colonies	Species richness	Generic richness	Number of sites	Number of transects per site	Total number of paired transects
Kosrae	10884	154	49	22	3	66
Majuro Atoll	9125	135	44	14	6 at 12 sites plus 3 at 1 site and 4 at 1site	79
Ashmore and Cartier Reefs	9397	191	51	8	6	48

doi:10.1371/journal.pone.0083965.t001

PEAK ASSIGNMENT FOR IMQC SPECTRUM OF INTACT MUSCLE TISSUE FROM ATLANTIC SALMON

Peak No.	Compound	Proton (s)	Chemical Shift (ppm)
1	All f.a. except n-3 f.a.	$-CH_3$	0.92
2	Unassigned	$-CH_3$	1.20
3	All f.a. except 20:5 and 22:6	$-(CH_2)_n-$	1.37
4	Unsaturated f.a.	$-C\underline{\mathbf{H}}_2-CH=CH$	2.02
5	All f.a. except 22:6	$-CH_2-COOR$	2.32
6	Polyunsaturated f.a.	$=CH-C\underline{\mathbf{H}}_2-CH=$	2.70
7	Anserine	$-CH_2$	2.90
8	Creatine	$-N-CH_3$	3.05
9	Choline/Anserine	$-N-(CH_3)_3/-CH_2$	3.20～3.30
10	Anserine	$-N-CH_3$	3.75
11	Creatine	$-CH_2$	3.90
12	Lactate	-CH	4.16
13	Histidine	-CH	7.23
14	Histidine	-CH	8.56

Chemical shifts are referenced to the water signal (4.80 ppm), f.a. = fatty acids
doi:10.1371/journal.pone.0086422.t001

SUMMARY STATISTICS FOR GENDER, AGE, AND THE FIVE FACTOR MODEL OF PERSONALITY

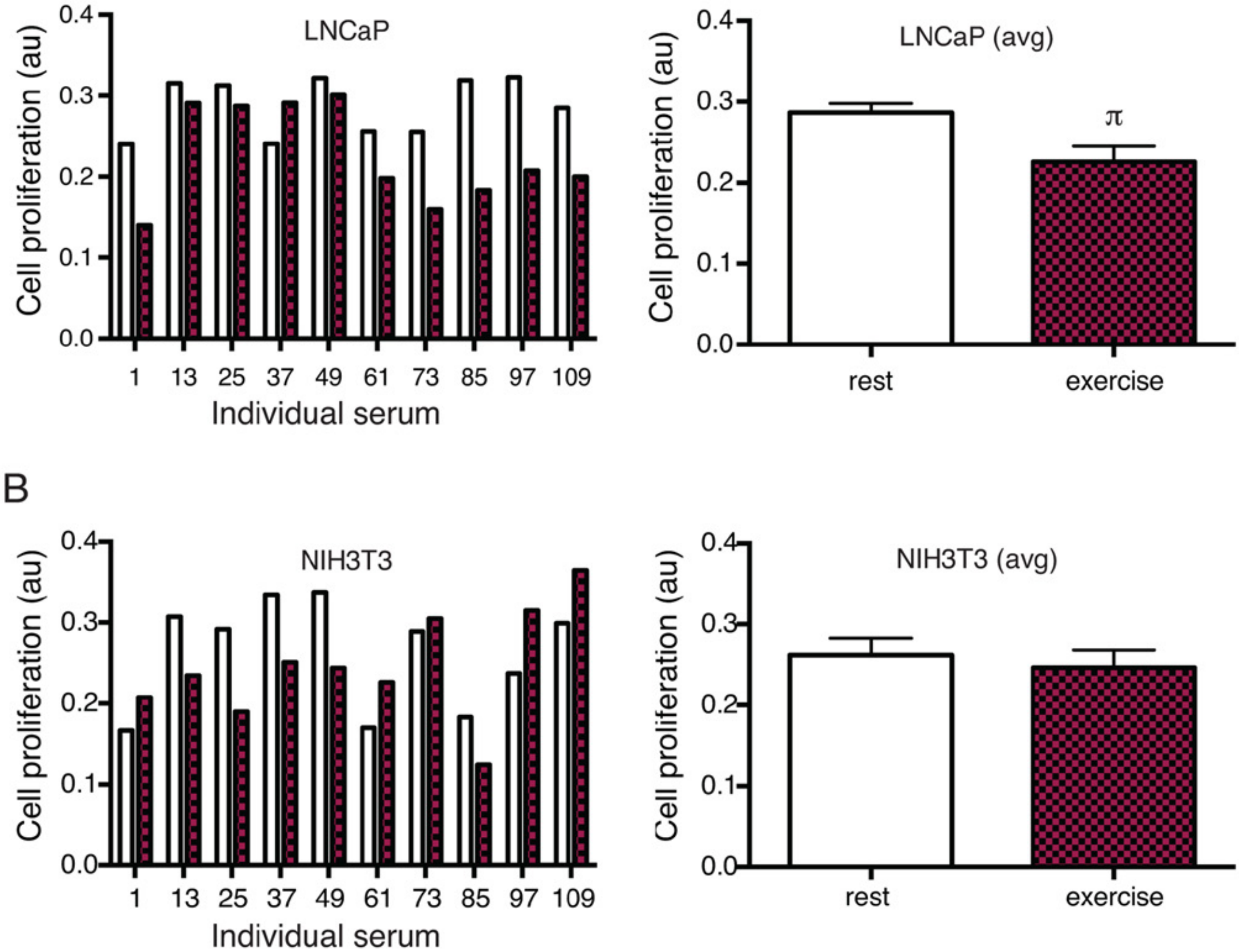
	N	*mean*	*standard deviation*	*skewness*
Gender	74859	0.62	0.49	−0.50
Age	74859	23.43	8.96	1.77
Extraversion	72709	−0.07	1.01	−0.34
Agreeableness	72772	0.03	1.00	−0.40
Conscientiousness	72781	−0.04	1.01	−0.09
Neuroticism	71968	0.14	1.04	−0.21
Openness	72809	0.12	0.97	−0.48

These represent the seven dependent variables studied in this work. Gender ranged from 0 (male) to 1 (female). Age ranged from 13 to 65. Personality questionnaires produce values along a standardized continuum.
doi:10.1371/journal.pone.0073791.t001

Article Source: Personality, Gender, and Age in the Language of Social Media: The Open-Vocabulary Approach. Schwartz HA, Eichstaedt JC, Kern ML, Dziurzynski L, Ramones SM, et al. (2013) Personality, Gender, and Age in the Language of Social Media: The Open-Vocabulary Approach. PLoS ONE 8(9): e73791. doi:10.1371/journal.pone.0073791. Licensed under CC-BY.

GROWTH OF PROSTATE CANCER CELLS IS REDUCED WHEN EXPOSED TO EXERCISE SERUM FROM 9 OUT OF 10 INDIVIDUALS

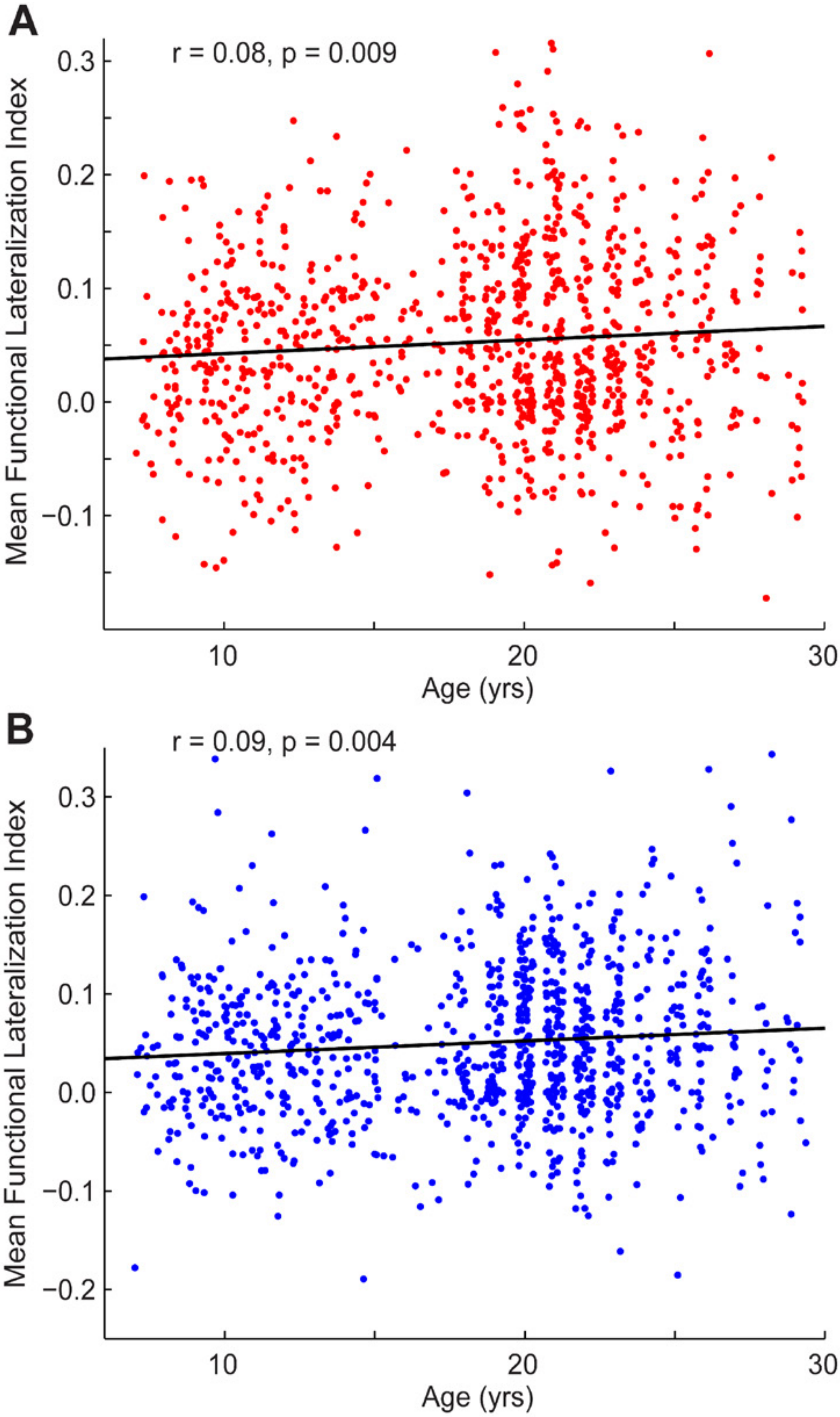
A) Effect on LNCaP cells incubated for 48 hours with resting (rest) and exercise serum (exercise) from 10 individuals separately. B) Effect of the 10 individual serums on NIH3T3 cells. Data show all individuals separately (left panel) and as mean ± SEM. au (arbitrary units). π denotes a significant ($p \leq 0.05$) difference between incubation with rest and exercise serum.



Article Source: Effect of Acute Exercise on Prostate Cancer Cell Growth Rundqvist H, Augsten M, Strömberg A, Rullman E, Mijwel S, et al. (2013) Effect of Acute Exercise on Prostate Cancer Cell Growth. PLoS ONE 8(7): e67579. doi:10.1371/journal.pone.0067579.

CHANGE IN MEAN FUNCTIONAL LATERALIZATION WITH AGE

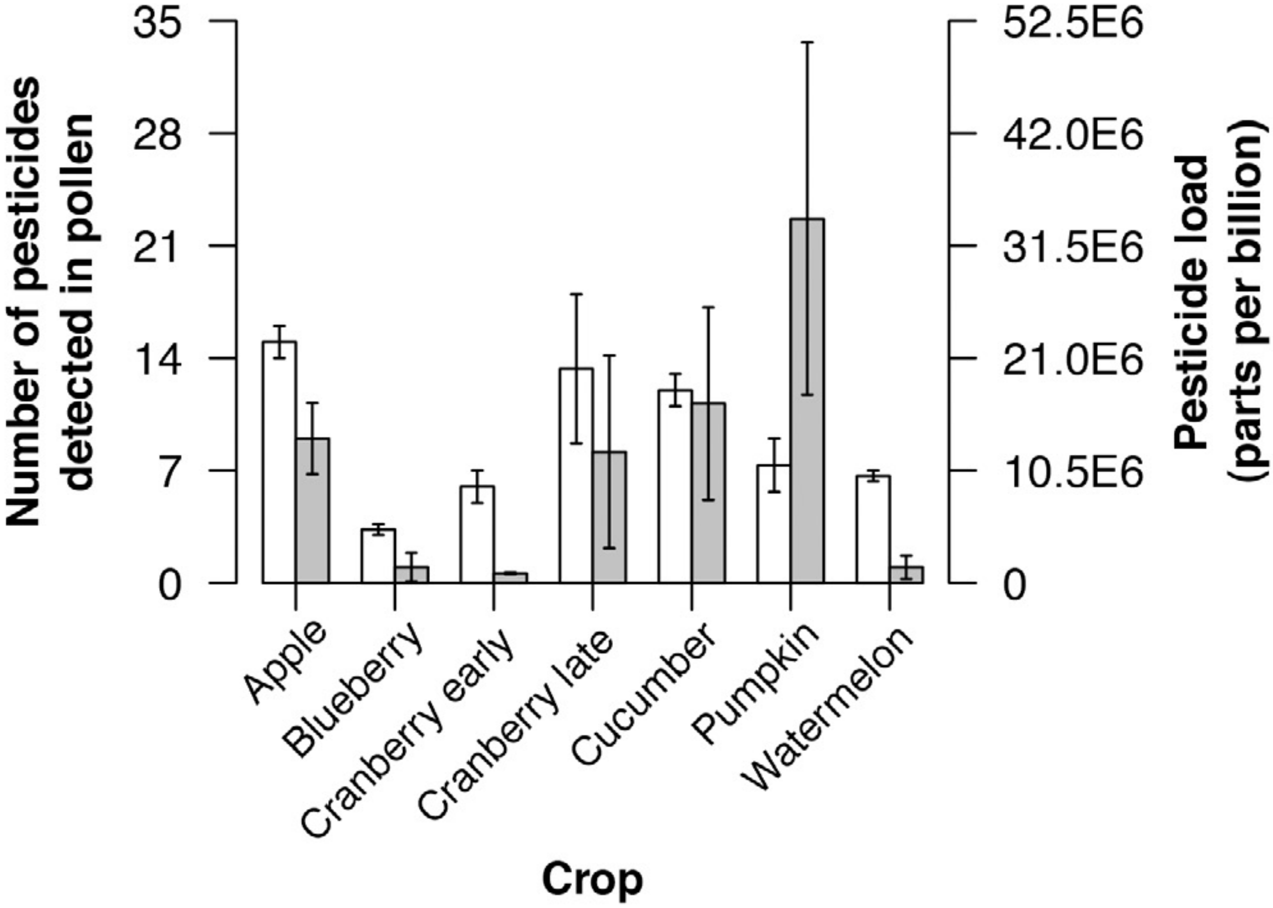
Mean functional lateralization index for all connections between left (A) and right (B) hubs, respectively, is shown for each subject, plotted against subject age. Pearson correlation coefficients and p-values are shown above both plots.



Article Source: An Evaluation of the Left-Brain vs. Right-Brain Hypothesis with Resting State Functional Connectivity Magnetic Resonance Imaging. Nielsen JA, Zielinski BA, Ferguson MA, Lainhart JE, Anderson JS (2013) An Evaluation of the Left-Brain vs. Right-Brain Hypothesis with Resting State Functional Connectivity Magnetic Resonance Imaging. PLoS ONE 8(8): e71275. doi:10.1371/journal.pone.0071275. Licensed under CC-BY.

PESTICIDE DIVERSITY FOUND IN POLLEN SAMPLES, BUT NOT PESTICIDE LOAD, VARIED BY CROP

White bars show pesticide diversity, gray bars show pesticide load (mean ± se). Post-hoc testing found the following groups, where letters indicate statistically significant differences: apple a, b; blueberry c; cranberry_early d; cranberry_late b, d, e, f; cucumber e; pumpkin c, d, f; and watermelon d.



Article Source: Crop Pollination Exposes Honey Bees to Pesticides Which Alters Their Susceptibility to the Gut Pathogen Nosema ceranae. Pettis JS, Lichtenberg EM, Andree M, Stitzinger J, Rose R, et al. (2013) Crop Pollination Exposes Honey Bees to Pesticides Which Alters Their Susceptibility to the Gut Pathogen Nosema ceranae. PLoS ONE 8(7): e70182.

D4-S2: Developing a publication strategy