To whom it may concern,

I am writing to communicate significant concerns I have regarding an article recently published in the journal *Agronomy*, entitled "Further Disruption of the TAS3 Pathway via the Addition of the AGO7 Mutation to the DRB1, DRB2 or DRB4 Mutations Severely Impairs the Reproductive Competence of Arabidopsis thaliana".

While reviewing this article, I found that this paper includes significant sections of research that I completed during my PhD at the University of Newcastle. However, my research has not been cited or otherwise acknowledged in this article. I have attached a copy of the journal article and an excerpt from my thesis for comparison.

In the attached *Agronomy* journal article, the sections which represent my work are:

- Figure 1A, 1C, 1D
- Figure 2

The above results, published by the authors as their own work, correspond to the following pages of my thesis:

- Page 122 / Figure 4.1 – Rosette phenotype of drb and ago mutant lines **(Agronomy Figure 1A)**
- Page 124 / Figure 4.2 – Inflorescence stem phenotype of drb and ago single and double mutants **(Agronomy Figure 1D)**
- Page 132 / Figure 4.5 – Floral phenotype of drb and ago7 mutants **(Agronomy Figure 1C)**
- Page 127 / Figure 4.3 – Silique length in DRB and AGO7 plants **(Agronomy Figure 2 – raw data is exactly the same, figure has been remade)**
- Page 129 / Figure 4.4 – Seed number in DRB and AGO7 plants **(Agronomy Figure 2 – raw data is exactly the same, figure has been remade)**

Following this discovery, I reached out to the editors of *Agronomy* to determine the process for raising these concerns with the journal. A member of the *Agronomy* team forwarded my query to the co-authors for comment, to which Dr. Andrew Eamens replied.

I have attached a copy of Dr. Eamens's response, in which Dr. Eamens confirms that the photographs presented in Figure 1A, 1C, and 1D represent my research. However, Dr. Eamens asserts that Figure 2 was independently replicated by the co-authors and is not the same as the research published in my thesis.

Subsequently, the Editor-in-Chief of *Agronomy* (Peter Langridge of the University of Adelaide) recently contacted me regarding this dispute, saying:

> "I have now had an opportunity to look at the paper authored by Pegler et al. and also to follow the link you provided to your thesis. It does appear that the authors have used images and data from your thesis in their paper and, as you've noted, there is no acknowledgment of this." (*see attached email communication*)

Peter advised that I follow up with the University to raise my concerns. Below I have provided background to this dispute, along with evidence to explain why I strongly dispute Dr. Eamens' claim to having independently replicated my thesis results in Figure 2. Rather, I assert that the authors of this paper have acted unethically by presenting my research works as their own, and have intentionally declined to acknowledge that I conducted this work.

CENTRAL CLAIM:

I completed a PhD at the University of Newcastle between 2014 and 2017 under the supervision of Dr. Eamens. As part of my PhD research, I created a novel plant line (*drb2ago7*) by cross-breeding two single mutant plants (*drb2* and *ago7*). To highlight the differences between this new plant line and similar plants, I conducted a phenotypic analysis to compare the rosette leaves, floral architecture, silique (seed pod) length, and seed number.

Following this phenotypic analysis, I then performed a series of molecular/genetic analyses to determine the underlying cause of this phenotype. I submitted my thesis in September 2016, and the final version of my thesis was published to the University's NOVA repository in February 2017.

In the *Agronomy* paper published in October 2019, the co-authors of this publication have used phenotypic results published in my thesis (*Agronomy* Figure 1 and Figure 2), without attribution, to support their findings.

FIGURE 1A, 1C, 1D

- *Agronomy* Figure 1A, 1C, and 1D are photographs that I took myself during my PhD research, and were subsequently published in my thesis (refer to attached thesis excerpt). This work was completed solely by myself.
- In his email to the *Agronomy* journal on the 21st of November 2019, Dr. Eamens confirms that these photographs are my work:
    - "I can confirm that the images presented in Figures 1A, 1C and 1D were generated by Kate during her PhD tenure under my supervision at the University of Newcastle." (*see attached email communication*)
- As the creator of these photographs, it is my understanding that I retain moral rights to the photographs, and as such they should not have been published without permission and/or attribution.

FIGURE 2

- *Agronomy* Figure 2 is a compilation of two figures I produced for my thesis, in which I counted the length of siliques (seed pods) and the number of seeds per silique based on a series of photographs that I collected.
- In his email on the 21st of November 2019, Dr. Eamens claims that the results presented in Figure 2 are the result of an independent experiment carried out by the co-authors:
    - "these … Figures stem from experimentation conducted by the co-authors, and not by Kate." (*see attached email communication*)

- This statement causes the greatest concern for me. I strongly dispute the idea that the results in Figure 2 have been independently produced. As evidence, I have included an image comparing the data presented in *Agronomy* side-by-side with the research presented in my thesis (Appendix A). The data presented in Figure 2 clearly matches my results exactly, including outliers.
- If the co-authors had indeed grown new plants to reproduce this experiment, one would expect that biological variation, growth conditions, or sampling differences would cause variability in the data. It is astronomically unlikely that two people independently replicating this experiment would get the identical results.

Based on the above information, I believe this is strong evidence of research misconduct in which the co-authors have intentionally decided to reuse my work without attribution.

Furthermore, as the co-authors appear to have only used my phenotype research in the *Agronomy* paper, I am concerned that the co-authors may not have grown the plant lines for this research independently at all, and instead re-used materials from my PhD (RNA, cDNA) for the molecular work presented in this paper. The only novel phenotypic research that the authors have presented in *Agronomy* is Figure 1B, which I also have concerns with.

FIGURE 1B

- *Agronomy* Figure 1B has been included alongside the photographs that I took during my PhD research in Figure 1, however I did not complete this work.
- As the authors have not presented any evidence that they have independently grown these plant lines (and have instead chosen to re-use my research), I have a strong suspicion that the authors created Figure 1B by measuring the surface area of the rosette leaves in Figure 1A, and did not complete an independent experiment to generate this data.
- For example, Figure 1B was first submitted to the journal without error bars, which are used to denote variation between replicates, as described in the reviewer comments on the journal article. The authors state that they only added error bars after the initial submission:
    - "We have now added error bars to the phenotypic analysis detailed in Figure 1B." (*see Reviewer Comments on the Agronomy website)*
- The Materials and Methods section of the paper states that the data presented in Figure 1B was calculated from photographs of "4 biological replicates of 6 plants per replicate … of each plant line".
- If I am incorrect and the authors did indeed complete the research presented in Figure 1B, one would therefore expect the authors to be able to provide photographs and resulting leaf measurements for at least 192 plants (4 biological replicates x 6 plants per replicate x 8 plant lines), from which they would have calculated the surface area as described in the paper.
- If the authors do indeed possess these photographs of the plant lines used for Figure 1B, I would have assumed that they would use their own photographs of the rosette phenotype in Figure 1A rather than mine.

- I am including Figure 1B in this letter because, although I do not claim this work as my own, I have serious concerns that this work was not conducted as described in the paper. If the co-authors do indeed have sufficient photographic evidence (approximately 192 plants as described in the paper) to substantiate Figure 1B, then I am happy to be proven wrong regarding this section of the figure, however my concerns regarding Figure 1A, 1C, 1D and Figure 2 still stand.

FINAL NOTES

I would like to be very clear that my central concerns regarding research misconduct relate to Figure 1A, 1C, 1D and Figure 2 only, as they represent research that I conducted as a student of the University of Newcastle. However, as stated above, given that the authors have chosen to use my photographs and plant data in Figure 1 and Figure 2, I have separate concerns that the other figures (Figure 1B, Figure 3 – Figure 5) may have been created using raw materials that I produced during my thesis (RNA, cDNA), and that the plant lines described in this paper have not been independently grown by the authors.

Based on the information provided above, I allege that the co-authors of this paper have participated in research misconduct by intentionally reproducing my research works without attribution so as to claim this work as their own. I would appreciate if this matter could be investigated by the University, with the aim to resolve this dispute and determine if research misconduct has occurred.

REQUEST THAT ACTION BE TAKEN

Authorship and attribution sit at the heart of academic integrity and intellectual property law. I would like the named authors of the paper to be investigated under the University's Responsible Conduct of Research Policy and associated Research Breach Investigation procedures for potential violations of:

- section P4 (Fairness) under the Australian Code for the Responsible Conduct of Research;
- sections (11)a, c and g of the Responsible Conduct of Research Policy; and
- sections (12) and (13)b and c of the Responsible Conduct of Research Policy.

In the circumstances, I would hope at the very least that the paper is retracted, which is consistent with section (11) of the Research Publication Responsibility Guideline. I also hope the University takes suitable actions to censure the authors and discourage them and other academics from engaging in what I consider to be poor scientific research that has the potential to harm the University's research reputation.

Kind regards,

Kate Hutcheon.

APPENDIX A:

This image compares the data presented in my thesis (Hutcheon, 2017) to the research presented in the *Agronomy* paper (Pegler et. al, 2019). The data presented in the *Agronomy* paper clearly matches the results presented in my thesis exactly, including notable outliers.