

**THE UNIVERSITY TRIBUNAL
THE UNIVERSITY OF TORONTO**

IN THE MATTER of charges of academic dishonesty made on June 27, 2011

AND IN THE MATTER OF the University of Toronto *Code of Behaviour on Academic Matters, 1995,*

AND IN THE MATTER OF the *University of Toronto Act, 1971, S.O. 1971, c. 56 as amended S.O. 1978, c. 88*

B E T W E E N:

UNIVERSITY OF TORONTO (the "University")

- and -

M [REDACTED] K [REDACTED] (the "Student")

Hearing Date: November 23, 2011

Panel Members:

Ms. Roslyn M. Tsao, Barrister and Solicitor, Chair
Professor Annette Sanger, Faculty of Music, Faculty Panel Member
Ms. Amy Gullage, Student Panel Member

Appearances:

Mr. Robert Centa, Assistant Discipline Counsel for University, Paliare Roland Barristers
Dr. Michael Ratcliffe, Faculty of Medicine, Department of Immunology
Dr. James Carlyle, Faculty of Medicine, Department of Immunology
Mr. M [REDACTED] K [REDACTED], the Student

In Attendance:

Ms. Jane Alderdice, Director of Quality Assessment and Governance, School of Graduate Studies
Professor Berry Smith, Dean's Designate, Vice-Dean of Graduate Studies
Mr. Christopher Lang, Director, Appeals, Discipline and Faculty Grievances

Reasons for Decision
Delivered by Ms. Roslyn M. Tsao

1. The Trial division of the Tribunal heard this matter on November 23, 2011. The Student was charged on June 27, 2011 of the following:
 - (a) In or about Fall and Winter 2011, the Student knowingly submitted academic work containing a purported statement of fact which had been concocted, contrary to section B.I.1(f) of the Code;
 - (b) In the alternative, in or about Fall 2010 and Winter 2011, the Student knowingly engaged in a form of cheating, academic dishonesty or misconduct, fraud or misrepresentation in order to obtain academic credit or other academic advantage of any kind, which violated section B.I.3(b) of the Code.

Decision of the Tribunal

2. The University bears the onus of proving the elements of the offence, namely, submission of concocted statements of fact or material, based "on clear and convincing evidence" (Code: s. C.II.(a) 9.).
3. Section B.I. of the Code requires the University to prove that student "knowingly" committed the offence, with the term "knowingly" deemed to include situations where the student "ought reasonably to have known" that the offence was committed.
4. The Student's defence to the allegations is essentially that he was guilty of "sloppiness" and inattention but not of knowingly committing the offence and/or that the material submitted was never going to be counted toward his academic work or used for further publication. The Student also raised the defence of "double jeopardy" which is discussed below.
5. The preponderance of evidence, including the Student's own testimony, convinces us that the Student knowingly submitted the concocted material and if we are wrong on this, we find that the Student ought reasonably to have known that he was submitting concocted material.

Summary of Evidence

6. Witnesses were excluded during the hearing.
7. The Student was, at the material time, a Ph.D. student in the Department of Immunology. Dr. Carlyle testified that he met the Student in 2008 and discussed the Student's project with him. In the following Spring, 2009, the Student approached Dr. Carlyle as he wanted to leave his current lab (Laboratory Medicine & Pathobiology) and supervisor, Dr. Li Zhang, (also of the University of Toronto) and was looking for suggestions for a new supervisor.
8. Dr. Carlyle proposed himself as a supervisor and the Student agreed to work with him. However, Dr. Carlyle was with the Department of Immunology which required the Student to transfer departments. The Student formally transferred departments in September, 2009, bringing his research project from Dr. Zhang's lab to Dr. Carlyle's.
9. The Student acknowledges that during his time in Dr. Carlyle's lab, he attended lab meetings and made one presentation (October 2009) to faculty and students ("student seminar" format), one presentation (November 2009) to his Supervisory Committee Meeting and one presentation (January, 2011) to the lab. The Student used Powerpoint slide presentations on each occasion.
10. Dr. Carlyle testified that in the Spring of 2010, he started to have concerns about the Student's work. In particular, Dr. Carlyle cited:
 - (a) Inconsistencies during presentations,
 - (b) Some "flip-flopping" by Student,
 - (c) Mis-labelling issues; and
 - (d) Duplication of images.
11. Dr. Carlyle tried to assist the Student to "troubleshoot" and as he did so, he noted that experiments were not working from the data. Dr. Carlyle found further issues such as mis-labelling of vectors, scale issues of vectors and wrong identification. Dr. Carlyle

stated that he stopped troubleshooting because his concerns about the validity of the Student's results had increased to a significant level by October, 2010.

12. Dr. Carlyle testified that the Student was undecided about whether he wanted to stay in the lab or leave, changing his mind three (3) times before December, 2010. Dr. Carlyle recalls that the Student was going to withdraw before the Christmas holidays but in the New Year, the Student indicated that he wanted to stay.
13. Dr. Carlyle requested and received electronic copies of three (3) Powerpoint slide presentations from the Student.
14. In January, 2011, after the lab presentation, Dr. Carlyle approached Dr. Ratcliffe, the senior chair at Sunnybrook Research Institute, seeking his review of the Student's three (3) Powerpoint slide presentations. The electronic copies of the presentations were provided to Dr. Ratcliffe to review.
15. Dr. Ratcliffe carefully examined the images and graphs as presented in the Powerpoint presentations and came to the conclusion that several slides contained concocted images and data. In particular, Dr. Ratcliffe directed the Panel to seven (7) slides in the three (3) presentations which formed Exhibit 7. This subset of slides will be referred to as the "Problem Slides".
16. Dr. Ratcliffe has demonstrated to the Panel in a clear and convincing manner that the Problem Slides contained concocted material:
 - (a) Problem Slide 1:

the dot arrays in purportedly different experiments were identical (Dr. Ratcliffe acknowledged that these errors are less serious and could have been a mistake). The Student could not provide the data for the results and provided no lab notes as there should have been in standard practice to Dr. Ratcliffe at the time of investigation.

- (b) Problem Slide 2:
images that were of purportedly different mice were identical to other images and were **shown with different exposures**;
- (c) Problem Slide 3:
a number of images for purportedly different groups of mice with different treatments and at different points in time of the experiment were identical and again shown with different exposures; there was also very deliberate manipulation of the images evident when the panels of the slide were "ungrouped" in the soft version which pointed away from simple carelessness or sloppy cutting/pasting;
- (d) Problem Slides 4 and 5:
should have been different as they purportedly showed 2 different proteins but were the identical image (the same defect on plate was evident on both images). Dr. Ratcliffe acknowledged that this could have occurred by mistake;
- (e) Problem Slides 6 and 7:
identical images were used for 2 purportedly different dates of the experiment. The date stamp identifiers from the 8 images are the same for both Slides 6 and 7. However, **the scale that was used was different in each slide which made the colour appearance of the images different.**¹
17. Dr. Ratcliffe testified that the Student ought to have had a complete set of lab notes with respect to the experiment depicted in the Problem Slides, in particular slides 6 and 7, was very complicated.
18. The Student did not provide lab notes or the raw data to support the Problem Slides when requested by Drs. Ratcliffe and Carlyle. Dr. Ratcliffe met with the Student on January

¹ In attempting to recreate the experiment with the Student, Drs. Ratcliffe and Carlyle confirmed with a time line with Student of the experiment based on the images provided. This experiment would have required specialized operator/imaging (FACS sorting) which most likely would have been at the Sunnybrook Facility. However, based on the purported timeline, the FACS sorting would have had to have occurred over the Christmas holidays when the facility was closed. When confronted with this, the Student then indicated that he used the facility at MARS. Dr. Ratcliffe confirmed with the MARS facility that the FACS sorting for this experiment was not performed there either.

24th and 26th, 2011. The January 26th date was made to accommodate the Student's request to meet at Sunnybrook where his notes were kept. There were also 2 more meetings in April, 2011 with Dr. Ratcliffe, Professor Berry Smith and the Student to discuss the academic misconduct allegations.

19. After these meetings, there had been nothing provided by the Student vis-à-vis notes, data, explanation which satisfied Dr. Ratcliffe or Dr. Carlyle that there had been no academic offence committed.
20. On cross-examination, Dr. Ratcliffe and Dr. Carlyle both agreed that there had been discussion about the use of the Student's prior research results from Dr. Zhang's lab. Both also stated that it was conveyed to the Student that his previous research results could be used toward his Ph.D. work with Dr. Carlyle if they could be reproduced in his lab. The Student's position was that he was told that his previous work could not be used toward his current Ph.D work with Dr. Carlyle and, therefore, all were aware that it was not really being considered. The Panel finds the Student's version of these discussions implausible.
21. The Student also identified and introduced a Canadian Institute of Health Research (CIHR) Grant Proposal dated September 15, 2009 from Dr. Carlyle which acknowledged and referenced the Student's earlier data and Problem Slides from his work at Dr. Zhang's lab. The Student appeared to be taking the position that Dr. Carlyle could not take issue with the Student's earlier research results and Problem Slides since he included them in this grant proposal. Firstly, by September, 2009, the Student had only just transferred to Dr. Carlyle's lab and Dr. Carlyle could not have been aware of the problems with the Problem Slides. Secondly, the mere reference in the Grant Proposal to the Student's earlier work was not somehow an endorsement as to the integrity of such earlier work or the Problem Slides. The Student was questioned later by the Panel regarding his involvement in this proposal grant (discussed below).
22. The Student testified and was the only defence witness.

23. The Student provided the Panel with various documents which were separated by Tabs A-I (Exhibit 8).
24. The Student referred to Dr. Carlyle's letter of April 19, 2010 to CIHR seeking reinstatement of the Student's candidacy for the Vanier Canada Graduate Scholarship (which had been withdrawn due to administrative error). The letter is, indeed, a glowing review of the Student by Dr. Carlyle. Unfortunately, Dr. Carlyle appears to no longer hold such an opinion.
25. The Student briefly described that he is a practising physician in America and that though he left the University of Toronto a long time ago, he has returned to defend himself.
26. Interestingly, the Student, himself, provided copies of letters of June 26, 2009 of Dr. Richard Hegele, the Chair at the time of the Laboratory Medicine & Pathobiology which was the Student's lab at the time under Dr. Zhang. These 2 letters (the "Hegele Letters") related to an incident wherein the journal *Immunity* had expressed concern about data fabrication or falsification in the Student's submitted manuscript about his research with Dr. Zhang. The experiments and data in the manuscript constituted the same research that the Student carried over to Dr. Carlyle's lab. The Hegele Letters were copied to the Student. Though the Hegele letters exonerate Professor Li and the Student from data fabrication or falsification, Dr. Hegele cautions:

"...b) More attention needs to be paid to manuscript preparation, especially the authors' understanding of the relationship between original data and figure content. In addition, careful proofreading is required to ensure there are no errors that could be interpreted by the reviewer or reader as data duplication, near-duplication or other irregularities.

c) Some of the data submitted in the manuscript were generated by a single successful experiment that followed a number of earlier failed experiments. Diligence must be paid to the reproducibility and robustness of data to ensure they truly support the interpretations and conclusions stated in the manuscript.

d) It was clear [the Student] was the only person who understood the underlying experimental basis of the data in its entirety reported in the Immunity manuscript. There needs to be more redundancy in terms of who knows and

understands the data, as this will promote accountability among the authors and prevent vulnerability of the project.² ..."

27. Although the Student introduced the Hegele Letters in his own defence, we find them to have had the opposite effect in that they clearly show that the Student had notice of the concerns about the Problem Slides prior to his submission anew of identical or similar material to Dr. Carlyle's lab. This was an important consideration to the Panel in determining this matter.
28. The Student addressed each of the Problem Slides to provide his explanation and defence (in the following order):

Problem Slide #	Student's Exhibit/Explanation
2	<p>Exhibit 8-C - The Student provided purported source images with date stamps for the experiment and indicated that he should have used a different image in one of the panels. He provided the purported source image for a panel but acknowledged that the exposure used in the slide may have been changed.</p> <p>The Student's point: that he had source images for the experiments depicted in Problem Slide 2 but had cut and pasted the wrong image into one panel and changed the exposure for another panel.</p> <p>The Student could not explain why the source images had 5 mice per image as opposed to the only 3 mice in the slides.</p>
1	<p>Exhibit 8-D - For the eight (8) dot graphs which are on the Problem Slide, there were two sets of duplicates. The Student provided purported source dot graphs to show that he had source data but had "dragged and dropped" in error because the raw data looked "very similar". The Panel notes that Dr. Ratcliffe</p>

² Ironically, the Student read this caution as being congratulatory of him rather than critical.

	<p>testified that the Student did not provide any source data or lab notes when the issue was originally discussed and investigated.</p>
4/5	<p>Exhibit 8-G – The Student provided purported source gels and indicated that the duplication in the Problem Slide was a "simple copy and paste" error. However, the label on the source slide which was supposedly duplicated in error did not even correspond to either label in the 2 Problem Slides. In short, the Student could not provide the Panel with any cogent or apparent explanation as to how the "copy and paste" error occurred in any rational sense. The Panel was very concerned about how lackadaisical the Student was about the fact that there were differing labels between the 2 Problem Slides and the purported source slide and that there was, therefore, no way to know which label accurately described the slide presented.</p>
6/7	<p>Exhibit 8-H – The Student acknowledged that the Problem Slides were the same though presented for 2 different days (Day 12 and Day 15). The Student could not provide Day 15 source images. Furthermore, the date stamps on the images did not support the experiment "Day" as set out on the purported source data. For example, where the Student provided images which were purportedly taken on Day 6, the purported Day 12 images for that experiment had date stamps that were not even 6 days after the Day 6 date stamps. When confronted with this discrepancy, the Student suddenly explained that there was a whole set of other mice being used with a different start date whose images might explain this discrepancy. The Panel finds this evidence to be fabricated given that there is no mention whatsoever of other mice in the experiment and the images clearly lead one to believe that there were only 4 original mice,</p>

	2 of which died over time.
3	<p>Exhibit 8-F – The Student provided a number of separate images taken at different experiment "Days" (which were date labelled by imaging machine). During cross-examination, the Student did not deny Dr. Ratcliffe's conclusions about duplicated images being used on the Problem Slide to represent different "Days" (with different exposures) nor his conclusions about cutting and pasting that was performed in particular panels (ie., in a panel showing an image of 4 mice, there were 2 groups of 2 mice pasted together or one group of 3 mice pasted with 1 mouse). The Student explained that when he imaged the mice, he would not necessarily separate the mice into their experimental/control groups and image the group together given that the mice were mixed up in one cage but identifiable by ear-tags.</p> <p>Although the Student may be of the view that he had source images for the Problem Slide, the fact is that multiple images were cut and paste or duplicated (with different exposures) to give the impression that there was a complete set of data for the controlled experiment. The purported source images provided do not assist that Panel at all to determine whether there was ever any complete set of data for the controlled experiment as presented in Problem Slide 3.</p>

29. The Student also attempted to claim that the results of his experiments were "negative" (ie., that the process being tested did not show positive effects on the mice). The Student took pains to state that the mice at the end of the experimental process had not been "cleared" of the disease and that, therefore, this was a negative result. The Student discounted that his presentations, in particular Problem Slide 3, strongly suggested that his experimental treatment resulted in a 65+ day lifespan for the mice versus only a 13

day lifespan for the control group. The Student was also asked to direct the Panel to anything in the 3 presentations at issue that cautioned that his research had "negative" results. He could not.

30. The Panel wanted to review the CIHR Grant Proposal of Dr. Carlyle with the Student. The Student had already pointed out that the Problem Slides and results from his earlier research with Dr. Zhang were referenced in the Grant Proposal. When questioned, the Student at first confirmed that he, of course, had reviewed the proposal. Then, when asked whether anything in the Grant Proposal suggested that his results were "negative" as he now asserts, he acknowledged that there was nothing to that effect and then added that he did not write the proposal, Dr. Carlyle did. The Student further contradicted his earlier response by then saying that he had not reviewed the proposal.
31. During the cross-examination of the Student, the Student's LinkedIn profile (Exhibit 9) was put to the Student regarding material inaccuracies about his educational history and training in Toronto contained therein. The Student got upset, did not deny the inaccuracies and stated that he could "choose" to put in what he wanted and denied hiding anything.
32. The Student's email to Mr. Centa of September 3, 2011 (Exhibit 10) regarding the hearing date was also put to the Student as it, without a doubt to the Panel, contained statements designed to mislead Mr. Centa about his ability to attend the hearing. The Student acknowledged that the email was sent from a server in Massachusetts even though the content of the email gives the impression that he was sending it from Afghanistan where he states he was living. When confronted with the origin of the email server, the Student claimed that he sent the email to his wife who was in Massachusetts to send to Mr. Centa. Apart from the fact that there would be no reason to "relay" the email through his wife, the content of the email represents that he lives in Afghanistan with his Wife³. When challenged that his email is very clear about his wife being with him in

³ Excerpt from email from the Student to Mr. Centa:

"...Currently we live in Afghanistan. Since June of this year we have no access to U of T e-mail or mail or anything. We lost a child in Canada ad (sic) my wife health deterred (sic) significantly

Afghanistan, the Student claimed that the "we" in the email referred to himself and his 2 children and not his wife. Based on the plain reading of the email, the Panel finds the Student's email and explanation at hearing to be misleading and untrue. The Student was noticeably agitated during this area of questioning.

Reasons for Decision

33. The University's position was that the Student deliberately concocted and presented the Problem Slides and alternatively, knew or ought reasonably to have known that the Problem Slides contained concocted misrepresentations. It was submitted that the effort required to create Problem Slide 3, in particular, demonstrated deliberateness.
34. The Student's position was that he may have been "sloppy" but he knew that the material would never be published because the research was "negative" at the end of the day.

Credibility of Student

35. The Panel was particularly concerned about the Student's ever-shifting explanations when pressed on inconsistencies in his evidence. For example, when it was pointed out that labelling on his explanatory evidence did not even seem to support his position (ie., date stamps did not conform with his stated date of experiment), the Student recalibrated the range of his explanations from his labelling being "wrong" (human error) to there being a whole other set of subject mice which had not been referred to at any time prior.
36. One of the Student's pillars of his defence was that he did not "concoct" the underlying results/experiment of the Problem Slides and he attempted to provide the earlier lab data results and images to demonstrate this. Unfortunately, this material only provided evidence of the source of the Student's "cut and pasted" material but did not satisfactorily explain how the material misrepresentation of the experiment's results could be due merely to "sloppiness" and inattention.

This political case against me, affect my life and life of my family. We left Canada for good.

Currently, my wife is under treatment, she is fetal (sic) state of her life. We cannot come to Canada at all from Afghanistan..."

37. As mentioned, the Student's other pillar of his defence was that the presentations of the Problem Slides showed that his experiment had a "negative" or unsuccessful result and, as such, was not going to be useful, published research. In essence, the Student's position at the hearing was that he was not using the Problem Slides to make the results of his research appear positive or successful in nature. The Panel find that this ex-post rationalization to be without any credible foundation.
38. Even without an understanding of the scientific underpinnings of the Student's research, we can, as a Panel, find that Problem Slide 3 was absolutely presented to demonstrate positive research findings in his experimental group. In contrast to the control group of mice on the slide who all died by Day 13, the experimental group were still alive after Day 65. It strains credulity to believe that the intention of the Student in presenting this slide would be that the experimental group, as compared to the control group, fared poorly or negatively or even neutrally in comparison. In addition, even the title of the Slide employed a comparative term of "ameliorate" in describing the "disease outcome of the recipient".
39. After considering the evidence as a whole and given our conclusions about the Student's credibility, the Panel finds that the Student knowingly submitted the concocted Problem Slides.
40. We note that the Student was also indignant that this hearing was about the same material that the Hegele Letters had addressed (and, in his view, exonerated him). The Student pleaded a "double jeopardy" defence. The Problem Slides that were submitted to Professor Carlyle, etc in the 3 presentations anew were based on the same/similar data which was the subject matter of the Hegele Letters. The academic dishonesty rules are not somehow relaxed if one re-submits offending material even if the material was the subject of an investigation in the past. The fact that the Student was already warned by the Hegele Letters about his research supports a finding that the Student ought reasonably to have known that the offence was committed based on the extended definition of "knowingly" in the Code.

Penalty

41. The Panel will receive submissions regarding Penalty in writing. The University will provide its submissions to the Student/Tribunal within 30 days of this Decision; the Student will have 30 days to provide his reply submissions to the University/Tribunal.

Dated at Toronto, this 14th day of December, 2011.

A handwritten signature in blue ink, appearing to read 'R. Tsao', is written over a horizontal line. The signature is fluid and cursive.

ROSLYN M. TSAO
Co-Chair