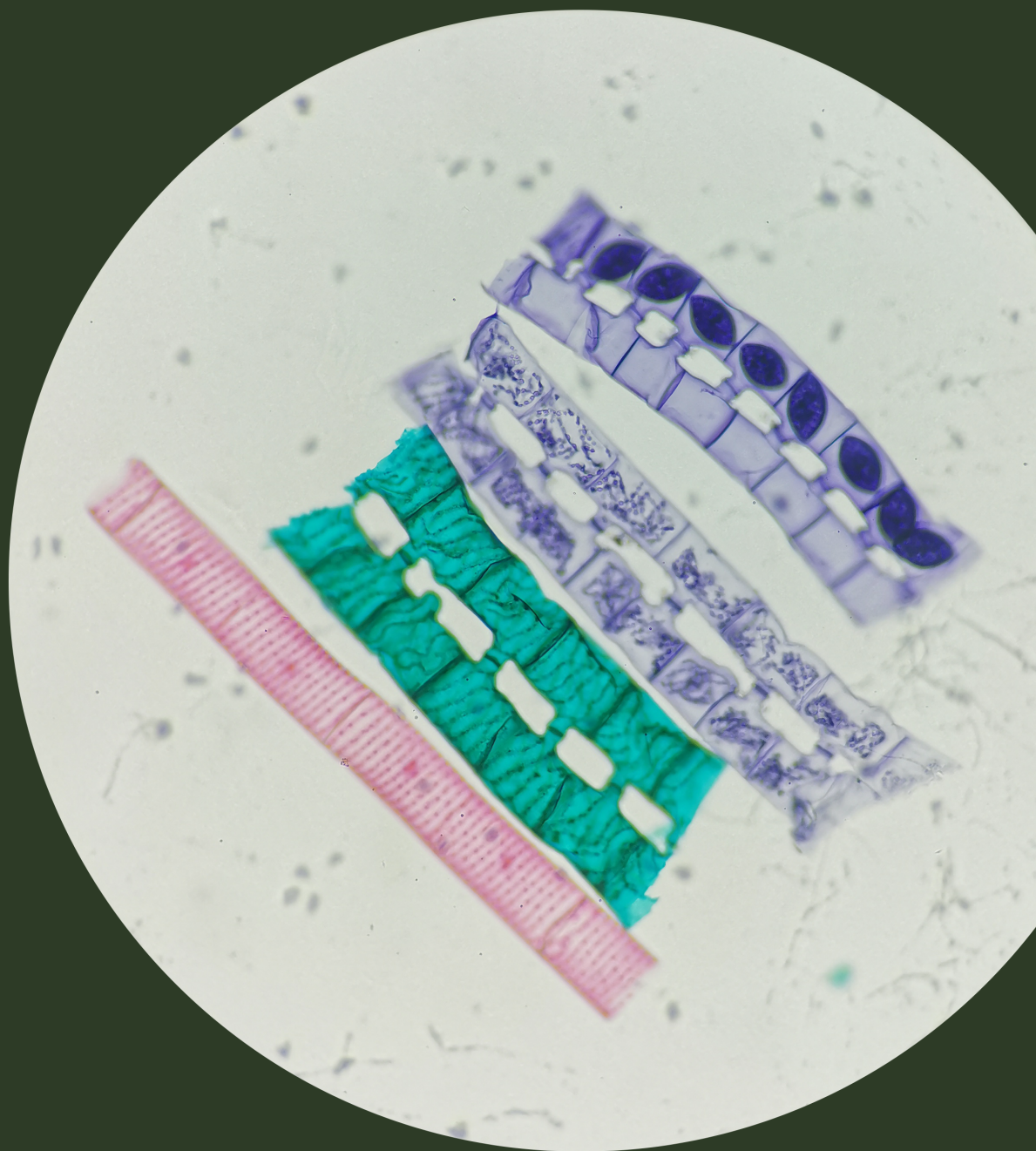


爱浙人



THE NEW ENLIGHTENMENT

VOL3
2019-2020



爱
书
人

张明华书

好久不见。

和往年一样，新一期《爱浙人》又在秋天和大家见面了。但又和往年不一样，从上一个秋天到现在，变化甚多。ZJE 送别了第一届毕业生的离开和又迎接一批新面貌的出现。全球方面更有打得大家措手不及的新冠肺炎疫情爆发。

基于此间种种，爱浙人有所思，又有所悟，撰写征集大量优质文章。在团队的精心设计下，我们将其分为如下九个板块。

“行远自迩”这一板块记录了同学们对集体活动和学院生活的个人感想，这一刊里我们“新”“老”结合——请新生来谈谈自己的就读体验的同时，也邀请到了三位优秀毕业生来和我们谈谈他们的思念。

“行知录”，包含了同学们对自发组织并参与活动的所思所感，譬如具有学院特色的 Academy Family 和年年传承的景东社会实践项目。

而在“社彩纷呈”中，我们收录了同学们志愿组建了红十字社团。

“时事浅议”里，爱浙人们大胆讨论并深入思考了当下时事，例如香港“占中”事件。

“百廿沧桑”是我个人非常喜欢的一个部分，它追溯两校历史，带你逐个认识意想不到的校友，并发掘他们发掘过去的趣事儿。

Journal Club 和 BMI 的海报日则作为我们这一期“砥志研思”的主要内容，希望可以带新生们提前了解未来充满挑战性的学习生活。

在这一期“共话一席”中，我们有幸请到 Dr. Joanne Murray 和 Prof. Xin Chen，和他们聊了聊他们的科研之路。

“爱浙人看疫情”可以说是《爱浙人》的“疫情特辑”，学院上下一起畅谈了对新冠的理解和对疫情走势的判断。

最后的 Q&A 中，同学们问了许多有趣的问题，也请千万不要错过哦~

不平凡的 2020 行至大半，《爱浙人》第三刊终于姗姗来迟。它像是浓厚乌云的裂隙中刺破苍穹的一束暖阳，也像是柳暗花明之后转角乍泄的锦绣春光。翻开它罢，轻触重温我们一起走过的点点滴滴，领略传承 zjers 专属的精神和风采！

欧阳轩

“
从浙人看疫情”
主编寄语

Long time no see.

As in previous years, the new issue of The New Enlightenment is back this fall. But unlike previous years, a lot has changed since last autumn. On the global front, there is a pandemic of coronavirus, and locally, there is the departure of the first graduates and the emergence of a new batch of faces in our campus.

Based on this, The New Enlightenment has contemplated current issues and has written a large number of qualified articles. With careful consideration, we have categorized it into the following nine sections.

The section of "Sense and Sensibility" records the personal feelings of students about the collective activities and campus life, and we combine the "new" and "old" in this magazine, while inviting new students to talk about their experiences at the College, we also invited three outstanding graduates to talk to us about their thoughts. The "Knowing and Doing" section contains the students' thoughts and feelings about the activities they organized and participated in, such as the Academy Family and the Jingdong Social Practice Project, which has been passed down in the past few years. In the "ZJE Daily" section, we have included the Red Cross Clubs that students volunteered to form. In the "Meditation and Reflection" section, The New Enlightenment discussed and thought deeply about current affairs, such as the "Occupy" incident in Hong Kong. The "Transitions of ZJU-UoE" section is my personal favorite. It traces the history of the two universities, takes you to meet the unexpected alumni one by one, and discover their interesting stories in the past. The Journal Club and BMI's poster day are the main focuses of this issue, giving new students a preview of the challenging academic life ahead. In this issue, we had the honor to invite Dr. Joanne Murray and Prof. Xin Chen for a chat with them about their research journey. "The New Enlightenment View on the Epidemic" can be said to be the "Epidemic Special" of The New Enlightenment, in which the whole school talked about their understanding of coronavirus and their judgment on the trend of the epidemic. In the final Q&A, students asked many interesting questions, and please don't miss it.

The third issue of The New Enlightenment has finally arrived halfway through this extraordinary year 2020. It is like a beam of warm sunshine piercing the sky through the cracks of thick dark clouds, or like a glorious spring light leaking out from the corner after the willow has turned bright. Open it, touch and relive the dribs and drabs of our journey together and appreciate the exclusive spirit and elegance of ZJEers!

Editor-in-Chief



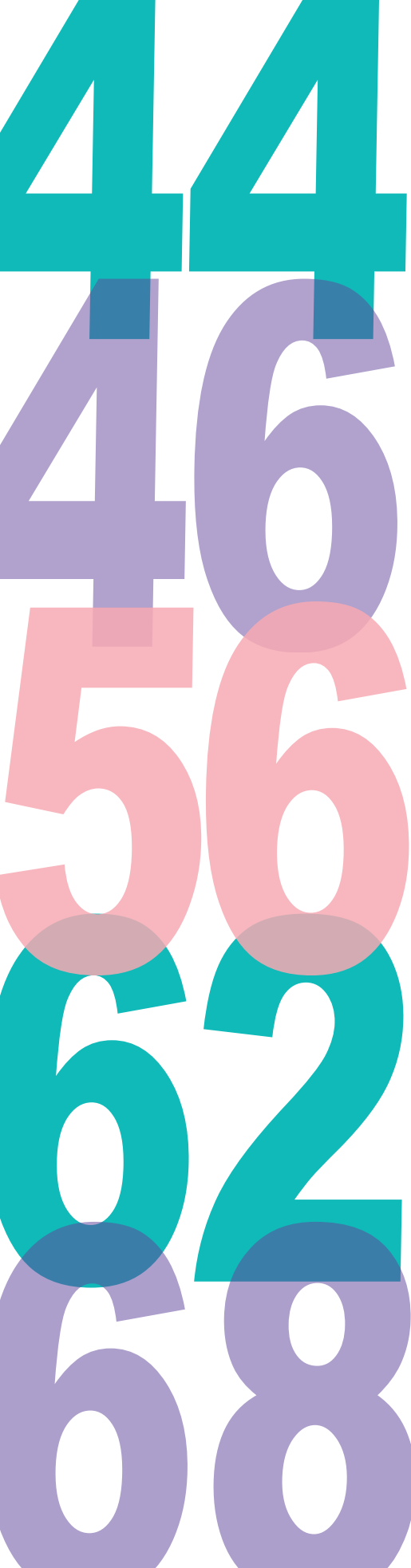
← 主编寄语
From Editor-in-Chief

← 行远自迩 Sense and Sensibility
致 ZJE 的一封信 A Love Letter for ZJE
毕业生采访 Graduates Interview
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← 行知录 Knowing and Doing
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← 社彩纷呈 ZJE Daily
Love Is Boundless: Experience In the Red Cross

← 时事浅议 Meditation and Reflection
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The Conjecture of Human Future by the Dilemma of Science and Ethics
抽身洪流，觅渡何处——浅谈学生在香港地区的行为抉择 A Brief Discussion on Students' Behavioral Choices in Hong Kong



百廿沧桑 Transitions of ZJU-UoE

名侦探福尔摩斯是校友?
Sherlock Holmes Is an Alumnus?



砥志研思 Academic Digestion

Journal Club: Epothilone D Improves Microtubule Density, Axonal Integrity, and Cognition in a Transgenic Mouse Model of Tauopathy

海报日: BMI 的学术盛宴
The Poster Day



共话一席 Free Talk

Dr. Joanne Murray 专访 Exclusive Interview with Dr. Murray

Professor Xin Chen 专访 Exclusive Interview with Prof. Chen



爱浙人看疫情

"the only thing we have to fear is fear itself"?

2019-nCoV 的诊断、治疗的现状和未来
The Status Quo and Future Prospects of 2019-nCoV

疫情预测 Pandemic Prediction



Questions & Answers

Q & A

《爱浙人》快问快答
Quick Round

SENSE AND SENSIBILITY

SENSE AND SENSIBILITY

01



行遠自迩

DEAR ZJE

致ZJE的 一封信

©倪城玥

亲爱的 ZJE 小姐：

展信佳！

夜深人静，图书馆的门关了，操场上的灯熄了，自习室的灯却还亮着，陪我熬到现在，你该是困了吧。我便说些在心里焐了好一阵子恐怕都烫手的话，防止你这个小迷糊打盹时着凉。



可生活没有如果，也不需要如果。
就像是就算时而
被海宁的大风吹得东倒西歪，
却还是爱这里的碧空飞霞和星云映月，
连雨丝都细密的让人只觉温柔。

第一次认识你是在那场名为“高校招生”的相亲活动上，我可真是头一回见那么大的阵仗，线上线下，人潮汹涌，每个人眼里都怀着热切的渴望，手握着自己的筹码，向着心仪的对象倾诉自己的一腔仰慕之情，又有多么想把自己的未来交付到其手上与其共度。我早早订好了相亲对象，知道自己是十拿九稳，倒也没什么紧张的情绪，甚至在思考该如何应对北方冬季的雾霾。

世事终是难料，茫茫人海中，我竟瞥见了你，只是看一眼，就再移不开眼了。你的年轻，你的活力，你的小脑袋里那些创新的想法令我心动。然而我也很犹豫，你还不够成熟，对英语水平的要求也很高，我很难预料我们的结合会是怎样的结果。一边是安稳，是可以预见的未来；一边是挑战，是许多未知的难关。可挑战也意味着机遇，意味着跳出舒适圈找寻自己更多的可能性。怀着紧张的心情，最终一笔一划地在第一位写下了你的名字。

熬过了暑假，转了两趟火车，拎着大包小包，我终于见到了日思夜想的你。

生在南方的你温婉细腻，给我准备的住处无比贴心，大到可以轰趴的公共区，满足各种需要的健身房，一应俱全的设施让人产生了满满归属感。你虽身材娇小，但中英混血让你并没有在气势上逊色，反而平添了一丝异域风情，哪怕是我这种直男拍照手法，随手抓拍，素颜上镜，你都是朋友圈里让人艳羡的存在。

和你在一起的这一百零五天，我对你的了解越来越多。你总是想让我变得更好，你想让我适应崭新的模式，组织了破冰活动、高桌晚宴、一场又一场的讲座；你想让我变得更加自信和包容，安排了一节节积极讨论的 tutorial、一次次精心准备的 presentation；你想提高我的合作能力，丰富我的生活，赐予我一些爆肝做推文写策划的夜晚和与之相应的多姿多彩的社团活动。也不是没有想要放弃的时候，基础不够扎实的我面对全英文授课，面对比我优秀的同学们，面对平凡的分数的，曾想过如果没有选择你会是如何一副模样。

可生活没有如果，也不需要如果。就像是就算时而被海宁的大风吹得东倒西歪，却还是爱这里的碧空飞霞和星云映月，连雨丝都细密的让人只觉温柔。你也是如此，尽管 lecture 上总有听不懂的时候，tutorial 可能插不上话，presentation 可能会出现失误，但这也只是自我完善自我进步道路上的小插曲，一点一滴日积月累慢慢进步，总会变得更好，总会成为一个合格的 ZJEer。只甜不苦的生活终会让人觉得腻，而你因为偶尔的苦涩，反而甜得刚好。

倪某不才，听闻小姐治学有方，承蒙小姐不弃，往后四年，愿闻其详。

倪城玥

二零一九年十一月三十日

期望与计划

——许你前程，锦绣光明

◎梁秋实 郑璐文



蔡泽荣学长： 积极拓展自己的世界

Q 如果满分十分，那么你对于自己的大学生生活会打几分呢？

我会给自己打6分。扣分原因主要有两个：第一是觉得自己大二大三时学习上课并不是很用心，因此GPA并不太如我意；第二是大学四年的日常生活中，除了偶尔的运动外其余时间基本都宅在宿舍里，与别的同学相比，户外活动相对较少。

但在过去四年里，我在国外玩得开心。假期出国交流的那些实验室时光不仅带给了我丰富的实践经验和学术知识，还让我有幸认识了新的朋友，并与一些大牛进行了交流。在周末，我有时候还会和实验室的研究生与博士生一起“go hiking”，在锻炼身体的同时也充实了自己的课余时间。那六分基本上打在这方面吧。

Q 毕业之际，你的未来规划主要参考了哪些方面的建议？

因为我不太确定是否要读博士，因此我曾经咨询过紫金港生物专业已经毕业了的学长学姐。目前的打算是先去瑞士读两年硕士，在硕士期间再决定自己是否要读博。此外，瑞士实验室的老板转化成果做得非常好，已经开有几

家公司，所以如果不读博士的话，也可能会去生物公司工作。

Q 作为第一届毕业生，在离校之际最想说的一句话是什么？

“不要给自己留下后悔的机会。”

这句话既是送给以后会面临诸多选择的自己，也送给学弟学妹。希望大家不要后悔过去自己做出的选择，也不要未来回头再望时为现阶段的自己后悔。

Q 说罢短期规划，那么学长觉得自己十年后会去哪里？变成一个怎样的人？

十年后的我有四个可能：第一是还实验室做博士后，也就是走科研道路；第二个可能是去做 consulting；第三是去有关生物领域的公司工作；而第四个可能则是和老板合作，开一家属于自己的公司。

王铭璐学姐： 热爱合作，积极反思

Q 学姐会给自己的大学生生活打几分呢？

我选择给自己打8分，扣分原因主要是感觉自己给内心施加了太多不必要的压力。

我早在高中时期就明确了将来做科研的目标，并且规划好了未来会读博，因此在本该夯实基础的本科阶段，我其实花费了过多的精力在担忧未来上。对科学本身考虑得少，而对自己未来考虑得多导致我并没有充分汲取来自知识本身的、纯净的快乐。这也是我大学四年中比较遗憾的点。

Q 能否用一两个关键词概括一下自己的学习以及生活？

对于学习方面，我想最重要的就是合作与反思。和他人沟通时多元思维的碰撞，与别人交流时获得知识的快乐与充实感，不通过合作是很难体验到的；同时定期的反思与总结，能为以后自己的发展积蓄经验，提醒自己规避以前犯下的失误。

Q 大学四年里有特别喜欢的老师吗？身边有没有自己比较敬佩的同学？ta 又有哪些值得学习的地方？

关于老师，我觉得所有老师都很好，尤其是爱丁堡的老师，他们都对学生很负责，并且重视学生的课程体验，对于我们反馈的问题都会非常认真的对待。我还要特别感谢我的AA: Melanie。她给我的基本印象一直都是情商高，人缘好。对于我提出的问题都会很认真地回复很长一段话，且思维逻辑清晰。不论在生活上还是学习上，Melanie 都给予了我莫大的帮助。

另外还有我实验室的PI 陈伟老师，他的思维非常 creative 并且甘于深入探究冷门课题，是在我心目中真正热爱科学的人。我印象最深的是凌晨三点钟看到陈教授走进实验室和研究生激烈地讨论实验问题，这些都给了我极大的震撼和激励，是我学习的榜样。

我身边的同学们都很优秀，几乎每个人身上都有值得学习的地方。让我觉得印象最深的就是成绩好的几位同学都很乐于分享自己的学习心得并且耐心地给其他同学解答问题，同时整个班的同学都很重视合作，因此学习氛围特别好。

Q 毕业之际，能否给学弟学妹们提供一些建议？

那就是在做未来规划的时候，可以多方面地采纳建议。除了向学长学姐咨询之外，还可以去问问外国的导师。毕竟东西方世界观和价

值观都有所不同，汲取多元化的思想或许能助力自己做出最合适的选择。

颜伊阳学长：
身处优秀平台，不要错过身机会

Q 过去四年里，学长有没有比较后悔的事？

于我而言，可能就是我在学生工作的过程中错失了許多宝贵的机会。我在大二时尝试了很多学生工作，也收获了比较丰富的工作经验。但是如今回头再看，却仍觉得当时的自己只是单纯地应付工作，因此与许多工作平台给予的机遇擦肩而过。

另外就是在大学四年里有些课我并不是听得很认真，因为当时觉得有更重要的事情要做。但是如今回过头来看，那些所谓“重要的事”也就不过如此，然而老师的课程却再也不能再来一遍了。

Q 面对未来，学长的人生规划参考了哪些方面的建议？自己有为为此做出了哪些努力？

建议主要来自爱丁堡大学方面开设的职业生涯规划指导课程，比如大三、大四的IBMS3、IBMS4 中，有几节课会请到已经毕业的学长学姐来分享一些自己的经验。此外，欧阳宏伟院长以及其他老师也会给出相应的建议。

至于自己的努力，应该就是在大三时参加过紫金港的一些项目，找到了一些生物医学领域的前辈，并通过帮他们做工作，与他们交流的方式来更深入的了解自己的专业，确定自己未来的方向。

Q 能否给即将毕业的自己两句寄语？

希望未来的自己可以成为一个擅长独立思考，有科研能力及科研水平的人。并且希望自己在面对社会之后仍能保持少年心态，积极并乐观地笑对生活。

Q 有什么想对学弟学妹们说的话吗？

希望学弟学妹们能利用好自己目前的学生工作，抓住身旁一切可能的机会。在学习与工作中，不要单纯一味接受来自上级的要求与命令，而是可以适当地融入自己的想法，增加自我能动性。



少年一场， 总要看看太阳

◎ 仇星入

在动笔前也有过纠结，毕竟想说的话有点多，不知说什么才好。最终“少年”这个词牢牢占据了 my 脑海，毕竟我真的，太喜欢这个词了。每次看到这个词，总会感到那飞扬与蓬勃的生命力，像是一个张扬自信的笑容，无需遮掩，无需自卑，自是天赐。让我也不得不上上了年纪一样感叹：“年轻真好啊。”

是啊，年轻真好。我们的肩上还未曾有来自家庭社会的压力；我们的笑容还是真诚而明媚的，不曾沾染世俗的无奈；我们的眼眸还是清澈闪耀的，看得见知识的光芒，看不到阴暗的角落。我们拥有着世界上最宝贵的财富：健康、亲人、友情、知识与理想。我们生活在人类历史上最和平时代中最有朝气的国家，我们生逢其时，我们将有幸参与和见证这个星球上有史以来最风云激荡的时代。我们是少年，我

们的面前，是 ZJE，更是山河壮阔，星河璀璨。

我承认，同样作为少年人，我却是一个俗人。我的心胸并不远阔，我的能力也不够强大。有时只要一篇作业就可以让我心烦意乱，有时候犯懒不想学习，有时候一点委屈就让我想放弃班团的工作。但是就是像我这样的人，和朋友谈起理想时也会热泪盈眶；在听到林俊德院士的事迹时也会热血难凉；在擦干眼泪后也会继续尽心尽力负责我的工作，因为我知道，我是少年，我享受着天赐的幸福，我同样肩负着世人的未来。如此一想，便又觉重拾力量，一往无前。

看到这里也许你会想，少年人多了去了，哪里轮到我来操心国家人民的未来。可是，不是每个少年人都像我们一样，出生在稳定的家庭，享受着国际化的教育，探索着科学与知识。



他们很可能过早担负起了家庭的重担，为了生存不辞辛劳；他们很可能放弃了对知识的探求，在物欲横流中迷失了自我；他们也很可能在逐渐成为“精致的利己主义者”，对他人社会冷眼观之。如此看来，光荣艰巨的使命，就这么自然而然又理所应当地交到了我们这些少年的手中。

但是不必紧张，肩负使命并不意味着我们要做一个殉道者，为了他人牺牲自己的幸福。我们说到底，只是少年人罢了，我们涉世未深，过度的热血和激情很可能冲昏头脑，一腔好意最后可能得不到好的回报。我们要做的，最基本的是照顾好自己，这是一切的前提。但作为刚刚步入大学校园的我们，可能还不适应学习节奏，常常熬夜。可能还不能摆脱对父母的依赖，自己不能打理好自己的生活。但是这都不

是问题，毕竟我们是少年人，还有大把的时间去学习、去经历、去改变。

“你来人间一趟，你要看看太阳”。这是海子的诗中，我认为最惊艳的一句。我想，我们来这人间一次，也只能拥有一次青春，做一次少年，我们不仅要看看太阳，我们还要努力成为别人眼中的一轮太阳。

——那个少年，他不理会世人的不解和嘲讽，战胜了心里的恐惧和畏怯，去挑战波涛汹涌的大海，只为找寻心中的太阳。

——后来呢？

——我不知道后来他是否见到了太阳。但我知道，他成为了很多人心中的太阳。



橄榄山上

◎ 汪嘉川

入学三个多月了，好像没有什么实感。说起过往十八年的纷繁，也并未残留多少感觉后象，以后无非也是这样度此暂生的。这种断想实在会招致攻讦：你难道就是凭这样一副昏散的模样考进浙大的吗？

莱布尼茨有前定调和之说，即一切邂逅注定发生；但这类前缘是无从认知的。何况半年前，我尚且不知离家三十分钟车程的潮乡，竟然建有一个下属浙大的校区。自在的缘起都无迹可寻，遑论自为的起源。谈及冥契，只能说我可以预知未来四年的气候吧。

八月中旬，我初到国际校区时，也确实没有多大的惶惑，在这段时间里，仍旧是自顾自融入了这个校区。ZJE 的学习生活，如在北欧度假，行人寥寥，湖沼寂寂，有科学，也有一点艺术的。景致倒纯粹东方相：临书院院门的

香樟树，自根部裂为三束，现代雕塑；雨后垂瓣的玉簪花，绿茵周身；东侧土坡上连绵的山麦冬，还有丛中的冻雀；捡起一支树枝，充作魔杖，晃悠悠行至水泽；暮色沧波起，石缝里生长着陀螺紫菀；河边是月见草了，也有将其称作待霄花的……我毕竟在同一纬度同一高程的地界生活了十八年；只要归纳演绎出万象背后的 logos，则世间百态真的都早已前定调和了。

气候，以及气氛，尽是我所熟稔的了。然而我尚有一事，虽说也是长久习惯了的，但这里不得不提。那是怎样的隔阂感，也是前定调和的，归于一个总念，时时萦心，避无可避。

我曾属文科生，对生化以及计算机的理解远逊于人；加之智能水平的缺憾，我与人的“学术”交流必然不平等。不过上述的隔阂，

只是我的浅见，读者朋友们还请姑妄听之。无独有偶，各位一定或多或少存有对某个对象的隔阂感，也许来自生性的敏感，也许出乎旧日的环境……交往的力不从心、格局的限制，甚至伴生了一种腻烦的情绪，一种对世界的倦怠。虽说亲近世界是信息交互和协同合作的必要手段，可谓不可或缺，但人性偏就存在这样的二律背反。帕斯卡说，人的一切痛苦来自无法独处闷室；但人的欢哀本不相通。王尔德借亨利勋爵之口说道，恐惧社会是道德的秘密。诚然，每个人之间都相去万里，那种名为隔阂的情感啊，氤氲中来，无时或释。

亚里士多德《政治学》中说，因高傲自满而鄙弃世俗的组合的人，他如果不是一只野兽，那就是一位神祇。而我们并非属于上智或下愚的范畴，势必寻找那个“精神上的势均力敌”。可这种际遇也是很难求得的，尼采和勃兰兑斯隔了大半个欧陆的重峦呢。

康德《判断力批判》中有一个类似广义“想象共同体”的概念，即经由对本相的思索，接近无玷的认识。形上的国度，不是崇山峻岭足以阻滞的。正在阅读这段文字的朋友，倘若你志于科研，请继续践行美的深密教吧，因为唯有那些成果，及成果的转化，才能使你夺取真正的生存尊严。而了解我们是如何诞生，如何运作，如何消亡，是足以抗拒那些浮佻庸肤的价值观的。看穿世界的矫饰，却摇首回绝世界的馈赠，世界才是你的。唯有形成了对宇宙的认识（当然包括生命），始可与言价值观，这是许多人文学家终生无可体悟的。

当然，ZJE 的同学在将来不一定会全部从事科研，有同学大可继承家业，有同学自嘲要

留级复读，有同学已经在密谋转法学了。正如加缪所说，不管做出怎样的选择，你最后都会适应它。可是做出这个选择是至关重要的。从这种观点出发，ZJE 的四年（或者说前两年），类似试错式的诊断，其意义在于做出那一个选择。

以上的感想，实在是说教得过分了。作为尾声，我想讲出自己做的一个梦，就以查拉图斯特拉传道时的声调：

国境之外有一大陆，大陆边缘有防波堤。立于堤上，可眺见一岛弧。海岸居民里有一童子，见一壮汉，奔跑于堤上，顷刻没入海雾。童子惊惧，询其外祖父：

“那个男人看不到海吗？”

外祖父答道：

“不，是他看不到山。”

海边总是有山的。大陆的中心一定会生长出高峰来。外祖父背着童子，四周空无一人，登山，越过雪线。

海在上涨，势必吞噬大陆。外祖父知道，大陆只能尝试长出山。两人背后的幕布是紫色的夜空，高处风割声冷，一切都降到冰点。

外祖父说着一个一个名字，和那些名字所说的话，希望童子有所反应。渐渐，外祖父的眼里倒映的星光消失了。

存在主义的宇宙啊。



蒲公英

◎徐清扬

随风而散。

风息寻迹。

落地生根。

眨眼间，转瞬过，离乡已数月之久。高考的余温早已散去，当年让我寝不能眠的庞然巨兽也似风一样离开得悄无声息。被迫地，然而同时也向往着离家的我似蒲公英一样，轻轻地被这阵风吹离了花序，来到这片土地——

浙江大学海宁国际校区。

初来乍到，即使脚踩着汉白砖，看着桥与波光粼粼的倒影，听着身后辽远缥缈的钟声。夕阳模糊着天际。我总觉得这一切显得不真实，仿佛还摇摇晃晃在风中，伞帽在左右倾倒地。沉重陌生的化学的公式缠绕在脖颈，无数英文单词痛击我的大

脑。夜深人静下，总一个念头似刺一样扎在我心——我是不是不适合来到这里。

可我的确爱这里。或者说，曾经。我在准备三一时的豪情壮语大部分也都发自内心。我说，我在开放日那天来到这里，便觉得它非常漂亮，它的育人理念是我向往的成长方向。难道初衷便能如此容易被打败？所以，我每每想起我曾经的向往，我曾经的选择，总觉得这些学习上的坎坷是必经之路。我高中三年能挺过，为什么无法打下这里的巨兽？

我的种皮试着去感受这片土地的温暖。公共区阿姨亲切的“早上好”；食堂经理



老是说着，“你们想吃什么我们都可以做”；学校还提供了AA,AF指路之灯。所以我在这里不是一个人独行。

真正扎根的那一刻，其实是因为找到了归属感与参与感。生活自然不止是学习，还有起居和交往。我的独立开拓到各个领域——“少年书一笺，万里共一梦”在构起我与山区小朋友的桥梁；图书馆勤工俭学，成为学助，为安静学习的同学们提供最高效的查阅文献的帮助；辩论赛上稚嫩却铿锵有力地总结陈词为团队提供助力……

我的根向下蔓延，我的芽向上顶起。

现在的我总是在想着，这个校区和我一样都很新。它，16年第一次招生，17年全面完工，校史还只能刻满半条桥。而我，刚过成人之礼。所以两者都在成长着。但我们的根在此，它的茁壮也就依靠着我和其他同侪。

是夜，图书馆十点十分的离馆提示声已经响起。我抬头望向穹顶上被黑色顶框规则

地割开的钟楼。它发着暖光。说着，今夜晚安，明早再会！

而我期待我开花结果，再度远航之日。





A SHORT STORY

短篇

©陈尔拓

在三个月前的一个午后,踩着阳光来到浙里,带着高考后的彷徨,和对未来的迷茫。

身处异地,满目陌生,形形色色的人,带来的却只是纷繁的影子,似乎只有记忆,才有色彩。

这似乎是每一个他乡的人的困扰,是每一个对外求学的人的孤独,更是惟有时光才能抹平的寂寞。因为距离的存在,所以任何的一切都仿若天涯,纵使咫尺之内,亦然如是。

但幸运的是,这三个月来,我认识了许多来自四年八方的同学,和许多来自异国的教授攀谈。记得第一次走进书院,走进单元时,来自室友热情的欢迎和笑颜;记得第一次当众英文演讲时,导师鼓励的眼神;也记得无数次在深沉的夜晚,面对繁杂的作业叹息时,那几声温暖的晚安。有时,和许多新交到的朋友聊天,与来自海外的同学交谈,我能认识到许多新的事物,了解到许许多多未曾听闻的轶事。我忽然发现我一直偏居一隅,只是希望了解到许多身边的小事;但是到了这里,我才发现了世界的精彩,才了解到更广阔的天地。

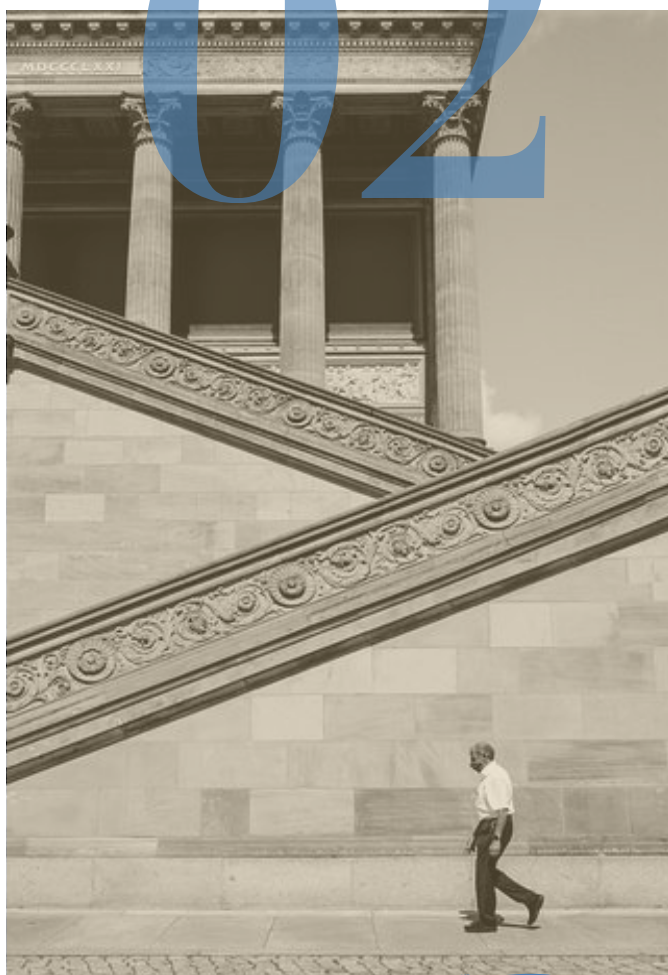
或许一个人的一生需要更宽广的视野,虽然这往往意味着远离家乡。但是这种视野带给了我心灵的碰撞,也正是一个人所要行进的远方。虽然独行,却不孤独,在浙里,我看到了许多相似的人,他们或许曾经迷茫,或许也有过徘徊,但在这样一个校区里,追逐着同样的远方。

我开始相信,浙里,正是我所期待的未来。

KNOWING AND DOING

KNOWING AND DOING

02



行知录

ZJE 学子 2019 年 寒假回访母校社会实践活动

爆竹除岁，冬风微寒，却阻挡不了浙江大学爱丁堡大学联合学院（下简称 ZJE）学子投身寒假社会实践活动的热情以及宣传学院风采的使命感。ZJE 本科招生进入关键的第四年阶段，学院育人理念中西结合，培养模式科学高效，但第一届本科生还未毕业，暂时没有强有力的宣传招牌，同时，学院招生计划进一步扩大，招生宣传工作责任重大，同学们抱着极大的热情和使命感，投入到宣传学院的活动中。

2019 年寒假，国际校区团委实践部的组织动员下，共有 17 支队伍立项返回高中母校进行社会实践活动，共计回访省内外中学 31 所，覆盖浙江、上海、广东、山东、福建等 ZJE 学院生源省份以及马来西亚等国际生来源国家地区。在本次活动中，ZJE 学子们回到高中母校，以宣讲、答疑等丰富多彩的形式向学弟学妹们

介绍了浙江大学国际校区及两个联合学院的相关情况与教学资源，发放了 ZJE 学院的宣传册，通过线上与线下相结合的方式与各个高中的学弟学妹进行互动，面对高中三个年级的同学同时展开宣讲介绍并提供相关咨询。在宣讲的过程中，同学们结合自身学习经验经历，向学弟学妹们展示自己在国际校区的学习与生活，作为国际校区的代言人，展现国际校区学子独有的风采。回访母校的各团队组建 20 余个微信和 QQ 群，在高中学弟学妹和家长中充分展示了浙大国际校区和 ZJE 的风采。

特别值得一提的是，今年各实践小分队得到了 ZJE 领导与教师的大力支持。国际校区副院长、ZJE 学院院长欧阳宏伟教授，ZJE 副院长鲁林荣教授，副院长陈晔老师等与同学一起走进各省市知名高中，举办以“念念不忘”为主题的生物医学科普及 ZJE 招生宣传“百场”专场宣讲，吸引了大批感兴趣家长和学生的参与，取得了良好的成果。ZJE 学院还提供了数

ZJE 那么好，
我想让你们知道
Back to High School

◎程宇琛



百本宣传册，供各小队回访时发放。同时，同学们还发放回收了校团委统一设计的问卷，以收集优秀高中生的信息并调查学校宣讲成效。

在寒假社会实践答辩中，同学们自信满满，纷纷展示出自己社会实践活动中独特出彩的部分。由 ZJE 同学作为队长带领的实践队在答辩中取得了出色的成绩，充分展现了 ZJE 学子对于学院的了解热爱以及较为突出的合作、组织和领导能力。18 级 BMI 的程宇琛同学带领的浙江大学国际校区赴浙江省杭州高级中学及山东省新泰一中“回访母校”社会实践团在答辩中更是获得了第一名的好成绩。

答辩结束后，陈晔副院长，黄晓涵老师和校团委吴行老师高度赞扬了同学们的寒假宣讲活动，并为大家提出了不少建设性建议。

18 级 BMS 的朱紫蓝同学带领的浙江大学国际校区赴浙江省萧山中学“展国际校区风采，引八方学子来浙”寒假社会实践团在答辩中取得了第三名的优异成绩。她谈起参加社会实践的初衷：“从萧山区拱秀路 538 号到海宁市海州东路 718 号，是近两个小时的车程，是母校校歌中的一句‘志切渡江’，也是录取通知书送达时全家的欢欣。正因为经历过从萧中到 ZJE 这条艰辛的路，我们才更希望竭尽全力，帮助学弟学妹们推开梦想的大学之门。”

2018 年，ZJE 首次在上海市进行招生，ZJE 在上海的知名度和声誉急需提升。18 级 BMI 的归逸凡同学带领的浙江大学国际校区赴上海市各大高中“回访母校”寒假社会实践团返回上海市各高中进行宣传，鲁林荣副院长随行宣讲，效果显著。归同学谈起这次实践经历：

“寒假回母校宣讲不仅让学弟学妹领略了‘魔法学院’浓厚的学术氛围和先进的教学理念，也加深了我对 ZJE 大家庭的认识。我为能将 ZJE 介绍给上海的青年才俊而感到自豪，也体会到爱浙学子所应有的视野和担当。”

本次活动，增进了高中学弟学妹们对国际校区和 ZJE 的了解，扩大了国际校区在家长们中的影响力，增强了同学们对 ZJE 的自豪感和归属感同时，提升了同学们的活动组织协调与沟通交往能力，学会了应对实践活动过程中的各类问题。

三年来，ZJE 始终在国际校区团委的领导下，围绕校区重点工作，结合学院特色，前往各个生源中学进行回访宣讲。一方面提升了国际校区和 ZJE 在高中同学中的知名度，另一方面，也让中学的老师和同学们们更为了解国际校区和 ZJE 学院的情况。国际校区 ZJE 学子薪火相承，通过年复一年的走访，将怀揣着对 ZJE 无限憧憬的种子洒向更广阔的天地！



INTERVIEW

WITH ZJE_{er} ZJE_{er} 采访

◎ 程宇琛 赵予晴

罗凯闻



2017 级生物医学专业学生，成绩优异，获得 2017-2018，2018-2019 学年国家奖学金。经两年校内研训，2019 年夏赴斯坦福研训，成果发表于《科学》杂志，名列第五作者（5/12）。热心答疑，主动帮扶后进，发挥带头作用。作为社长，将学生 Isomer 英语社打造成中外学生语言、文化沟通的桥梁。参与志愿者活动、暑校、暑期研学时，积极展现国际校区学生风采、对外介绍校区，获得各方赞许。曾任爱丁堡联合学院院刊《爱浙人》责任编辑，将其打造为反映学院学生风貌的“金名片”。身体素质良好，体测两度破百。

Q 学长可以简单分享一下自己进入大学两年多来，一路的成长故事吗？

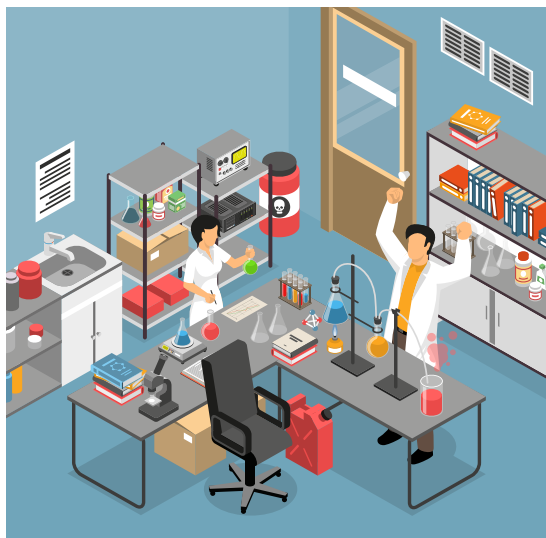
A 大学如愿以偿地进入自己执拗追求的生物医学这个专业，感觉离梦想又近了一步，因此也充满了动力。从高考后的那个暑假开始坚持背单词，罕有缺漏，终于为扎实的英语基础做出贡献。大一上的数学令人摸不着头脑，只好自己下功夫、查资料，终于也得了个满绩。至于 essay 一类，从零开始，学习如何畅游文献海洋、整合信息、形成观点、组织语言、批判性思考…不能不说经历了一番周折。Lab report 动辄上千字，但力气花下去，成效就出得来，颇令人欣慰。这些技能都是未来研究必需的，我也因此乐此不疲地投入着。尤其享受清冷的雨夜一盏孤灯看论文或是写数学 assignment 的感觉，因为知道自己在努力、努力有回报。也开始接触实验室，让自己克服初来乍到的畏手畏脚，逐渐熟悉自己未来的研究环境。

学业上表现还可以了，课外也算不错，只是常常虎头蛇尾。足球时常带给我快乐，也带给我伤病，因而大一下也就兴趣淡漠。社团一开始办的红红火火，语言之夜、讨论之夜、电影之夜、中秋文化分享、辩论赛……三个多月搞了二十几次活动。大一下课业压力一大，留学生兴趣同时减退，社团也就冷下来，只是偶尔聚一聚；社刊、公众号也陷入停顿。

在大一的十一假期成功做了饭，还请留学生一起吃，可惜之后再也没有这样的好兴致、这样的闲心情。没有时间是借口，最终还是来源于对 GPA 的执着，对自己学业达不到预期的恐惧。这似乎还是高中心理，按说大学生了、成年人了，该有更长远的目光，去积极参加各

种活动，丰富自己的社交圈子。可是一直没有停下来仔细思考、探讨过这个问题。

当时的状态仍然像高中，其实不知道是好是坏。欧阳老师说的“从容”心态，大概是要建立在对自己的实力有充分自信的基础上。回避班团职务，尝试将能量留给学习、社团，成效不错，回过头来却到底感觉少了点什么。其实反思以后，意识到沉静、专注的状态是我所丢失的，也是我经历高考“功利化”之后所缺乏的（没有大量地和人接触、交流，只是从功利的角度分析人的行为；就算做出利他的举动也会经历内心的挣扎，不再像小时候那样不计利害。总之是“为生计所困”，害怕若不为己，则被淘汰的奇怪心理）。从容到底是需要建立在内在的实力与自信上的吧。否则就急功近利、不择手段，沦落成自己不喜欢的模样。



Q 从紫金港的实验室到斯坦福，学长的实验室旅程令我们十分敬佩，可以分享下自己的两年多以来的实验室心得体会和成长蜕变吗？

课外寒暑假大多数的时间，得益于校方的资源，我们能够进入教授们的实验室，展开真刀实枪的科研训练。

最开始在鲁林荣老师实验室做实习，只是抱着对免疫学的兴趣去的。师兄不厌其烦地解释免疫学的基本概念与大背景，而我则在 PCR、Western blot、流式和组会之间辗转，深刻地体会到理论与实践的巨大差异。同时逐渐意识到，做实验有诸多技巧，需要及时总结；需要通过大量的文献阅读与积极交流来熟悉课题的背景；实验中细节为王，小错误就能导致结果全无；进展往往不如想象般顺利，有时甚至徘徊不前……这段并不算很长的科研经历，是我对科研生活的最初体验。

我的第一个独立课题，是研究 T 细胞受体复合物的结构。这是国际上数十年未解决的难题，有望借助近年来兴起的冷冻电镜进行研究，实现突破。第一次拥有独立课题、兴奋难当；又听说竞争激烈，需要抓紧时间，更是干劲十足，每天早上 7 点不到来到实验室，晚上 11 点后才回寝室。老师提出的方案富有挑战性：做好两手设计，每种设计多种准备。T 细胞受体复合物由多个亚单元组成，需要克隆不同的质粒，再行融合，等反复尝试、最终完成，已经克隆了 56 个质粒。

在这段宝贵的科研经历中，我从了解研究背景、实验设计、实际操作、分析数据，到参与组会、展示结果、文献分享，逐渐认识科研真颜、学会研究思路，更深刻的了解到生物研究是不能一蹴而就的，需要的是细心、耐心、决心。与此同时，我思考问题的方式更加成熟，提出的问题也更加有深度。

对高中政治课本里面关于量变与质变的论述，记忆犹新：抓住时机，促成飞跃。有梦想引领，课程奠基，研训培养，我的信心逐渐增长。有了这些积累，只等一个火花，便能有质的改变。

对未来科研工作有更深入的理解，同时为 PhD 申请做准备，我在积极地寻找暑研机会。最终的实现，却是偶然中的偶然。一次，斯坦福大学的亓磊（Stanley）老师受邀于紫金港校区做报告，并有午餐会，欢迎本科生参加。Stanley 的主要方向是 CRISPR dCas9，即借助酶切位点失活的 Cas9 蛋白进行对某些基因位点的特异性调控、成像。斯坦福自然是暑研的绝佳去处，抱着一点点希望，我参加了午餐会。

午餐会时，仗着课上阅读的一些 CRISPR 方面的文章，我问了一连串的问题。其间，和蔼的 Stanley 还指导同学们如何申请暑研。于是我顺水推舟地问：“如果我要来您这里暑研，您会接受吗？”出乎意料的，Stanley 答道：“发我一封邮件就行。”讲座后，我又提出了一系列问题，并对 Stanley 的研究方向表现出了浓厚的兴趣。于是我花了几天认真准备邮件，并给 Stanley 寄去——居然成功了！

有了这个难得的机会，2019 年的暑假自然无法懈怠。更幸运的是，Stanley 和师姐等人做了很久的课题，正处于论文提交后补实验的阶段。审稿人的意见非常棘手，但 Stanley 鼓励我们多管齐下，抓住痛点进行实验。

每天大约 13 个小时的实验、处理数据，辛苦并快乐着。先前积累的科研经历和素养，此时都派上了用场：规划实验要完整可行，做

实验要稳中求胜，分析数据要耐心仔细，有疑惑多交流，失败了及时调整心态……最终的成果是可喜的。实验室一位师姐评论：最终的文章，与初稿已经判若两文；一半的内容都不一样了。这里面，全程都有我的工作，部分数据还进入了文章。我也因此得以成为文章的第五作者。这篇发表在 Science 杂志上的文章，成为此次暑研留下的最好的纪念品。

两年一路走来，能清楚地感受到自己的成长。学校里讲座课、讨论课、实验操作课提供了坚实的知识基础、批判性思维能力和动手能

力；小论文撰写、建模、数据分析、文献分享等等丰富多彩的自主课题提高了我诸多的学术能力：文献检索、信息筛选能力，论文撰写、演讲展示能力……学校还鼓励我们利用暑假时间进行科研训练。经过一番真刀实枪的研究过程，我对生物医学研究有了更为深刻的认识：科研出成果需要运气与一定的才智，但决定性因素是热情、韧性、踏实与细心。找准方向，提出问题，细心规划，耐得住性子、坐得了冷板凳，时刻保持团队合作的意识与探索的热情，才有可能走到研究的彼岸。

Q 学长的微信头像是本人在户外划皮划艇？请问你很喜欢户外运动吗？户外运动对你日常生活（专业学习）的意义是什么呢？

A 头像是今年夏天抽空去普林斯顿的时候在校内划船。平时不怎么参加户外运动，大部分时间是散步/健身房。生物医学研究已经无数次证明运动（不管有氧还是举铁）都是与健康有关的。所以运动作为紧张学习中的调剂，不需要很多时间，还能释放压力，缓解疲倦感，个人极其推荐每天锻炼。

A 暑研的成果只是开始科学研究的一小步。我计划去美国读 PhD 和博士后，如果研究做的好，就继续下去，成为一名 PI。博士后之后应该是回国发展。

Q 学长今年暑假在美国进行了暑研并取得了一系列成果之后，对自己的今后的学业和职业发展有什么规划吗？

Q 学长在一次采访中提到了鲁迅先生的“无穷的远方，无尽的人们，都与我有关”。请问你很喜欢鲁迅先生的作品吗？主要喜欢阅读专业一类的书籍还是各类的书都有涉猎呢？

A 很喜欢读书，可惜一直找借口说没有时间，上大学以后再没有读很多书。各式各样的书都喜欢、都看。杂文者如鲁迅，散文者如木心，诗者如海子，科普者如《人类简史》，小说者如《群山回唱》，哲学家如叔本华、尼采、柏拉图、魔幻者如《哈利波特》《指环王》、科幻者如阿西莫夫……感兴趣的都看。



林丝语

还记得初入大学校园的我们，虽怀着憧憬，却也多少有些迷茫，毕竟我们站在一个崭新的起点上面对一片未知。也正是在大一，我们作为被照顾的新生们第一次接触到了 Academic Family 这样一个有归属感的“小家庭”。在大一一整年中，我们在有任何学业上的疑惑，或是对未来规划有些迷茫时，都不至于求问无门，而是可以私下请教我们的专属“parents”，或是在学姐学长们组织的小会里共同听取“过来人”的经验。在 Academic Family 的帮助下，我们的前面仿佛有了探路人和引路人，让我们能窥见未来的轮廓，有时也能让我们少绕些弯路。一年下来，我从 Academic Family 中受益良多，同时在自己行进的路上亲身感受了大学生活的种种，积攒了一些小小的经历。因此当我们迈入大二，也能作为“Parents”组建起自己的 family 时，我希望自己能传递自己在大一时收到的那些热情与帮助，就怀着试一试的心情报了名。其实当真正以“parents”的身份面对学弟学妹时是有些紧张的，说到底我们只是比他们提前经历了一年的大学生活，只能用自己有限的经验帮助他们。但其实 Academic Family 之所以叫 family，也正是因为它不仅仅是用来在学业上答疑解惑的，更是让人有归属感的。其实在真正和学弟学妹们交流时是轻松愉快的，他们怀着对未来的好奇，我们则将记忆里那些切切实实的经历讲述给他们听。我们会发现他们与大一的自己的许多想法与疑惑都有相似之处，他们提出的一个个问题和对他们回答的反应都让人感到率性可爱。给予是我们的初心，但这个看似是在给予的过

WE ARE:

ACADEMIC FAMILY!



程实际上对于我们也是一种收获，因为结识一群可爱的人本身就是难能可贵的。当然，其实第一次以“parents”的身份加入 Academic Family 的我们也有很多不足，有时顶着自己繁重的学业会忘记关注学弟学妹们的最近情况。因此将来我们也需要尽力改进，让我们的 Family 成为更有帮助的存在。



何康宁

怀着期待与些许的担忧，我们迈入大学这座未知的“城”。发现，很多的选择需要我们自己去做，很多的事情需要我们独立完成，很多的夜路需要我们独自走完。新生活里的点滴在不知不觉中吞噬着时间以及初进校园的喜悦，迷茫在心中萌发新芽。但是后来，我们有了 Academic Family，有了两位可爱热情 AF 学姐的帮助和关心，在浙大海宁我们有了小小的家，在这里我们有了归属感。

在 Academic Family 里，我们可以是微信聊天里无话不说的密友，可以是书桌上学习交流的伙伴，也可以是社团活动里携手合作的 partners。因为一年的时间，学长学姐比我们有更多学习与生活的经验。我们面对与即将面对的问题与选择，挑战与机遇，他们可能都曾经经历过。我们通过他们，快速地认知与感受着这所学校，即将去往的远方渐渐明晰。

当然，一切美好的关系都是相互的。刚刚进入大学的我们也期待自己的存在能够带给学长学姐们一些新的东西，虽然在专业与学业上我们可能还是一卷白纸。但是，人与人的交往本来就是一件很温暖的事情啊，无关年龄，无关经历。价值观的碰撞，思维的融合与情感的共鸣，我们是同龄人，我们有共同追寻的东西，我们相信这些都是归属感产生的来源。

温暖需要传承。学期接近尾声，我们也在暗暗期待。明年的我们，是否也有机会，有能力，像现在的学长学姐一样，给 2020 的小新新们提供一些经验与帮助，将这份学院里的温暖，继续传递下去。



潘若琦

一直觉得 Academic Family 是大学生活里特别暖心的一个存在。去年，对于刚刚迈入大学生活的我来说，它在某种意义上像是一根定海神针，稳住了大部分不安的情绪，也把很多陌生的未知的东西提前带给我。今年身份转变，从不断发出疑问的大一新生变成了可以回答这些疑问的学姐。人们都说人生该走的弯路一米都不能少，那我想这个 AF 存在的意义就是引导学弟学妹们尽量避免走那些多余的、不该走的弯路。

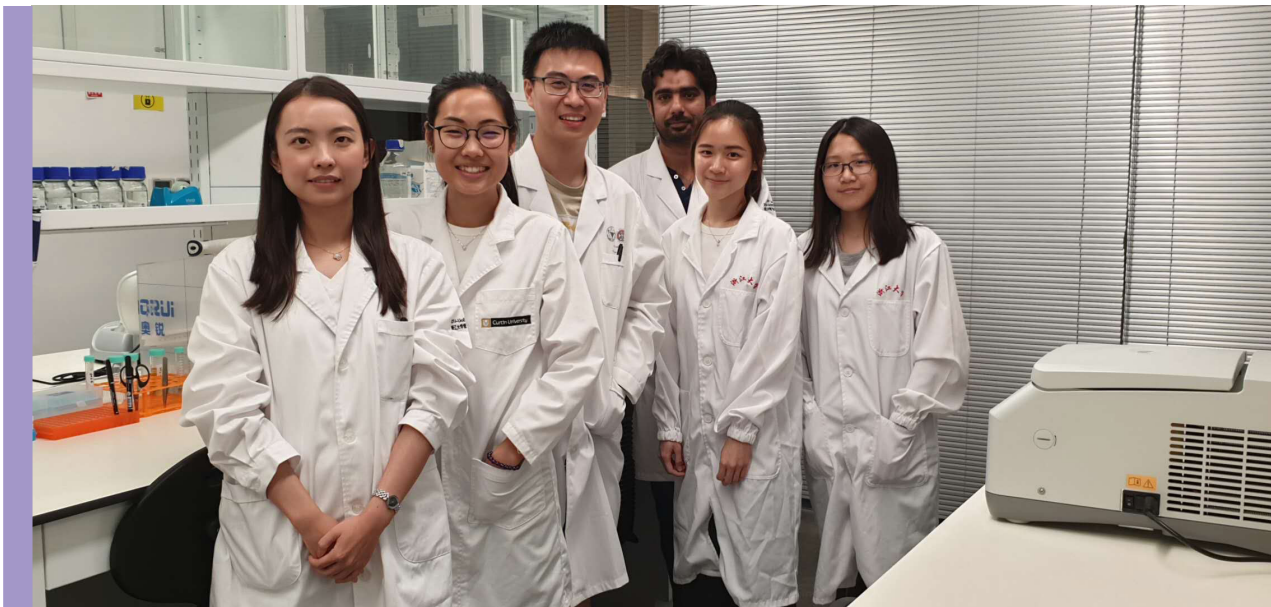
但再怎么帮助，也只是引导。比如我们建议如何记数学笔记，看哪本化学中文课本会比较有用，都只能是给学弟学妹们提供一个不错的选择，最终他们都会自己慢慢摸索着找到最适合自己的方式。从这个过程的经历者变成旁观者，感觉特别奇妙，看着他们抓耳挠腮的面对新事物，又渐渐用自己的方式熟悉了这些事物，就好像看一年前的自己，想着能多帮到他们一点就好了。

我是第一届生物信息的学生，在大一下学期面对生信课程的时候，还没有 AF 学长学姐来帮着找路，但今年可以帮助 AF 里的学妹解决疑惑啦。

最希望看到是学弟学妹们在大学生活中找到自己的路，学业上也好，社团活动或者是学生工作中也好，都能成为让自己越来越满意的人，成为一个个发着光的存在，但同时也在任何有困惑的时候，在 AF 的小家庭里积极寻求帮助也好，抱怨一声也好，然后在这里积蓄满满的能量之后，再次出发。

MY SUMMER LAB EXPERIENCE: HOW IT HAS SHAPED ME AS A STUDENT, SCIENTIST, AND PERSON

© TAN Jia Wei



Year 1 ended in a blink of an eye, after dealing with overwhelming assignments, assessments and final examinations, here comes the long-awaited three-month summer break! Instead of flying back to Malaysia directly, I decided to apply for a lab internship and was honoured to be accepted by Dr Chan Kuan Yoow, who is coincidentally from Malaysia. Dr Chan's research focuses on the role of the centrosome in regulating the eukaryotic cell cycle, particularly on how centrosomal abnormalities contribute to the deregulation of the cell cycle in human cancers. I never have any research experience before and my goal is to gain practical experience and basic hands-on training in a research environment. However, I had no idea what I had actually gotten myself into. In this two-month summer lab internship, I have gained whole new experiences and have broadened my horizon.

Academically, this summer lab internship has greatly expanded my knowledge. I was offered mini-project aims to develop a system known as auxin-inducible degron (AID) system and use it as a tool to check whether it can achieve a rapid and inducible protein degradation in non-plant systems. To do so, it requires a basic technique – gene cloning. I have long heard about cloning from theory and textbook but have never really know how to perform it in practical. In Chan's lab, I finally had the opportunity to learn the approach and strategy for gene cloning. Never did I imagine how much work is required just to clone a gene. Gene cloning also required other approaches including polymerase chain reaction (PCR) method, transformation and transfection, which have allowed me to gain more practical skills.

Besides, this internship has really given me a great taste of the research world as well.

Every experiment must be done precisely and with caution, or else the entire experiment might be screwed up. However, a negative result can still happen even you have ensured that everything went well and pay attention to detail. Here, I realized that sometimes research isn't just about hard work, but also require a little luck. Dealing with failure is part of the process as I would say failure is not just an option in research, it's guaranteed. Having a positive mind and be optimistic are therefore important when doing experiments. In addition, I have learned that research required many repetitions to discover results and real patterns. Sometimes it seems tedious and pointless to me but this is part of the process to grasp the big picture.

I have gained a lot of practical techniques in the lab but that wasn't the only merit of the internship. Most importantly, this summer has helped me grow as a person. Although I do not always understand what exactly I am doing or why I am doing it, I have developed patience, curiosity and learned to deal with failure, which are skills that are definitely necessary for both research and life. My research advisor, Shuang Shuang, a PhD student, was a very kind and helpful mentor. She guided me through my project, patiently correct my mistake and shared her knowledge with me. Working with people I can enjoy daily has been extremely gratifying for me. I learned from their experiences and views, which are definitely useful in my future. This summer has been full of new experiences and challenges, I appreciated the opportunity to work in Chan's lab and has benefited a lot. I've gained invaluable skills, technical and otherwise, that I would not have learned inside a lecture hall.

COMPUTATIONAL BIOLOGY SUMMER RESEARCH IN LAB W

© **Adelde Valeria**

Since the summer of 2019, I have thoroughly enjoyed my experience interning in Lab W at Zhejiang University International Campus. Two months prior to the summer vacation, I sent a cover letter alongside my CV to Dr. Wanlu Liu. I was fortunate enough to be recruited after undergoing an interview. My eight-week computational biology internship allowed me to apply my year 1 informatics knowledge, such as using version control to collaborate with my labmates, programming with Python/R and navigating the Unix file system.

My group's summer research project was about the identification of transposable elements in human embryonic stem cells from RNA-seq data. Another group focused on human cancer cells. Our weekly journal club provided every lab member space to exchange knowledge and review both fields in one summer. The project resulted in me being familiar with key aspects of RNA-seq analysis pipeline (raw data quality control to differential

expression), data visualization with R/Python and RNA-sequencing experiments. The experience helped shape me into a more organized student. After every lab meeting, Wanlu required us to list all the programming commands used during the meeting and to write a learning summary in a markdown file. By the time I started my sophomore year, creating rich and readable notes has become a habit. The internship taught me to take responsibility for my education. Aside from lab meetings, we were given a flexible schedule which allowed me to get my tasks done during my most productive time of the day anywhere I like, including my comfy bed. Flexible schedules challenged me to practice personal accountability and maintain self-motivation. I also learned to ask better questions. Wanlu encouraged us to search online on Bioinformatics or programming community forums, such as BioStar, Stack Overflow or Github before bombarding her with questions.

Another memorable experience during my summer internship was when Wanlu assigned us to write a script to calculate exon length per gene. I spent several hours to write my code. She purposely trained us to learn the hard way by figuring things for ourselves and going through trial and error before showing us a one-line code to solve the task. I was annoyed, but when I later reflected on the experience, I must say that the hard way was the easy way to hone my problem-solving ability. I truly gained valuable lessons and meaningful friendships from my summer internship. Without hesitation, I highly recommend Lab W (labw.org) to motivated students.

ZJJE DAILY

03



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LOVE IS
BOUNDLESS:
EXPERIENCE
IN THE
RED CROSS

© Chook Hou Wei

I had the privilege of being one of the founding members of International Campus, Zhejiang University's Student Branch of the Red Cross. The International Campus, Zhejiang University's Student Branch of the Red Cross was founded in April 2019, and originally had seven members. Currently, we have 22 members, one of which is an international student. As of now, we have organised various activities designed to benefit us as well as society as a whole, such activities include blood donation drives, HIV/AIDS awareness and a letter-writing programme in conjunction with Jiaoma Primary School, Guizhou province. Our activities are guided by our mission, which is concordant with that of the International

Red Cross Movement, which are the protection of human life and health, the protection of dignity for all humans and the alleviation of human suffering. Allow me to tell you more about us!

The International Red Cross Movement which guides us originated from the foundation of the International Committee of the Red Cross (ICRC). The founder of the ICRC, Jean-Henri Durant founded the ICRC after watching the devastation caused by the Battle of Solferino, 1859, where the wounded were simply left to die on the battlefield. In response to the gruesome scene he witnessed, he founded the ICRC, a neutral party which tended to the wounded regardless of the soldiers'

affiliations. The ICRC has authority to tend to the victims of international and internal armed conflicts worldwide, an authority granted by international humanitarian law. In areas of conflict, the emblem of the ICRC, a colour-switched version of the National Flag of Switzerland stands as a beacon of hope, providing a safe haven for victims of armed conflict. The foundation of the International Federation of Red Cross and Red Crescent Societies and various National Red Cross and Red Crescent Societies followed, joining in the International Red Cross Movement. These societies are often tightly linked to local healthcare systems and serve to promote health and wellbeing in their respective countries. The ethos of the International Red Cross Movement resonates with that of the International Campus, Zhejiang University's Student Branch of the Red Cross, which is to protect human life and health, ensuring dignity for all and to alleviate human suffering. Our ethos is the basis for all activities/programmes we have and will organise.

Infectious diseases remain one of the most common causes of preventable deaths worldwide, killing millions of people annually. In response to the recent coronavirus outbreak in China, we shared information on how to protect ourselves against the virus on our WeChat page. In addition, we organised a HIV/AIDS awareness activity in October. HIV/AIDS is a serious disease which is transmitted through the mixing of body fluids, which may include the transfusion of contaminated blood, using shared intravenous needles and unprotected sex, a major route of transmission. In order to teach students to protect themselves

against HIV/AIDS, we organised an activity where participants learnt to use condoms by putting them on bananas! Although many participants were embarrassed at first, they got over their initial embarrassment and quickly learned the correct method of using condoms as well as learning the importance of practicing safe sex to prevent sexually transmitted infections. In many cultures, discussions about sexual intercourse is considered taboo, but we believe that a little embarrassment greatly offsets the negative effects of contracting a sexually transmitted infection!

In many medical emergencies, the correct administration of first aid may improve the chances of survival significantly. We recognise the importance of public knowledge of first aid, as such, we organised a first aid training session last November, which was accredited by the American Heart Association. During the session, trained staff from the Zhejiang University Medical School taught participants how to perform cardiopulmonary resuscitation (CPR) as well as the correct way of using an Automated External Defibrillator (AED), which are found in various places in campus. It was a tiring, but fruitful experience for the participants, who were certified as being trained in CPR by the American Heart Association at the end of the session. Medical emergencies are often severe and unexpected, therefore, the presence of someone who knows first aid can be the difference between the life and death. Although the administration of first aid may not guarantee survival, but it is definitely better than doing nothing at all. We are glad that we can disseminate

knowledge of first aid to the wider university community, and we plan to organise more training sessions like this in the near future.

Blood is a requirement in many medical procedures, which include surgeries or the treatment of several diseases. Unfortunately, there is no available method to synthetically produce human blood, as such, the only way to keep blood banks from running dry is to stock them with blood from donors. Blood banks are often on the verge of running dry, and when that happens, the treatment of some patients have to be suspended due to a lack of stored blood, we recognise the importance of keeping blood banks stocked, so we organised two blood donation drives in May and December. Our blood donation drives are organised in collaboration with the Haining Blood Bank, which would collect blood in a mobile blood collection centre. I am proud to report that in both blood donation drives, we have had a large number of brave and selfless blood donors who did their part in stopping the Haining Blood Bank from running dry. We are committed in playing our part in keeping blood banks stocked, so you can expect us to organise more blood donation drives in the future. Are you interested in donating blood?

I feel that it is safe to say that most of us grew up with lots of support from our parents, however, what we take

for granted is often not the case for the children who study in Jiaoma Primary School in the Guizhou Province. Many of these children are known as “left-behind children”, children whose parents have left to work in larger cities in search for better pay, often leaving their children in the care of their grandparents or other relatives. We wanted to do our part in providing some support to these children, therefore we organized a letter writing programme where members of the International Campus, Zhejiang University become pen pals with one or more students of Jiaoma Primary School. This is an excellent opportunity for students of the International Campus to practice communicating with children, for international students to practise their Chinese and for Jiaoma Primary School students to have a role model outside of their regular social circle.

Joining the International Campus, Zhejiang University’s Student Branch of the Red Cross has been an enriching experience for me, not only do I have the opportunity to work with my peers who are committed to the same cause as myself; in joining this movement, I started to understand the joy that stems from working for something greater than myself. I had the honour of witnessing and being part of a group working for such a noble cause, and I hope to contribute to this cause to the best of my ability.



04



時事淺議



由科技与伦理困境所引发的人类未来猜想

◎ 王子襟

近期的基因编辑婴儿事件引发了新一轮的科技伦理问题大讨论，本文便是乘上热度的风帆，与读者朋友讨论一下面对未来的人伦方向。

接下来的数学推理证明的是本文的核心前提

证明：“人”这一概念所指的个体具有绝对被动性（绝对被动性此处是指完全由客体决定，主观能动性是指“自我”对周围事物有意识地施加影响）。

解：已知目前能被人类认知的事物均为物质、能量及信息（以下简称三元素）构成，易知“人”由三元素构成。已知一个人类个体诞生的起点所具有三元素无法由该个体决定，故对个体而言为绝对被动，规定该点为“-1”。

设“人恰好生成主观能动性”的点为“0”，即：区间 $(-1, 0)$ 内，即有效主观能动性生成的过程中，该个体无法对与其相关的三元素进行任何干预，易得0处的三元素具有绝对被动性。

所以，对于该个体，其生成的主观能动性具有绝对被动性，that is, 该个体的主观能动性由客体决定，

Thus, 该个体施加的影响也由客体决定

Note that 个体在 $(0, \infty)$ 获得的三元素由客体和主体共同影响，而主体影响由客体决定

Then $(0, \infty)$ 内的三元素均由客体决定，that is, $(0, \infty)$ 内的三元素具有绝对被动性

Given “人”由三元素构成，

Thus, “人”具有绝对被动性。

如果转换成网络语言的话，就是你以为“你以为的”就是“你”以为的，其实“你以为的”和“你”都是由外界“以为的”（当然，外界不具备主观意识，你可以将外界的运动变化看作“以为”）。

以一杀人凶手为例说明：假设我们在一个与当时完全相同的另一个星球上完美复制其自身，再给予与其当时完全相同的外界环境的三元素，易得一个人生轨迹完全相同的凶手；

假设能够精确推演出其成为守法公民的外在条件，并完美实现，易知实验目标达成。问题一：其功绩归谁？应该是归施加条件者，至少主流大众哲学如是认为。问题二：将实验完全反转，即已知一正常公民，被改塑成凶手，归罪于谁似乎同理。

之后进行具体赋值：将该星球赋值为地球，将条件施加者赋值为“世界”，自然，世界并没有主观意识，无法有意识地达成某种实验目标。不过，由已被证明的绝对被动性可得，由无意识的世界所孕育的有意识只是无意识的一种映射，因此一个无意识的结果可以等价成有意识的实验目标，赋值为“世界”后，该命题

依旧等价。重新思考问题二：该凶手的罪行是否由本人承担？凶手虽然具有主观能动性，但由于其生成发展等并非由所谓“自我”所掌握，只是凶手所处客观条件的映射而已，因此无法对其主观能动性所带来的影响负实际责任（虽然社会用法律归咎于他）；即如果世界给予的实验条件让其形成了错误的主观能动性使其不能通过自身的主观能动性回归正确的人生轨道，规避错误，纵使犯下罪行，我们也无法理直气壮地审判之。这不禁叫人想起一句著名的鸡汤，“这个世界对你的伤害不能成为你伤害别人的理由”。没有逻辑上的问题，如果不考虑一种可能的话，“这个世界用伤害你的方式给予了你伤害别人的充要条件”。

该论调确实颠覆了很多以此基础的大众道德认识，但并不会动摇现代社会观念的根基，甚至与绝大多数的哲学理论和政治经济学说好兼容，原因有三：

第一，绝大多数人不会接受这种价值观，缺少影响力。因此以人为核心的研究，如哲学及政治经济学原理等依旧正确；

第二，即使接受，也无法将其自然地融入日常价值判断。简言之，“说起来容易做起来难”。人类很难违抗由基因决定的思考习惯；

第三，持有该价值观的人通常都是“意义主义者”。对他们而言，“意义”是衡量是非的唯一尺度。起初或有些许“小孩才看对错，大人只看利弊”的功利感，不过细细一品倒也说的过去。两段情感的生成，源于是非诞生之初，本就是意义一种原始的表达形态：原本蛮荒的地球上仅有优胜劣汰的丛林法则，无法生存便没有意义，是非的概念远未诞生，自然法则是唯一的尺度。人类之所以创造了是非对错的概念，归根究底还是为了某种利弊，比如发明了律法、宗教等诸观念，都是为了让自己的所属群体更好地生存下去。利弊与是非的联系难以看清，原因是复杂且多样的，你不在该利益团体中，利弊范围过大个体难以看清（即：为了更伟大的利益）……反过来讲，如果你所讨论的是非无法厘清或是没有利弊的成分，那只能是一种危险的教条，甚至有可能是彻底错

误的。“利弊”与“意义”本不存在混淆的情况，将利弊的尺度和适用范围适当扩展，就会得到各种版本的“意义”，总有一种对应你所承认的意义。

回归主题，笔者花费了巨大的笔墨来讨论“近代形而上唯物主义 / 机械唯物主义”2.0，并非是想让读者接受自己的价值取向。法律、道德、抑或是正义等概念，在该价值体系下都有失公允。这并不意味着笔者对这些概念有什么过激的见解；相反，笔者拜其主义所赐，更加体会到其无与伦比的崇高感和人类的尊严满足。它们并非“反抗”这个“命定规则”的对策，而是随流扬波的生存之道：人类巧妙地利用了其命运的被动性，将积极的愿望写入其中，虽然就像木偶戏一样深受支配，连同那小小的美梦一起，都不属于自己，而是属于造物之外的东西。但没有规则说意义一定要体现在“实现主体”上。人类或许是被“被动性”的果壳困于其中，但这赌上人类所谓“自由”与“自我”的悲剧，其力量是不会被舞台的尺寸所束缚的。笔者相信，这套体系在许久以前就已有哲学的先人构筑完善，只是未曾宣扬：在注定被动的死局之下，丧气话不必去说，他们在“真相”与“尊严”间选择了后者，将事实埋葬，用其理想构筑出另一种“被动”。是的，就是这个不讲情面，泯灭童心，温凉世故的成人世界里的诸多规则。我自此也不再厌恶它，因为它也是人类童话的一部分，人类的美梦，未曾破灭。尽管人类引以为傲的主观能动性依旧脱离不了绝对被动的局限，但正是对这一现象的坦诚相见，使得人得以更加深刻地理解世间万物的行为逻辑关系，多一份客观和理解，多一份包容和信任，纵使这个既不温柔也不正确的世界无法让所有人平安幸福，在无穷的命运面前人类有限的各种力量依旧捉襟见肘。但好在真相只有一个，而故事有千千万万，“匹诺曹”们依旧踱步而行，在一个又一个童话故事中徜徉遨游，从未放弃“自欺欺人”，也未曾停止坚定前进。不管你对笔者的这套理论感不感兴趣，我的朋友，我一定会站在人类这边，并且坚信着：人类一定能生存下去。

抽身洪流， 觅渡何处

浅谈学生在香港地区的行为抉择

◎ 郝宁慧

如果没有一片雪花认为自己造成了雪崩，如果没有一颗雨滴认为自己造成了洪水，那作为学生群体的我们，是否也选择被浪潮裹挟，从而洗脱获罪感？

方今风俗日偷，道德沦丧，行为举止多有出格，东方之珠，尤为恶劣，败德毁行之事，举目皆是。11月14日香港中小学全面停课，在动笔之前笔者简单采访了几位在香港求学的同学，询问他们真实的体验与感受。还好，笔者的同学们都十分安全的回到了内地；还好，他们没有切身感受暴力的伤害。11月20日英国剑桥大学宣布，鉴于香港地区局势混乱，取消暂定于11月29、30日在香港的面试。偌大



的香港容不下一张安静的书桌，这难道还不足以引以深思？

珠玉之体，奋不顾身，那是瞿秋白，那是置自己于不顾的拯救。他应该知道自己身躯内所含的文化价值，应该到书斋里去实现这个价值。但是他没有，他目睹人民沉浮于水火，他振臂一呼，跃向黑暗。只要能为社会的前进照亮一步之路，他就毅然举全身而自燃。但这好比用百年沉香木取暖，暴殄天物，得不一定偿失。于个人言，这是风骨，这是心中爱国热情在燃烧；于群体言，这是满腔热血的另类表达。秋白觅渡，他选择了牺牲自己的珠玉之身，我们觅渡，更可选择作用最大化的方式。我们不可否认这是香港地区的一次变革，一次改进机会，这种前进正如煤的形成，当时使用大量的木材，结果却只是一小块，但示威是不在其中的，更何况是暴力。且不说力量是否足够强大，也不谈行动能否持久，能否有效，单说此次请愿的目的和方式，就不允半丝宽容。

德国学生暴乱，台湾三日花事件，那是学生运动，那是学生对于政局的提议方式。学生可以身处象牙塔中学谙经世之法修身之术，现在却成为被邪恶势力蒙蔽了双眼暴虎冯河的“一线战士”，所谓请愿，所谓正义，只是融在群体中见不了光的无关真正建议的非分之想，是被其他势力利用的非分之想，而非让政府听到我们的声音这一最初目的。乌合之众，暴戾至死，如果学生枉理智于不顾，如果学生将烧砸争夺看作一种游戏，无严肃态度对待此事，无独立之精神，无自由之思想，只是被群体混沌的思想洪流裹挟，终将让自己的光明人生暗淡无光。白天正常，晚上疯狂，穿上黑衣，行无阻挡。这不是个人本身的迷茫，而是陷于集体中的恣放。此论并非说学生运动一无是处，我们不反对这样的请愿，但也绝不能让这样的诉求方式成为有恶意向人的枪杆。五四运动正是由学生的罢课游行而掀起，新文化运动也因学生的清醒和独立军事之外的思考而举办，只是他们都没有持久的生命力，都在时间的实践

下隐去，给真正有实力解决的问题的组织让位。学生运动暴力游行从来不会成为解决问题的最终方法，从来如此，此次亦然。

那是九龙近百年来最压抑最黑暗的一天，落笔时，我希望不会有再比这还令人沉痛的日子出现。廿日一夜火光四射，明天只留伤痕九龙。香港理工大学，本应是莘莘学子求学习德的殿堂，此刻只能无辜的躺在火海之中，看着自己的高等学府的躯壳被一点点燃烧，只飘落无能为力的灰烬，只剩下思想觉醒的渴望。《反蒙面法》希望扯下暴徒的面具，清醒的我们渴望扯下蒙蔽致乱者双目的眼罩。

以笔代枪，刀锋战士，那是鲁迅，那是渴望唤醒精神的力量。在寂寞中奔驰的勇士，他渴望着用精神敲打唤醒铁屋子中沉睡的人，用意志解药挽回麻木愚钝的国民，用文字声援学生运动，用笔让国民听到呼告。《纪念刘和珍君》中提及：“不在沉默中爆发，就在沉默中灭亡。”但此处的爆发想来不应是学生无实效的暴力运动，因为“至于此外的深的意义，我总觉得很寥寥，因为这实在不过是徒手的请愿。”今朝之境于当时执政府的无理，有很大不同，故学生暴力请愿的活动看起来荒唐而别有用心。他医愚，用文字的力量，文化的力量，让《野草》长满荒原，《呐喊》唤醒众生，《彷徨》之后更多学生国民清醒，让更多的人同频共振，拥有独立的思考，不再做伸长脖子的看客和无辜喋血的牺牲品。精神原子弹不断轰炸意识的基地，物质的铁蹄践踏理智的家园，物欲的洪流冲垮意志的围墙，保持清醒的独立的思考不易。但我们要有自己的思考，要有选择，可以投身请愿大队，也可以抽身洪流，统览全局，有清晰理智的判断。

不仅是我们，更有社会各界渴望净化改变此次暴力运动。不信，你听：钢琴曲《我和我的祖国》于11月19日晚响彻香港大会堂；不信，你看，8月14日，香港机场环球日报记者被暴徒殴打，当那句“我支持香港警察，现在你们



可以打我了”冷静而坚定的说出口，从来无畏，为护祖国，向死而生。

我们拥有知识武装的头脑，以笔为枪拥有腰杆笔直的民族文化自信，不做沉默的大多数，不在原则问题上让步，也不做徒手请愿的牺牲品。社交平台上需要我们清醒的文化的声音，点滴众筹中需要我们微薄的力量，或许更有意义的选择，不是在深夜大发感慨彻夜无眠，不是为一人之殇而停止我们文化涤荡的步伐，而是作为文化的传承者，像红细胞一样携带文化氧气穿梭于华夏之上、世界之中。

国际校区的人才，我们身处文化荟萃渊薮，理念交汇路口，接收来自四面八方的想法，不仅具有国际视野，更应坚守家国底线，不仅慎独，更慎群思。发现问题，不是抱怨，是用理性可行的切合自身身份的有效方法解决问题，应该会比流血的牺牲品多做一些实事。

洪流之中，觅渡觅渡何处？站在历史交叉口的同学呵，你们的选择和行动请一定出于你们自己深沉且独立的思考。请记住：

你所站立的地方，
就是你的中国。
你怎么样，中国便怎么样；
你是什么，中国便是什么；
你理智清醒，
中国便不再混沌迷茫；
你有光明，
中国便不再黑暗。

TRANSITIONS OF ZJU-UOE

TRANSITIONS OF ZJU-UOE



百廿滄榮

或许你不知道，在我们浙江大学与爱丁堡大学灿若星辰的校友当中，还有这么一位曾活跃在十九世纪末二十世纪初雾都伦敦的街头，总是肩披风衣、口衔烟斗，拥有着惊人的洞察力以及前无古人的推理演绎能力，使欧洲犯罪分子闻风丧胆，屡屡侦破奇难案件的传奇人物……真相只有一个，他就是名侦探夏洛克·福尔摩斯！

是的，你没听错。只不过从某种程度来说，校友并不是这位传奇的虚构侦探本人，而是他的原型——约瑟夫·贝尔以及他的创造者——亚瑟·柯南·道尔。

1876年，爱丁堡大学已建校近300年，由于其悠久的历史、过硬的教学质量以及杰出的医学生物学届的校友，这里聚集了众多的医学教学能人，是当时著名的医学领域的高等学府。这一年，年轻的柯南·道尔来到这里学习医学，并且遇见了对他此后人生发展有着重大影响的人——英国爱丁堡大学医学院讲师，约瑟夫·贝尔。贝尔先生虽然只是医学院的讲师、一名外科医生，但他的行事作风、对事物的推断等各方面的能力却毫不逊于任何一名从事刑侦工作的专业人员。在柯南·道尔后续的回亿录中写道，贝尔先生在给病人看病时，只需要

简单观察一下，就能迅速从病人的行为和衣着等细节，推断出这个人的职业是什么，籍贯是哪里，甚至还能推断他从什么地方赶来爱丁堡的。显然，这样的事件深深的影响了柯南·道尔之后的写作生涯，类似的情节屡次出现在福尔摩斯系列小说中。例如，在福尔摩斯与他的助手华生第一次见面时，福尔摩斯就从华生的肤色、风度、衣着等方面准确推断出华生是一个刚从阿富汗退役归来的军医，据他本人解释，所有的这些推理在他脑中“历时不到一秒”。

后来的柯南·道尔自己曾经这样评价隐藏于福尔摩斯身后的贝尔，他是这样说的：我常常想到我的老师贝尔博士，他的古怪的主意，诡秘的计策，令人印象深刻。如果他是一名侦探的话，他可能能把侦探这个职业变成一项精确的科学。

关于约瑟夫·贝尔博士还有许许多多神秘的传闻，有些甚至将他与英国历史上最血腥恐怖的“开膛手杰克”连环杀人案联系在一起，称他协助警方锁定了犯罪嫌疑人。不过这并无考据，不排除是福尔摩斯名声大噪之后福尔摩斯迷们美好的猜测。不过，可以肯定的是，约瑟夫·贝尔作为福尔摩斯的原型，以其惊人的洞察力以及医学方面的知识，成为了一名优秀的医生以及讲师：他在1859年获爱丁堡大学医学博士学位，在十九世纪末受聘为皇家医学科学院院士，治安法官以及爱丁堡大学医学院讲师，甚至还曾担任维多利亚女王私人医生。柯南·道尔爵士虽然之后弃医从文，在爱丁堡大学的求学生涯也让他积累了丰富的毒物学、药理学知识，为福尔摩斯的诞生奠定了坚实的基础。

p.s.: 在小说中，夏洛克·福尔摩斯毕业于英国剑桥大学

名侦探

◎ 赵予晴

福尔摩斯 是校友？！

SHERLOCK
HOLM



ARTHUR
CONAN DOYLE

TRANSITIONS OF ZJU-UOE

TRANSITIONS OF ZJU-UOE

06



砥志研思

JOURNAL CLUB

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Epothilone D Improves Microtubule Density, Axonal Integrity, and Cognition in a Transgenic Mouse Model of Tauopathy

Kurt R. Brunden,^{1*} Bin Zhang,^{1*} Jenna Carroll,¹ Yuemang Yao,¹ Justin S. Potuzak,² Anne-Marie L. Hogan,² Michiyo Iba,¹ Michael J. James,¹ Sharon X. Xie,^{3,4} Carlo Ballatore,^{1,2} Amos B. Smith III,² Virginia M.-Y. Lee,¹ and John Q. Trojanowski^{1,3}

¹Center for Neurodegenerative Disease Research, Institute on Aging, Department of Pathology and Laboratory Medicine, School of Medicine, ²Department of Chemistry, School of Arts and Sciences, ³Institute on Aging, and ⁴Department of Biostatistics and Epidemiology, University of Pennsylvania, Philadelphia, Pennsylvania 19104

ABSTRACT

The number of individuals living with Alzheimer's Disease (AD) is rapidly increasing while no efficient treatment has been discovered, which induces physical and mental burden on families as well as health care problems for communities. The Alzheimer's disease is histopathologically characterized by the aggregation of extracellular amyloid precursor protein (APP) peptide fragment A β and intracellular neurofibrillary tangles (NFTs) formed by hyperphosphorylated tau proteins. Based on the pathologies, most of the drugs aiming at attenuating amyloid A β precipitation or tau aggregation have shown a positive effect for treating AD at molecular and cellular levels. However, due to the toxicity or limitation of effectiveness, few drugs have passed clinical trials. In this article, we will have a brief review of the mechanism of AD progression and focus on the effect of Epothilone D, a tau-centric target drug, on treating tauopathy in AD. Limitations and future development of the treatment will also be discussed.

INTRODUCTION

Insoluble neurofibrillary tangles (NFTs) comprised of hyperphosphorylated tau proteins were found in the brain of AD patients and have also been observed in other neurodegenerative diseases. The tau protein usually promotes microtubule (MT) stability in neurones, which is of great significance for nutrient and organelles delivery along axons. The aggregation of tau protein disintegrates microtubules, disrupts axonal transport and consequently,

contributes to dystrophy and degeneration of axons. Furthermore, among all the hallmarks for AD, the degree of tau aggregation is tightly correlated to AD progression. Therefore, the tau mutation is hypothesized to be one of the major causes of cell death and dementia (Robinson et al., 2018).

Continually failure of clinical trials in drugs targeting at amyloid A β , one of the earliest recognized AD hallmarks, rises the interest in

tau-centric drug for AD treatment (Panza et al., 2016; Mangialasche et al., 2010). One of the strategies is to use MT-stabilizing agent as a compensate for the function of tau. Paclitaxel, an MT-stabilizing drug applied in chemotherapy for cancer, was first tested in transgenic (Tg) mice of tauopathy (Zhang et al., 2005). The mice were observed to have an improvement in MT density, fast axonal transport (FAT) and motor performance after paclitaxel being absorbed by neuromuscular junctions. However, due to the poor penetration capacity of paclitaxel through the human blood-brain barrier (Fellner et al., 2002), the drug is not suitable for treating diseases originated from the brain (Brunden et al., 2011; Zhang et al., 2005). Then, the scientists turned their attention to several MT stabilizing compound with greater penetration capacity than the taxanes, such as epothilone D (EpoD), and hypothesized that EpoD could compensate for mutated tau in PS19 transgenic (Tg) mice.

MATERIAL

3-month-old PS19 tau Tg mouse is the animal model used for the experimental groups. It has a P301S mutation on MAPT gene (Goedert, 2005), which is transcribed and translated into hyperphosphorylated tau proteins, induces neurofibrillary tangles, tauopathy and neuronal loss. 3-month old non-Tg littermate mouse is used as a control group.

RESULTS

PHARMACOKINETIC TESTING

3.7mg/kg EpoD is injected intraperitoneally into mice and the concentration of the drug is measured in both brain and plasma. The result shows that EpoD has strong BBB penetration capacity and could also maintain at a relatively high concentration in the brain (Fig.1A). Another test measures the concentration of EpoD in brain 4, 6 and 10 days post 3mg/kg injection. The result represents that the level of EpoD in the brain could still be detected 10 days after injection, which might benefit prolonged MT stabilization (Fig.1B).

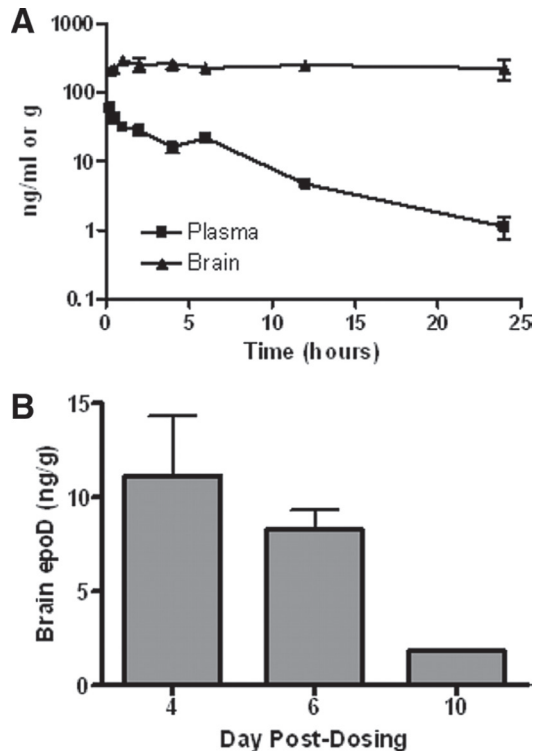


Fig 1: Pharmacokinetic testing of EpoD (Brunden et al., 2010).

To test the efficacy of EpoD on compensating tau loss-of-function, 3-month-old PS19 mice are divided into three groups. Two groups are injected with 1mg/kg or 3mg/kg EpoD dissolved in DMSO and the other group of mice is only injected by DMSO vehicle. Two groups of 3-month-old wide type mice injected with 3mg/kg EpoD or DMSO vehicle are used as control. The mice are fed for three months and sacrificed for behavioural, histological and molecular experiments.

PATHOLOGY VERIFICATION AND AXONAL DYSTROPHY OBSERVATION

Electron micrographs are taken on optic nerves extracted from 6-month-old WT mice and PS19 mice. The neurons of PS19 mice are less healthy than normal neurons or even died (Fig. 2A-C). The and dystrophy and degeneration of axons could already be observed at 3-month and becomes more distinct at

6-month of age (Fig. 2D). Mice with EpoD administration reveals lower dystrophic axon ratio than with vehicle injection in both wild type and PS19 mice. 1mg/kg injection of EpoD to PS19 mice might have higher efficacy than 3mg/kg group due to overstabilization of MTs. The MT density is also investigated as an index for the effect of EpoD on axonal architecture.

MICROTUBULE DENSITY

EpoD treatment significantly enhances the MT density in both PS19 and wild type mice (Fig.

3A). 1mg/kg EpoD treatment PS19 group reveals a better improvement than 3mg/kg EpoD treatment PS19 group.

IMMUNOHISTOCHEMICAL ANALYSIS OF HYPERPHOSPHORYLATED AND NORMAL TAU PROTEIN

Immunohistochemical analysis is used to detect the ratio of tau and phosphor-tau in optic nerve and brain. A mouse monoclonal antibody, AT8, is used to detect tau phosphorylated at ser202/205 while a rabbit anti-tau poly-

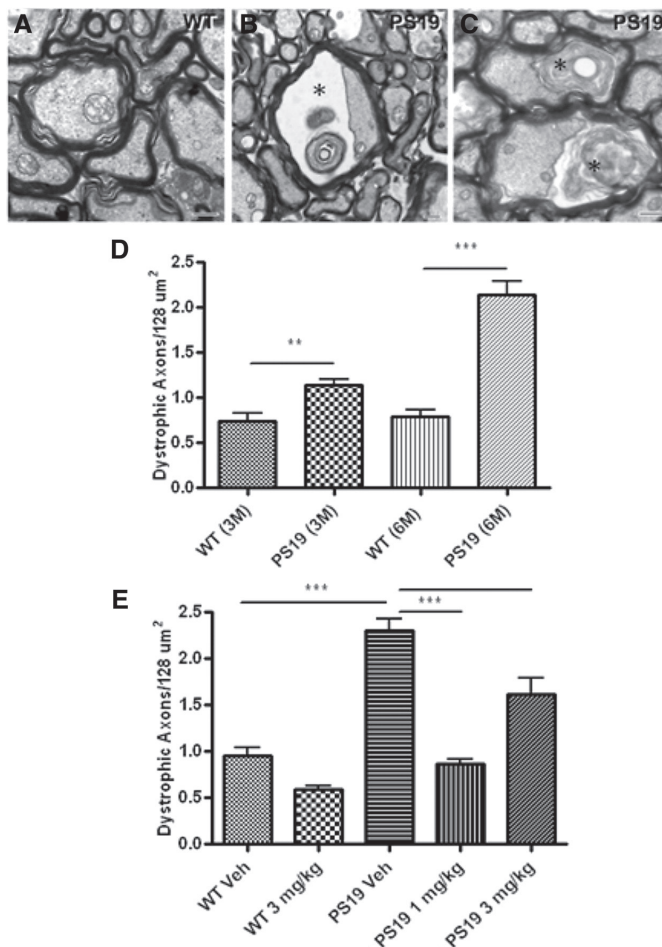


Figure 2 Axonal dystrophy analysis on optic nerves of mice. A-C, electron micrographs of optic neurons of wide type (A) and PS19 mice (B, C). D, axonal dystrophy degree of the optic nerve from female and male mice at 3- and 6-month old. E, assessment of the number of dystrophic axons of 6-month male WT and PS19 mice treated with vehicle or EpoD. Error bars represent SEM. ** $p < 0.01$, *** $p < 0.001$, calculated by two-tailed *t*-tests (Bruden et al., 2010).

clonal antibody is used to recognize normal tau protein. There is a trend of decrease in the percentage of phospho-tau protein in EpoD treatment group but failed to reach statistical significance. Which might suggest that EpoD is not able to reduce the percentage of hyper-phosphorylated tau protein (Fig. 3B).

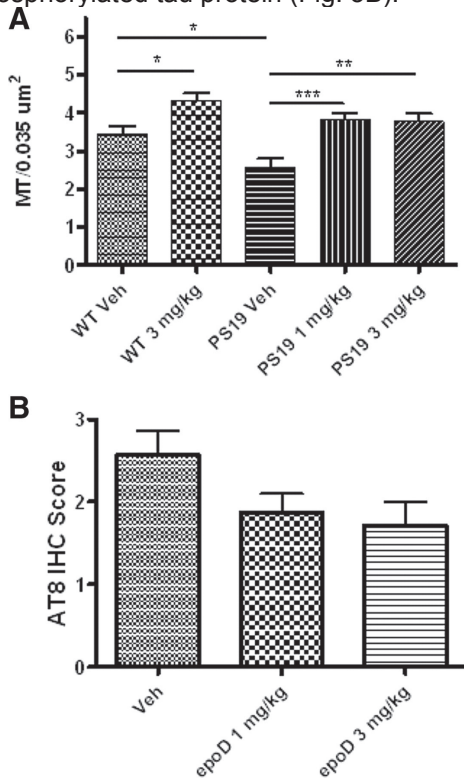


Figure 3 MT density and phospho-tau/tau pathology of the optic nerve in EpoD or vehicle-treated mice. A, MT density of EpoD or vehicle-treated WT and PS19 mice. B, the relative amount of phospho-tau in coronal slices of brain hemispheres. Error bars represent SEM. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, determined by one-way ANOVA (Bruden et al., 2010).

COGNITIVE BEHAVIOURAL TEST, THE BARNES MAZE (FIG. 4)

The axonal degeneration and decrease of MT density in 6-month old PS19 mice indicate they might have cognitive abnormalities. Therefore, Barnes maze is used to evaluate the abnormalities. Two key parameters, the success rate

of discovering an escape hole in the maze and the number of errors made in each trial before discovering the proper target, are measured for 5 days. The behaviour of PS19 mice is worse than wild type group on the first day of measurement. However, the success rate shows an increasing tendency in the following four days and gradually approach that of WT vehicle-treated mice (Fig. 5A). The error numbers made by EpoD treated mice have a decreasing tendency comparing to vehicle-treated PS19 mice, but 1mg/kg group failed to reach the statistical significance. It might due to the poor behaviour of that group on Day 3 (Fig. 5B).

DISCUSSION

Overall, epothilone D presents an attenuation effect on tauopathy at cellular and behavioural levels, providing a new possibility for clinical trials. However, 1mg/kg EpoD-treated PS19 group reveals better improvement in cellular and molecular level but failed to reach the statistical significance in error number test in the Barnes maze. Besides, epothilone D cannot improve motor performance of EpoD treated mice according to motor testing. It might due to selectively effect of EpoD or its toxicity. More experiments should be done to verify the efficacy.

EpoD could be detected by pharmacokinetic test after 10 days of injection. Consequently, it might cause some unexpected impairment on individual health. Also, the toxicity examination of the epothilone D only tests the complete blood counts and the weight of mice as well as its organs. The life span, cognitive and motor behaviour of mice should be monitored.

Some assessments used in the paper such as axonal dystrophy and MT density might be biased or with relatively large errors because they are assessed by human testers. More convincing approaches such as immunofluorescence could be used, providing readers with a more distinct view of those indexes.

Furthermore, although the tauopathy mice model carries the human tauopathy mutation,

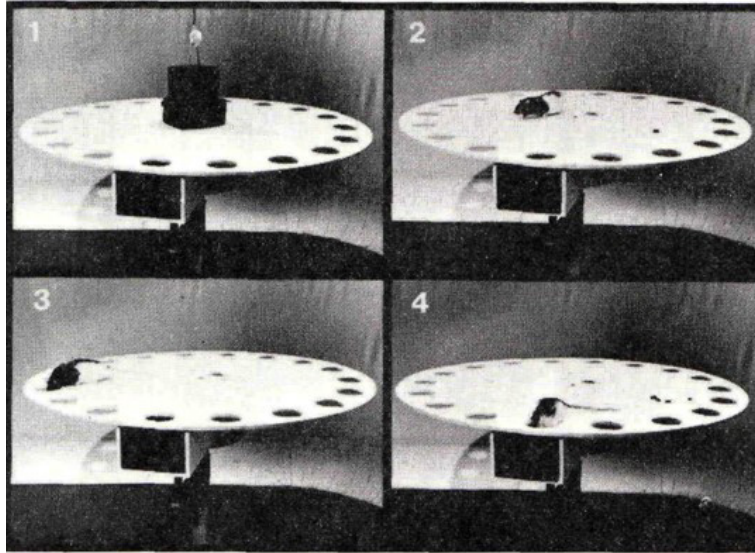


Figure 4 Barnes maze. The Barnes maze mainly refers to a circular platform with circular holes evenly distributed near the edge of the platform. There is only one hole from which the mouse can escape. The maze is usually used for detecting cognitive deficit in rodents (Barnes, 1979).

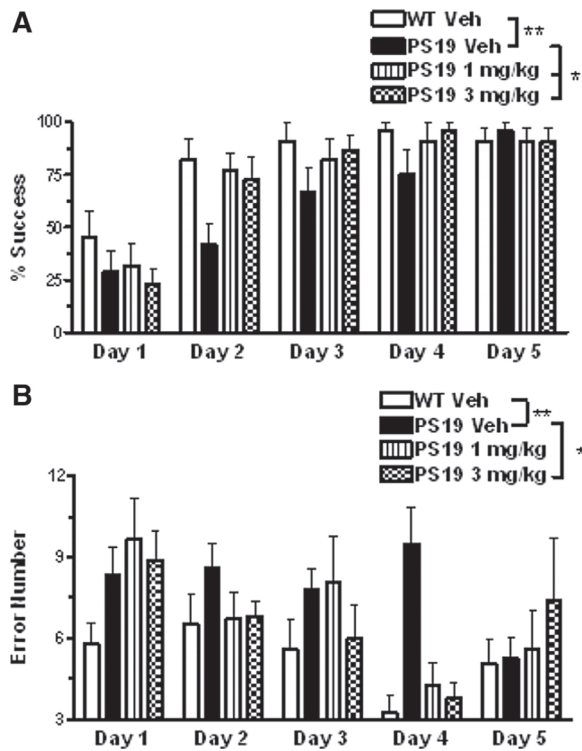


Figure 5 Barnes maze behavioural test of WT and PS19 mice administrated with EpoD or vehicle. A, successful rate. B, the average number of errors per trial. Error bars represent SEM. * $p < 0.05$, ** $p < 0.01$, determined by a repeated-measures statistical analysis (Bruden et al., 2010).

there are still great differences between human Alzheimer's Disease and PS19 mice tauopathy. Results with higher reliability are needed before the clinical trial.

Due to the limitation of the first assessment of epothilone D in treating tauopathy in dementia, another project is carried out by the first author of previous literature, Kurt R. Brunden, to test the efficacy of EpoD on Alzheimer's like pathology with aged tau transgenic mice (Zhang et al., 2012).

In the experiment, axonal dystrophy of PS19 mice reveals an age-related deterioration. EpoD treatment attenuates axonal dystrophy and improves the fast axonal transport (FAT) capacity. Y-maze test is used for cognitive performance evaluation, in which examiners determine whether the mice remember which of the three arms of the maze they have explored. Vehicle-treated PS19 mice perform badly while 1mg/kg treatment PS19 group has a significant improvement. The Barnes maze is carried out again and 1mg/kg group successfully reaches the statistical significance this time. 1mg/kg administration of EpoD might improve the working performance and spatial memory of PS19 mice with tauopathy. By using immunohistochemistry and ELISA measurement, a statistically significant decrease of phosphor-tau protein is observed in EpoD-treated PS19 mice.

Phase I clinical trial of epothilone D (BMS-241027) in treating mild AD was carried out on February 2012 and ended on October 2013. The trial was focusing on examining the safety, tolerability and effect of EpoD on CSF biomarkers (Bakota and Brandt, 2016). 40 participants are chosen and allocated randomly for the trial. Three dosages, 0.003, 0.01 and 0.03 mg/kg of EpoD were infused for nine weeks. A placebo group was used as control. The research was not continued and there was also no result shown on U.S. national library of medicine for the phase I clinical trial (<https://clinicaltrials.gov/ct2/show/study/NCT01492374>).

It might due to the lack of foundation support

since there are hundreds of drugs for the AD being tested in clinical trials while some other treatments might have more significant efficacy and lower side effect. Furthermore, there were no results shown so we may also hypothesize that the trial might fail due to the dropping-out of patients or medical malpractice.

Recently, research has found that the tight junctions lining blood-brain barrier might be disrupted in AD patients, providing paclitaxel and other drugs with a higher possibility of transportation into the brain (Sweeney, 2019). Meanwhile, pharmacists have been focusing on developing Ap-CssSA/P nano vectors for paclitaxel brain-delivery. Accompanied by SC79, an AKT agonist which can increase BBB penetration, the Ap-CssSA/P could deliver more paclitaxel into the brain as well as upregulating the expression of BBB tight junction proteins, Claudin-5, Occludin and ZO-1 (had not been published when the author was writing this review). The underlying mechanism was still unclear, but it might provide a new strategy on treating the Alzheimer's disease.

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Great thanks for the help from my Academic Advisor, Dr. Laura O'Hara. She provided me with some nice suggestions about giving perfect Journal Clubs. Thank you for the help from Jeff, who support and help me all along the first academic year. He is always the first audience for my Journal Clubs.

IBI Poster

在第一学年即将结束之际，生物信息学的同学们迎来了第一次Poster展示。我们将课内外所学到的有关Python的知识应用到核苷酸序列分析的相关问题上，例如GC含量的测定和互补DNA序列的输出。这次Poster展示最大的亮点便是additional function的设计，各组同学都富有创造力，设计出各种具有实际研究意义的function，诸如针对给定序列施加限制性内切酶并对被切割序列进行分析，以及对给定序列寻找转录因子。通过这次Poster展示，我们锻炼了自身编程的能力，对Python及数据库也有了更深入的了解。最重要的是，这让我们对生物信息学这一门学科有了更清楚的认识，切实地运用信息学的知识和手段，解决与生物医学研究有关的问题。

简单了解了Poster的基本内容，那最终展示的Poster是怎么样的呢？让我们一起来看看其中一组同学的Poster吧。

（该组成员为邱嫣然、潘若琦、王季馨、赵静娴和张逸为）

1

Alva: Our first problem is to assess the stability of DNA, which is very important for organisms to accurately pass down genetic information. We did so by calculating the GC content because Guanine-Cytosine base pairs use three hydrogen bonds, whereas Adenine-Thymine base pairs use only two, which means higher GC content proportion leads to higher DNA stability.

Our second question is to compute the complementary DNA strand of a given DNA strand because DNA has a double helix structure.

Then our problem is to study the flow of genetic information. So, in problem 3 and 4, we built convertors to transcribe DNA to mRNA, and to translate mRNA to proteins. The coding challenge for problem 3 is to transfer bases to complementary ones and the coding challenge for problem 4 is to translate mRNA with start codons and stop codons.

For our additional project, we applied restriction enzymes and output analysis of digested DNA sequences because restriction enzymes are very important for DNA manipulation, and the choice of restriction enzymes is important. The coding challenge is to find the restriction sites to split the string.

To complete the project, we met weekly on Fridays to write codes together. Our codes are then optimized by Effie and Nora, while Jessie designed the poster. Yiwei and I provided the content for our poster.





Nora: The aim of the first step is to calculate the GC content. We created a function called `countgc`, where we used a dictionary-class function “Counter” to count the numbers of G and C in the DNA sequence, then the sum of G and C divided by the total length of the DNA sequence to get the GC content.

The aim of step 2 is to compute complementary DNA strands and the aim of step 3 is to transcribe DNA to mRNA. In fact, these two steps are similar to some extent, so we defined a function called `base pair ()` and created three lists like this to transfer every base in DNA sequence to its reflection in another list. If we use this pair list as parameter, we can get the complementary DNA sequence, which has been reversed before print to keep it in order from 5' to 3'. If we use `mrna list` as parameter, we get the corresponding RNA sequence.



Yiwei: We first wrote RNA codon table in a txt file and read the whole file into a string, then we converted the string into a dictionary. As the process of translation happens when the start codon (“AUG”) is reached and ends when any one of the stop codons (“UAA”, “UAG” and “UGA”) is reached, we only translated nucleotides that were in this segment. We used “find” function to get the location of “AUG”, then we got every codon that consisted of three adjacent nucleotides including “AUG”. Then we matched these codons with RNA codon table to get the corresponding amino acid. The process of translation will stop when reaching the stop codon.



Effie: For the additional function, we worked out a way that can treat sequences given by the user with certain restriction enzymes and output the digested sequences with the number of base pairs of each DNA fragment. We first split the sequence depending on the sequence length of restriction enzyme. Then we searched for the compiled restriction sequence in each segmented sequence and got the index of base after the restriction site. We inserted ‘?’ at that site to split the sequence input and then stored each fragment in a list. For every restriction enzyme, we used bar charts to show the number of base pairs of each DNA fragment. In addition, we printed the index of the base after the restriction site for each restriction enzyme.



Jessie: Based on the approach taken, we got GC content, reverse complementary strands, mRNA sequence and protein sequence for any user-specified DNA sequence. For our additional function, we used four restriction enzymes. Take AluI for example, it recognizes “AGCT” and splits the sequence between “AG” and “CT”. We input a sequence in advance and here are the results. The sequence can't be digested by HindIII, BamHI or Sall, however, it can be digested by AluI. 1022, 804, 794 and 441 are indexes of each base after the restriction site. The graph shows the length of DNA fragments after digestion. With this function, scientists can know the length of each DNA fragment after digestion. If one fragment is too short, then it may not be observed on the band. So scientists can better choose restriction enzymes by using this function. Thank you for listening.



共话一席

Dr. Joanne Murray

Prof. Xin Chen



Dr. Joanne Murray

Associate Professor ZJE and Senior Academic-Track Lecturer, The University of Edinburgh

Dr Joanne Murray is an Academic Track Senior Lecturer (Zhejiang) and a Principal Investigator in the Centre for Discovery Brain Science, School of Biomedical Sciences. Joanne is a reproductive biologist with a particular interest in how nutrition can affect the reproductive axis. Three areas of current research are: 1. determining the role of hypothalamic melanin concentrating hormone expression in lactation; 2. characterizing the distribution of and interaction between the melanocortin receptors in the male and female reproductive axes; and 3. studying the role of oxygen in the growth and development of the ovarian follicle.

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Q You have now been teaching in ZJE institute for three years, how do you find the students here?

A Compared to the students I have taught previously, the students here are very studious, both engaged and engaging and highly motivated. I am concerned though that they are not taking time to enjoy and extend themselves by participating in extra-curricular activities. I think students need to find a study-life balance.

Q Soon the first-year students are going to enter the second year, do you have any suggestions or advice to help them prepare for the future challenges?

A I think they should have a refreshing break over the summer. They need to spend time on something they want to do other than studying. However, they also need to make sure that they revise their first-year subjects and continue to practise English, both reading and speaking. This will help

them to be well prepared for entering second-year. Most importantly though, it is vital to have some fun!

Q Could you offer some tips for third-year students to choose their elective courses?

A When you all graduate, the opportunities are diverse so students should not feel compelled to make their decision of which elective courses to take based on what they think they might do after they graduate. It is better to choose what they are interested in now and do well because that will help them to get a better degree classification and a higher GPA. It's easier to do well in something you enjoy and let the degree classification help to get the job or the position you want afterward. If you haven't done a particular subject, it will not determine completely what your options are in the future, although it might appear to limit some options initially. The first thing most supervisors or employers will look

at is your degree classification: their first decision is based on whether you are academically able as shown by that classification. If your degree classification is not strong then it doesn't really matter what subjects you have done or what experiences you have gained. I do worry that some students have become obsessed with lab experience and getting a lot of letters from different supervisors to the detriment of their studies. It is better to concentrate on your studies: there are plenty of opportunities to gain experience during the holiday periods without compromising your studies.

Q Which consideration needs to be taken to decide the research field in the future?

A I am probably not a good person to ask because I have not been strategic in my approach to my career so I am probably not an ideal role model. I have followed my passion. I fell in love with reproductive biology as an undergraduate and that love determined my choice for post-graduate research and all my later career choices. My choices have therefore not always resulted in a career trajectory that would be described as onwards and upwards, but my choices have always enabled me to maintain my independence to continue research reproductive biology. I could have had a different career path, but it would have meant not following my research interest in reproduction.

Q Would you mind sharing your current research with us?

A Currently, I have three ongoing projects. The first project involves my long-term interest in a neuropeptide called melanin-concentrating hormone (MCH). MCH is crucial in regulating energy expenditure and therefore has a role in body weight regulation. I am interested in how nutrition and therefore the body's metabolic status regulates the activity of the reproductive axis. Most recently we have been studying a group of cells in the hypothalamus that only express MCH in late lactation. We still don't know what their function is, but we are currently writing up the evidence that prolactin maintains the transient expression of MCH in these cells.

My second project involves the pituitary. I am interested in another peptide family called the melanocortins: one of the melanocortins is melanocyte stimulating hormone (MSH). MSH and MCH have functional antagonistic influences on each other. When I was doing the early work on MCH, we didn't know what the receptor was for MCH so we started to look at the melanocortin receptors thinking that maybe MCH interacted directly with one of these. Then, the receptor for MCH was identified, and it is an independent receptor to melanocortin receptor. But we were getting lots of pharmacological evidence that perhaps the receptor for MCH and the melanocortin receptors were "talking" to each other. So now we are trying to understand more about G-protein couple receptor (GPCR) heterodimerization. For instance,

can MC3 (one of the melanocortin receptors) heterodimerize with the MCH receptor, and if it does, does that change their outputs compared to when they act independently of each other? Alternatively, it also is possible that the signalling cascades of each receptor interact with each other within the cell and this is described as cross-talk. One cascade may modulate the other resulting in a different output. So we are trying to understand if heterodimerization or cross-talk occurs between some GPCRs and what the implications are for normal pituitary function.

The third project, which is my true passion, involves the ovary. I have been interested in how oxygen gets from the blood to the oocyte. We know that oocyte needs oxygen, but the cells surrounding an oocyte do not have a blood supply. Because of the distances involved it is unlikely that diffusion of oxygen will be sufficient. So we have been investigating oxygen concentrations in preovulatory ovarian follicles. Since moving to Edinburgh, rather than measuring oxygen concentrations I have been focusing on the ovarian vasculature. The vasculature is responsible for the delivery of nutrients by increasing blood flow to the periphery of the follicle either by increasing the diameter of the surrounding blood vessels and/or the extent of the blood vessels and by increasing the permeability of the blood vessels. We know already that a healthy follicle has more blood vessels surrounding it than a non-healthy follicle and that ovarian

blood flow changes in response to changes in reproductive hormones. So our current research has been aimed to investigate the role that vascular androgen receptors have on altering the permeability of the blood vessels.

Q What is the most challenging part when doing a research project?

A : Funding, research is expensive. It limits what you can do. The other limitation is time.

Q To conduct a research project usually requires teamwork. Could you describe how you have worked with a team to complete a research project, and how did you handle it?

A I am part of several different research teams, and we all do work very well together. For example, I am currently involved in 3 undergraduate student projects either as the first or second supervisor. Fortunately, I work closely and well with two colleagues at the University of Edinburgh so that when I am here in Haining, I know that my students are in safe hands and making excellent progress. I have worked with these colleagues now for several years and all our students have completed good quality work on time. Effective communication is critical when it comes to establishing successful collaborations with other researchers - and that includes undergraduate research students. You need to be open to each other and keep the conversation going. When someone stops talking to you, you should be worried.



Prof. Xin Chen

Xin Chen, Ph.D., is currently Professor and Associate Director of the Institute of Pharmaceutical Biotechnology at Zhejiang University and Professor (status-only) of the Department of Molecular Genetics at the University of Toronto. In 2005, he joined Zhejiang University and once worked as associate professor, professor and associate chair of the bioinformatics program in the College of Life Sciences. He received the talented scientist award and the innovative research team award from the Zhejiang Provincial Natural Science Foundation of China, and received the new century excellent talents in university award from the Chinese Ministry of Education.

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QHi Prof, I am impressed that you received two Bachelor's degrees in biotechnology and computer science from a major university in China. As for me, dealing with one is tough enough! How did you decide to double major? Did you know from the beginning that you wanted to become a computational biology scientist?

AI obtained the double B.Sc. major from Shanghai Jiaotong University. Shanghai Jiaotong University provides a double major system that allows you to share general course credits so that I only needed to complete the courses specific for the second major. With this setup, a second major surely took much time and effort. It was a kind of choice, how I would build up my CV when I had left university. I made up my mind to work in the area of computational biology in my second college year. Looking back from now, this decision may have a random component – I met a good lecturer in molecular biology in high school and my father works in the area of computer engineering. Both areas seemed promising when I got into

university.

QWhat advice would you give to students who feel unsure about their next step after undergraduate education, especially in trying to choose between a job and graduate school?

AIf you are unsure about your next step after undergraduate education, the best solution is to look more and experience more. Find internships in both industry and research labs. Different kinds of jobs have different kinds of life patterns. The more challenging ones are for people with more determination and strength. And of course, an academic path might be the most challenging one – but it is also rewarding – you work for the knowledge of the world.

QSome students found programming tasks to be challenging. As an instructor of Introduction to Biomedical Informatics, what do you think is the best way to study for this course?

ABiomedical informatics is not software engineering. The reason

biomedical informatics students need to learn programming is to ensure that they know the language of software engineers and their limits. For this purpose, they need to know how software is developed. Programming is a way of thinking; it is just like learning a natural language. Using a language is the best way to learn it. Similarly, the best way to learn programming is to do programming exercises.

QI agree, becoming a good programmer indeed requires tons of practice. Do you have any book or website recommendations for self-study?

ATo learn programming, Java is a good starting place because it essentially pioneered most advanced language features that other languages are currently using. Python and R are scripting languages, they can get jobs done quickly, but are not suitable for building large systems capable of complex functions. A good book that taught me Java is “Thinking in Java”. In the coming semester, a star lecturer, Kai Weng, will give you Java lectures. He once received a million RMB award for his teaching excellence in Java from Zhejiang University. I am sure that you are in good hands if you are determined to learn this language.

QComputer technology is evolving at an exponential rate. Where do you see biomedical informaticians working in 30 years from now? How will this rapid advancement affect the way biomedical informaticians work?

ATechnology evolves at a pace beyond any imagination. This is why we need to keep learning. In 30 years, what I see is that every “thing”

will be connected, and the emphasis of biomedical informatics will no longer be integrating different health information sources, but to understand this information and make inference and deduction under the root principle of medicine - evidence-based medicine.

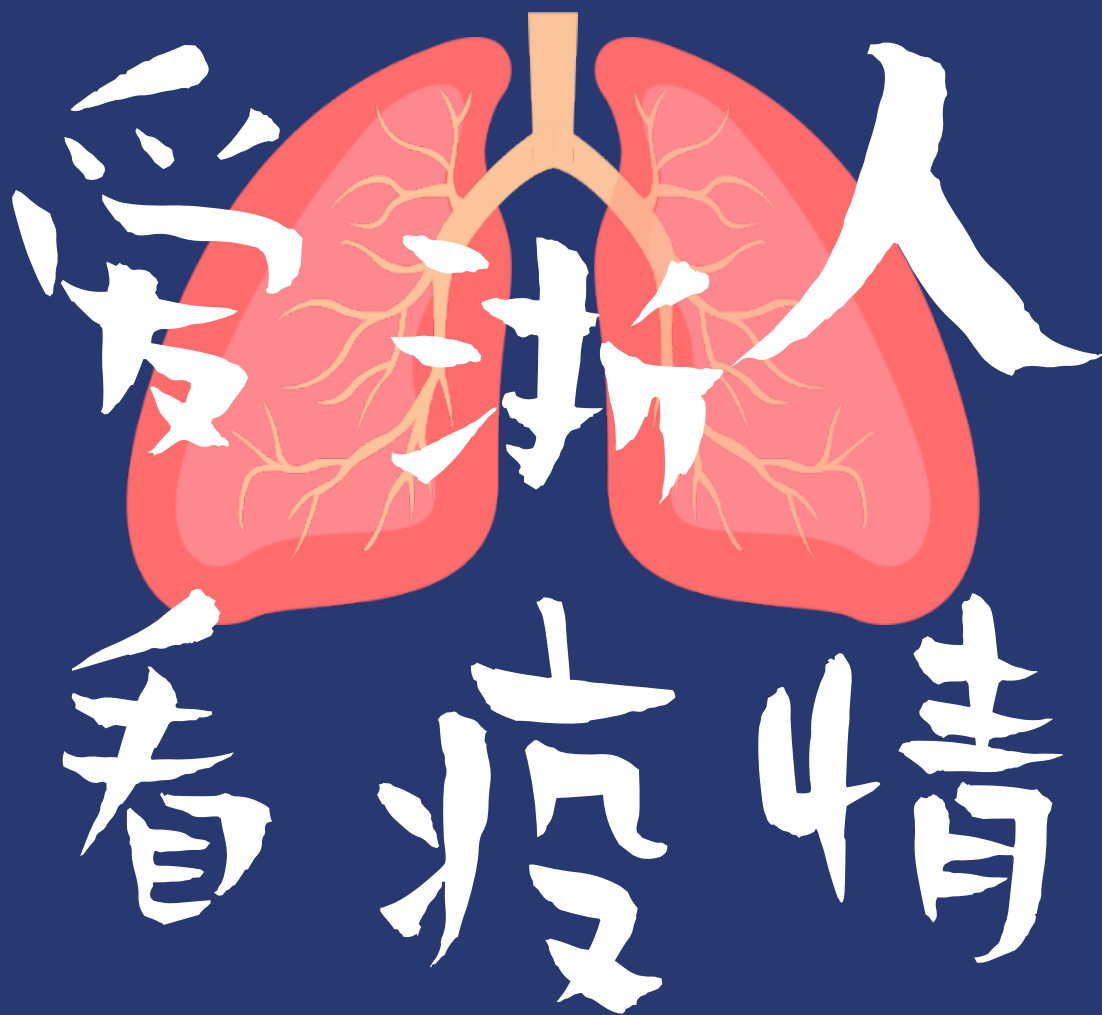
QRelating to your study and work experiences in Shanghai Jiaotong University, National University of Singapore (NUS) and University of Toronto (UoT), are these universities like ZJE Institute? In your opinion, how are they different?

AZJE is like UoT or NUS, which gives interactive lectures. Shanghai Jiaotong university is a typical Chinese university which runs like the ZJU's main campus. Interactive lectures help you master the knowledge learned, making you able to use them. However, interactive lectures also require more effort before and after class. Basically, you need to read the book before you come to lecture.

QLastly, some senior students are participating in internship abroad programs. Can you share some tips to maximize internship abroad experience?

AIf you have an opportunity to do an internship aboard, make sure that you understand the story of the research that is going on in your host laboratory. And if possible, try to understand how this story relates to the researches of his peer faculties. This can be done by following the paper trail of your host principal investigator (PI). An Internship is not only for you to train your skills, but also for you to broaden your vision.

INTERPRETION OF THE OUTBREAK BY THE NEW ENLIGHTENMENT



新冠疫情来势汹汹

如今已成为国际共同的难题

"the only thing we have to fear is fear itself"?

© Susan Welburn

As humans we have lots of fears; fear of snakes, fear of heights, fear of spiders and of course fear of diseases. In 1933, Franklin D Roosevelt the 32nd President of the US at the lowest point of the Great Depression said “let me assert my firm belief that the only thing we have to fear is...fear itself — nameless, unreasoning, unjustified terror which paralyzes needed efforts to convert retreat into advance”.

These words are as important today as they were back in 1933, as China now battles an unseen enemy causing fear and heartbreak in communities. Fear can cause unjustified terror that impedes public health efforts to manage the spread of infection.

In December 2019 a new illness emerged in Wuhan, caused by a novel RNA coronavirus, 2019-nCoV – a virus that seemingly came from nowhere, unknown to science. Suddenly, everyone was working day and night to manage the impact of this tiny little pathogen, to try and stop its spread regionally and globally, and to work to develop drugs and vaccines to prevent a global pandemic. The speed at which 2019-nCoV is spreading is truly incredible and the response of the PRC (and globally) is unprecedented.

The disease is so new and there are so many unknowns. We do not know where it came from, how it spreads or how deadly it really is? We don't know how the outbreak will end, but experience tells us that it will end. There are several possible outcomes.





Firstly, that the spread of 2019-nCoV is brought under control by extensive public health interventions (fast diagnosis, isolation and effective treatment of affected individuals, close identification of close contacts and their treatment). This is how two previous coronavirus outbreaks - SARS and MERS ended. Both viruses had made the jump from animals to humans and spread between them. SARS infected 8,096 people (mostly in China), and killed 774 people across 17 countries, but by 2004 SARS was no longer a public health problem. For SARS, health authorities identified cases quickly isolating and treating infected cases to prevent the infection spreading. Airports screened international travellers to establish whether they had been in contact with the virus. Today SARS may still exist in reservoir animal hosts, for example the forest civet, but it is not spreading among humans.

SARS could be contained, infected people, mostly did not spread the virus until they were showing symptoms, so when someone was sick, they were identified quickly, placed in quarantine and transmission was stopped.

2019-nCoV appears to be able to spread before any symptoms arise making it harder to contain. People do not know they are sick before they spread the virus to other people, and as they are not feeling ill, they will not seek medical care.

SARS also conveniently tended to stay within the hospital or healthcare setting with transmission fuelled by a few “super-spreaders” who were disproportionately infectious.

The 2019-nCoV outbreak has outpaced SARS. A new mathematical model published in *The Lancet* suggests that up to 75,800 people in Wuhan may have been infected by January 25 but also showed that if transmission could be reduced by a quarter, the growth rate of the outbreak would slow down.

COUTCOME 02

Secondly, the virus might die out after it infects all or most of the people that are most susceptible to it. Disease outbreaks need susceptible individuals to spread and a virus outbreak will stop when there are no susceptible people left to infect. The 2015-2016 Zika virus epidemic infected >35,000 people but died out when the number of susceptible individuals reduced. People who were most at risk of coming into contact with Zika carrying mosquitoes had already been exposed to the disease. Zika is still around today but is not spreading.

If 2019-nCoV runs low on susceptible individuals to infect, for example people showing some immunity, then public health interventions can finish it off.

COUTCOME 03

Lastly, 2019-nCoV may become yet another common seasonal virus, as has been seen before for flu. In 2009, a new flu strain H1N1 emerged and became pandemic but eventually became part of the normal flu architecture each flu season. 2019-nCoV could become another one of the 4 coronavirus strains that commonly infect humans every year, in China or globally.

Ultimately, the outbreak of 2019-nCoV will likely be ended with the invention of a new vaccine(s) but development and deployment may take some time. In the mean while we need to support a strong public health response such as is being launched in China. It is important to keep fear at bay and this virus in perspective, each year globally 500,000 people die of flu and many more would die of flu if we did not have flu vaccination programmes for high-risk groups.

诊断、治疗 的现状和未来 2019-nCoV

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新型冠状病毒肺炎（NCIP）较早的病例报道可以追溯到 2019 年 12 月 20 日 (1)。当天患者表现出发烧咳嗽等典型的呼吸道感染症状并被医院收治。这位 61 岁的老人是华南海鲜市场的常客。非常不幸的，这位老人因救治无效于 2020 年 1 月 9 号在医院病逝。目前，各地的研究机构已经完成了对新冠病毒的分离和测序工作 (2) (3)。从基因层面看，该病毒同某种蝙蝠 SARS 样冠状病毒（bat SARS-like CoV）有 85% 的相似性 (1)，它也成为了继 SARS 和 MERS 之后第三个明确感染人类的动物源冠状病毒 (4)。在有效分离新冠病毒（2019-nCoV）及病毒全基因组测序之前，临床诊断主要依赖于发热和 / 或呼吸道症

状、胸片（包括 CT）以及流行病学史 (5)。其中，因为新冠病毒能够引起肺部的免疫反应，我们可以从胸片中看到较为明显的病理学变化，如小斑片影、磨玻璃影等。在测序完成之后，相关科研团队已经研发出了以病毒 ORF1ab, N 和 E 基因为目标区间的实时荧光 RT-PCR 及其配套试剂盒 (1)。病毒核酸基因检测因为具有高灵敏性，是当下临床确诊的“金标准” (6)。值得注意的是，由于疫情严重试剂盒测试时间有限，有些地方已经出现了疑似假阴性的报道 (7)。同时，试剂盒也面临需求大于产能的困境 (8)。因此，结合流行病学史和临床症状的诊断仍是必要的。

在治疗和预防方面，目前暂时没有针对新冠病毒的特效药。中国疾病中心已经完成特定毒株的分离并开始研制疫苗(3)。此外，各地研究团队也在不断尝试目前已知的抗病毒药物。举例来说，中国科学院武汉病毒研究所已经证明瑞得西韦(Remdesivir)和磷酸氯喹(Chloroquine)在体外能够有效抑制新冠病毒的感染并申请相关专利(9)。其中，瑞得西韦是一种核苷类似物，它可以被病毒的RNA聚合酶(RdRp)识别并掺入病毒基因(RNA)中，终止RNA链的合成从而抑制病毒的进一步繁殖。当然，体外实验(in vitro)同临床试验(clinical trial)仍有不小的距离。药物的研发和应用是个相对漫长的过程，在应用之前需要考虑各项重要指标，如药物在体内的细胞毒性、有效性等等。当然，在治疗危重症病患时，我们仍当遵循“同情用药”原则。例如，美国的首例新冠病毒感染者就因病情恶化而特许用药瑞得西韦并在之后康复出院(10)。从统计学上看，要证明瑞得西韦的有效性仍需大量的临床例证，但这位康复患者的用药经历也无疑为该药的研究应用以及当下蔓延的疫情添了些许曙光。当然，双黄连也是道别样的风景线(误)。

对于已经形成一定规模的国内疫情而言，隔离仍是抑制疫情进一步蔓延最有效方法。在武汉等疫情严重的地区，即便我们用中国速度十天建造出可容纳一千人的火神山医院，收容和隔离每天新增的大量的疑似和确诊病例仍是一个极为巨大的挑战。在疫情相对温和的地区，为了避免因返工潮而引起的人流聚集，各地政府都采取限制出行的措施并按照国务院命令延长假期。今天是二月五号，离国家规定的返工时间还有四

天，而照目前的增长来看，平息疫情的时间远不止四天。假期是否会进一步延长？出行禁令会不会更加严格？我们可以等，可中国的经济又能等多久呢？全面小康之年里，我们道阻且长。

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疫情预测

冠状病毒
发展趋势

· EPIDEMIC PREDICTION ·

BY ZJEers

◎张逸为

新型冠状病毒感染的肺炎疫情形势，正牵动着无数人的心。这段时间以来，我也在每天关注有关新型冠状病毒的研究进展以及疫情形势，在此简单发表一下个人对新型冠状病毒治疗发展和未来情况的猜想。目前，新型冠状病毒毒株已成功分离，针对新型冠状病毒的疫苗研制以及抗病毒药物的研发和筛选工作也正在进行，相信我们可以很快从现有药物中寻找出暂时对抗病毒的方法并进行临床试用。此外，我注意到在《新型冠状病毒感染的肺炎诊疗方案〈试行第四版〉》中，藿香正气口服液等中药制剂被列为医学观察期推荐用药；并且，在2月3日，武汉市金银潭医院首批中医药参与治疗的患者出院。这两则信息都反映出中医药在新型冠状病毒治疗中的积极作用。我相信在接下来新型冠状病毒感染的肺炎治疗中，中医药将更多地参与到治疗中，提高治疗效果。最后，我相信在防控工作不断推进、全国人民一同努力的情况下，我们能筑好疫情防控防线，疫情也一定会很快得到控制！

◎李涛

自从各大省份向病毒宣战，启动一级响应以来，武汉新型冠状病毒的疫情发展牵动着十四亿国人的心。每天打开手机查看有多少新确诊的病例成为固定节目。从数据上看，到目前为止，在党中央的领导和全国人民的共同努力下，疫情的发展已经进入了一个新的阶段，增长趋势开始逐渐脱离指数模型。而我认为接下来病毒在湖北省内和湖北省外大多数地区将会继续维持两种不同的发展趋势。对于湖北省外的大部分地区，由于病毒的潜伏期中位数为三天，最长为二十四天 (Guan et al., 2020)，自武汉封城以来，各大省份严防死守至今已有三个星期，从武汉前往各省的输入型病例绝大部分已得到确诊及隔离，与病人有过接触的人员也大部分处于或已解除医学观察。因此我认为湖北省外的整体疫情处于高度可控的状态，新增确诊人数将会持续降低乃至出现负增长。而湖北省内尤其是武汉市内的抗疫形势则较为严峻。从数据的比较上我们可以看到湖北省公布的病亡比例远高于外省 (疫情通报, 2020)，也就是说湖北省内还有大量的病毒携带者没有被确诊，而湖北目前的医疗资源已经高度紧张。不过随着全国其他省份疫情的好转，对新冠病毒包围圈的不断缩小，以及随着天气回暖，流感病毒传播的减弱，我们有理由相信湖北省能够逐渐克服物资紧缺的困难并打赢这一场对抗 NCP 的阻击战。

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SUGGESTIONS
ON
DAILY LIVES
AND
ACADEMIC
PERFORMANCES

“

LIFE QUESTIONS

Q Some international students hope the campus can open the kitchen for them to cook native cuisine, so will the kitchen be open in the future?

A Yeah, because it doesn't have any plumbing right now, and then, you know, fire safety is a problem to you, and the school's general affairs department, which is making documents and regulations for the kichenettes, and then to ensure that there is no problem with the fire safety, if these things are done, and later may be open. But there's no way to guarantee that.

Q Some international students hope to use shared bikes in our campus, I wonder if it is possible to put bike-sharing into force?

A The shared bikes have been discussed and will be put into use on the campus later, but the specific time has not been determined yet.

ACADEMIC QUESTIONS

Q Some international students feel lonely and isolated because Chinese students always talk with each other in Chinese so they can't fit in well with them, I wonder if there is a good way for them to solve this problem?

A Yes, well I think there is a number of clubs and associations here for students to learn and practice both Chinese and English. I think that the program called study-buddy, actually the Chinese study department organized this, they also organized Chinese corner. But the idea for the study buddy is an international student meets their buddy who is a Chinese student regularly, at least once a week and for twenty minutes they talk all in Chinese and the next twenty minutes they talk all in English, so it's a very good way for them to do one to one practice. In addition, as I said, there are other associations, clubs that both international students and Chinese students are welcome to attend them to register. I think that they need to perhaps volunteer for some of those clubs which Chinese students are attending.

Q For Chinese students it is more comfortable to speak in Chinese and they are unaccustomed to speak in English. Could you please give us some advice on how to get out of our comfort zone and speak English more naturally ?

A In terms of encouraging Chinese students to speak more English all the time, that's a much more difficult question. As you know, when we have English language classes, students usually stop speaking English and in the end of the class the students switch to use Chinese. So in terms of encouraging students to speak English outside of the class, I think a bit like the study buddy, you just say "let's go and have tea or coffee" to your friends, and we promise each other will only speak English for the next fifteen minutes, like an additional practice.

Q When we speak in English, we are not confident enough and are afraid to make mistakes, could you please share some

suggestions on how to overcome these problems?

A Yes. First of all, don't worry about the mistakes, everybody makes mistakes. But the speaking doesn't matter with the language. I make mistakes but I don't stop and say "Oh, I make a mistake." I don't get embarrassed about it, I just continue and just forget that I made a mistake because it's not important as long as I am understood. Our courses are about communication, so the important thing is getting you meaning across. It's not important if you make a little grammar mistake or your pronunciation one word is not exactly like a native speaker, you know, just don't worry about it. The only way to improve your speaking is to build your confidence and keep practicing it. Making a mistake is completely natural, you should not feel embarrassed about it.

Q Some students always feel stressed about their study especially when they compare themselves to others who are more advanced and more confident to speak in another language, is there a way to change such negative emotions?

A If you're stressed and nervous, the speaking test will be difficult for you, you'll feel more nervous and might not perform as well as you could because of the panic or fear. Yeah, so, what do you have to do is to separate the language you use from personality. Some people, by nature, are more extrovert than other people, so I think that if someone is not able to participate as much as he could, it's probably not language, because most of you can speak clearly and fluently, you need to build your confidence by practicing more, I don't mean by studying, I mean actually by speaking, actually by listening and by reading. In terms of building your confidence, if you expand your vocabulary for all these types of topics and of course also your major, that will help you build your confidence and also help to practice reading in English. You can't change your personality overnight as something probably will change you a bit as you get older, as you got more experience and knowledge, you probably be more confident. My advice for you is to find more time to practice in English, you can listen to pop music or you know, watch some TED talks, watch the news on CNN or watch the business news on BBC, they are available on television, and also podcast on the internet. That may be my suggestions.

ROUND 1

用三个词形容自己的大学生活

Essay / 程序 / 熬夜
 安静 / 舒适 / 适度压力
 幸运 / 迷茫 / 改变
 充实 / 精彩 / 秃头

ROUND 2

大学同学对你的第一印象是？

能说会道 (帅???)
 长得有文化 (?)
 “哇, 你的汉语说得这么好”
 可爱体贴蛤蛤

ROUND 3

空闲时间最喜欢做的事？

打游戏
 夜晚逛校园
 和家人同学聊天
 刷朋友圈
 听音乐

提问？ 回答！

爱浙人 QUICK ROUND

◎ 何康宁

快问快答 >>>>

ROUND 5 每天最期待的事？

期待明天会更好！
 期待食堂有好吃的
 最期待傍晚的落日和云霞
 外卖到了

ROUND 4

学校里最喜欢的地方？

湖边栈道尽头
 寝室 / 图书馆
 打扫过的房间
 钟楼下的湖畔

ROUND 6
一直想做但是还来不及做的事？

学尤克里里

找个女朋友

成立一个社团

露营看星空

社团工作

没有同伴的周末

ROUND 7
大学里最孤单的时刻是？

晚上一个人从图书馆
走向寝室的时候

想家的时候

ROUND 8
进入大学后最大的变化是什么？

找到自己需要什么
而不是需要什么

能很从容地接锅

自己规划时间，
在挣扎中学会自律

打字速度变快了

打扫房间

ROUND 10
目前最想作出的改变？

早点睡觉!!!
很迫切!!!

独处

ROUND 9
上大学后曾经讨厌后来却慢慢喜欢上的事情？

运动

粉红色

变酷，变得不在意别人的看法

改掉拖延症

现状很好啊

小组讨论

在面条里加辣椒

ROUND 11

大学里最值得花时间和精力做的三件事？

学习 / 恋爱 / 做公益

跟有趣的人交流
自主学习
打扫房间

去巴厘岛
(旅行时找到女朋友)
进院生会 / 换寝室

读书 / 运动 / 出去走走

答应表白 / 好好养生 /
筓路蓝缕创立红十字会

锻炼成熟的心智和强大的心脏
找到热爱的事业或发展方向
用心经营和身边人的关系

加入学生会
加入天文社
双十一早睡

选择这个专业
选择这里

ROUND 12 大学阶段
做的重要的三个决定？

致谢

审核指导

陈晔、黄晓涵

文字创作

中文刊名：罗凯闻

中文刊名书法：欧阳宏伟

英文刊名：Sue Welburn

主编寄语：欧阳轩

封面设计：黄俊量、劳钲凯、陈飞妤

新闻采撷：梁秋实、孙鑫栋、程宇琛、张逸为、TAN Jia Wei、Adele Valeria、郑璐文、王一凡、卢瑜、何康宁、赵予晴、李菁菁

目录制作：陈飞妤

设计排版

陈飞妤、李想、俞梦怡、Winnie、朱泓健、王玮健、叶凌源

整合编辑：陈飞妤

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主编寄语：在此，由衷感谢以上为院刊创刊付出心血的爱浙人们和大力支持本刊的各位老师，衷心感谢 ZJU-UoE 联合学院对本刊设计、发行的大力支持，是你们的努力孕育了本刊，并让它鲜活耀眼起来。很遗憾只能在此给予各位创刊人一句寡淡的谢谢，这份粗放的致谢名单也难以体现出每位的辛劳。也真挚地期许，创刊一事，其间所遇精彩及挫折都将化作各位今后人生中熠熠闪光的片段。



院刊团队

主编：欧阳轩
责任编辑：陈飞妤、梁秋实

新闻部

部长：梁秋实

成员：孙鑫栋、程宇琛、张逸为、TAN Jia Wei、Adele Valeria、郑璐文、王一凡、卢瑜、何康宁、赵予晴、李菁菁



美编部

部长：陈飞妤

成员：李想、俞梦怡、Winnie、朱泓健、王玮健、叶凌源

* 注

《爱浙人》是N10第一本完全由学生自主编辑的刊物，
为保留这份初探和尝试，

我都吝惜去改动任何遣词造句

只为那份真实、稚朴和美好；

在用文字呈现的斑斓世界里，

有他们的精彩、智慧和梦想，

还有光影里

很多个温暖而又值得记忆的片段：

希望N10₂积聚起立志改变未来的勇气和力量，
希望N10₃因为你们而成就一段传奇，

而这本院刊我想应该会是最好的见证。

——
陈晔

