



2024

**Tsai Hsing School
Summer Camp
in USA**

0703 - 0726

Memorial Book

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MENBERS

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教師	張東勇	Chang
	劉群光	Tim
	顏俊雄	Yen
	李秉容	Wendy
	陳怡臻	Irene
學生	蔡宗軒	Antonio
	王林喬	Joey
	張昌豫	Patrick
	吳在晟	Derek
	邱宥傑	Jasper
	林佑潔	Dora
	徐葦庭	Wendy
	陳虹樺	Phoebe
	蕭子淮	Charlie
	王泓曄	Charles
	吳柏毅	Josh
	康皓	Howard
	簡忻凌	Celine
	曾立荃	Luken
	許芯綾	Claire
	陳俞希	Chloe
	王薇甯	Vera
	趙子妍	Sunny
	蔡承軒	Bruce
	黃羽嫣	Yuyen
	謝品樞	Susan
	楊青岑	Rosemarie
	劉姿妍	Claire
	鍾詠丞	Tank
	徐睿遠	Ryan
	陳宥廷	Ethan
	俞俊茵	Annie
	高嘉妤	Dora
	許愷倫	Karen

再興小學

教師	葉晶瑩	Doris
	陳錦華	Claire
	黃秀娟	Patty
	廖君維	Wanda
	李勇諭	Braven
學生	郭展睿	Ray
	謝承喆	Eason
	王湘晴	Ava
	徐語彤	Alice
	于珊如	Ivory
	蔡享叡	Ryder
	黃奕洸	Vito
	易祁	William
	朱唯寧	Nita
	徐子翔	Sean
	劉圻學	Richard
	張恩齊	Liam
	古紹希	Sam
	鄧宇鈞	Jim
	徐子晴	Jean
	田芸嘉	Rena
	周柚彤	YuTung
	張尊惟	Santa
	高碩廷	Tim
	王語銓	Jasmine
	蘇晏瑜	Wells
	高珮慈	Chloe
	邱薰漾	Mina
	杜承柔	Nuna
	鄒詠恩	Joanne

愛德菲大學

教授	Aaren Freeman
	Ryan Wallace
	Matthias Foellmer
	Susan Kilgore
經理	Lorena Herrera
舍監	Thu Thu
助教	Gabriela Castillo
A 組	Manavjot Singh
	Isabella Migani
B 組	Fnu Pallavi
	Alexa Able
C 組	Tuya Munkhзориг
	Samuel Brodsky

美國遊學團出發～！從台北到紐約

今天是個風和日麗、非常適合郊遊的大好日子，參與遊學團的 54 位學生以及 10 位老師於下午兩點半準時在校園內集合完畢，在司令台前的青色草坪上與家人們拍了一個大團照後，中小學師生分為三組人馬，搭乘三台遊覽車前往桃園機場。本次集合提早了半小時到機場 Check in，避開了尖峰時間的人潮，在機場大廳，我們也不忘在離開台灣的前一刻再拍張團體照。從報到到通關非常的順利，隨後登上長榮 BR-032 晚上 19:10 的班機正式告別台灣，出發前往美國紐約。



飛機飛行的很順利，平穩的抵達紐約甘迺迪機場，比預定時間提早了十分鐘左右降落，但因過海關時，遇到海關下班時間，窗口關閉了近乎一半，所以過關時花了比較久的時間，在行李提領區等到大家提領行李出來的時候，已經十一點半了，董事長爺爺早已在機場門口迎接我們，看到我們平安無事抵達美國紐約，董事長爺爺才放心的目送我們大家離開機場。老師們大約在 7/4 凌晨 1 點安頓學生們進入飯店寢室，再到每一位同學的房間一一叮嚀明日的注意事項，等到所有老師回到自己的房間也接近凌晨 2 點了！



好玩又好逛的大型複合式娛樂購物中心—美國夢

第一天我們來到了在美國當地閩家大小都會喜歡的「美國夢」，是董事長在去年特別推薦的景點，它是全美第一大的複合式娛樂購物中心，相當於台灣的義大樂園，但它的規模之大，園區內就涵蓋了數個大型主題樂園，其中最受歡迎的是尼克宇宙主題樂園、夢工廠水樂園以及北美第一座室內全年無休的 Big Snow 大型滑雪場。與去年一樣，我們今年也決定主攻尼克宇宙主題樂園，因為它實在是太刺激又好玩了！雖然是一個親子樂園，但其中許多遊樂設施的刺激程度不亞於美西的六旗樂園，在其他園區內有超過 450 家以上的商店可以逛，是一座會想讓人流連忘返的複合型遊樂園購物中心。

我們從早上 11:00 開門待到下午 5:00 才離開，看到大家的手上握著的戰利品，真是收穫不少，滿載著愉悅的心情以及疲憊的時差結束了「美國夢」的探險之旅，今天只是為了我們接下來的三個禮拜的行程，小試身手，不管是向服務人員問路也好、練習自己去買午餐也好，甚至是詢問購買商品的價錢有沒有折扣也好，練習著融入美國當地的生活，也希望接下來大家在這趟的美國遊學之旅都能有美好且豐盛的收穫！



晚餐我們則是享用了在美國第一頓的自助餐，食材非常豐富，聽說因為今日是美國國慶日，餐廳額外提供了不同於平時的餐點，大家可以依據個人的喜好，選擇自己想吃的食物，玩了一整天，想必大家都餓壞了！趕快享受一下美國當地的美食饗宴吧！

探訪美國獨立運動重要聖地—費城 & 華盛頓 DC

今日我們從紐澤西一路往南，探訪美國獨立運動重要聖地之一「費城」。

西元 1776 年 7 月 4 日，受英國殖民下的北美十三州的代表在這裡簽署了由湯瑪斯·傑佛遜撰稿的美國獨立宣言，隨後美國憲法也在此地制定。在 1790 年到 1800 年間，費城是美國的首都，而「費城獨立紀念館」即是當時美國國會的所在地。來到這裡一定要欣賞這棟以紅磚搭配白色的門窗、有著對稱性結構的喬治亞風格建築，以及在宣布獨立宣言時，敲響自由的鐘。每逢美國國慶日，紀念館周遭會有敲響自由鐘、遊行、以及放煙火等活動，非常之熱鬧，今天我們算是避開人潮，前來參觀。



離開了費城，我們繼續往南行，前往現在的美國首都—「華盛頓 DC」，由於路途遙遠，我們在中途停靠了一個休息站，休息、用餐補充體力，也瞭解一下美國休息站的服務與台灣的有什麼不同？休息完畢，繼續驅車向南前進。

來到華盛頓 DC 的市區已經是下午三點半了！我們把握盛夏的午後時光，從白宮東側的財政部，前往白宮的北側大門，緊接著來到美國國會山莊前側廣場拍張大合照！最後還有一些時間，我們先走了一個明天行程的景點「湯瑪森·傑佛遜紀念堂」來做 Ending，這裡紀念的是美國的第三任總統，為什麼美國有那麼多任總統，要特別紀念這號人物呢？原來是因為獨立宣言是他所起草兼主筆的，他是美國的開國元勳之一，第一任國務卿、第二任副總統、第三任總統，也是美國維吉尼亞大學的創始人。

隨後，我們即到自助餐廳享用晚餐。晚間我們下榻華盛頓 DC 的飯店，期待明日的華盛頓特區的文化之旅。



想了解美國文化？從華盛頓 DC 文化之旅開始

第一站，我們來到了充斥著 19 座與真人相仿的美軍雕像的區域，右手邊是一座黑色的花崗岩紀念牆，有超過 2500 幅攝影或者檔案照片以噴砂的方式呈現在牆上，這些牆由於是由黑色花崗岩製作而成，經過拋光打磨，左側的美軍雕像反射在牆上，就會出現 38 位士兵，這代表了朝鮮戰爭所在的北緯 38 度線，往前則是一個圓形的水池，以及一個雕刻著「FREEDOM IS NOT FREE 自由並不是免費的」的紀念碑，用以紀念韓戰中陣亡的美軍以及聯合國的士兵，也提醒著世人，自由得來不易。

離開了沉重之地，繼續往前邁進，我們來到了一個大廣場，左手邊是林肯紀念堂，右手邊一眼望去，則是一座長兩千多英尺的倒影池，倒映著華盛頓紀念碑，使得原本就很高聳的石碑看起來更雄偉了！進到林肯紀念堂內，可以看到左右兩個廳室碑文上記載著林肯兩場重要的演說內容，有林肯第二次就職演說以及《葛底斯堡演說》。

繼續沿著倒影池前進，會先經過越戰紀念碑，再一路往東行，就會看到第二次世界大戰紀念碑，紀念碑的左右兩個方向都各建有一個拱形塔樓，一座刻著大西洋 (Atlantic)、一座刻著太平洋 (pacific)，象徵美國在二戰中參加的大西洋和太平洋兩大戰場。



由於航太博物館是個熱門景點，人潮眾多，疫情期間，凡進入參觀的人都需要做線上預約，如果沒有預約，人數額滿即無法參觀，今年我們遊學團在出發前，即做好了預約，所以能夠順利地進去參觀，一睹美國航太科技的風貌。

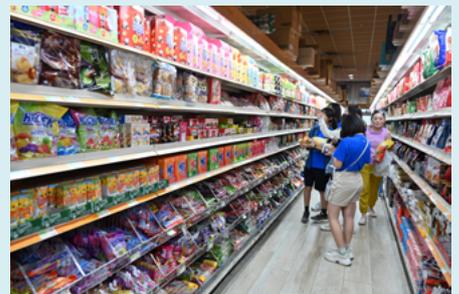
午餐則到間諜博物館附近的美食廣場用餐，用完餐，繼續展開博物館之旅，參觀了美國國家藝廊以及美國國家歷史博物館。晚餐則享用了中式的合菜，以滿足思念家鄉菜之情。



離開華盛頓 DC，向愛德菲大學前進

今天是從 DC 返回紐約，進駐愛德菲大學的日子，整個行程有兩個停靠點是可以休息、購物的地方，其一為 Cherry Hill Mall，其二則是新天地購物中心 New World Mall，在這兩個地方有充裕的時間可以做採買，讓你可以進學校之前，做好物資的補給～！

一大早即搭上遊覽車，揮別美國首都華盛頓 DC，往北移動，中午我們在 Cherry Hill 附近的亞洲風味自助式餐廳用餐，隨後到附近的 Cherry Hill Mall 逛逛，消化一下五臟府裡的食物，也順便舒展一下筋骨。回到車上，繼續往北移動，穿越紐約到法拉盛，法拉盛是個新興華人社區，有很多台灣人移民到這裡，約佔當地居民的百分之三十，可以看到滿街的中文招牌林立，但因逢周末收假時間，車潮眾多，需要額外多花一點時間，才能抵達下一個目的地。晚間我們到了新天地購物中心，這裡有超市可以逛逛，做補給品的採買，因為是華人開的，有很多我們熟悉的東西，像是美食街，有許多中式餐點的選擇，想吃芋圓、仙草、豆花、臭豆腐，都可以在這解解鄉愁喔～！



我們在晚間七點多終於抵達愛德菲大學，這次與去年一樣是住在 EDDY HALL，設施非常完備，在一樓還有交誼廳、廚房，可以煮消夜來吃～！這應該是未來兩週大家每天晚上必拜訪的地方。趕緊把行李拖進宿舍房間後，我們在大廳集合聽老師們說明在學校的注意事項，帶著興奮的心情回房洗漱、休息，期待著明天大學生活的正式開始～！



董事長也貼心的為我們準備了一些好吃的水果還有飲品～好幸福～

揭開愛德菲大學生活序幕～！

令人留連忘返的美東文化之旅暫時告一個段落，接下來我們要展開愛德菲大學的海洋生物課程囉！一大早起床，洗漱完畢，即前往 Ruth S. Harley University Center 的 Market 學生餐廳，此棟學生活動中心是於 2021 年翻修擴建的，所以內裝設備都非常的現代化、舒適、新穎，這裡有道地的美式風味自助早餐，種類玲瓏滿目，每一種搭配組合都想嘗試，但因為是第一餐，還是適量就好！



完食後，我們來到了 Blodgett Hall 的階梯教室。本次的暑期課程是由 Aaren 教授所主持，課程的開場即由他來為各位同學介紹愛德菲的環境以及未來兩個禮拜的安排。除了先前介紹的幾位教授之外，在不同課程裡也會安排多位助教 (TA)，協助我們解決各式疑難雜症，與之對話也是一個增進英語能力很好的練習機會。另外，中、小學也會各配有一個 RA 來負責協助其他校務相關的事宜。



接著就開始破冰活動了！下午則是最受歡迎的體育活動！我們將前往 Center for Recreation and Sports 校內最大的體育館，底層有三個全場的籃球場，打起球來，熱血沸騰，另外也可進行多種球類運動，此次董事長特別推薦 Pickleball 讓我們大家體驗，據說是美國目前最流行的球類運動，與桌球十分類似，是沒有桌子版的桌球，一樓則有室內的跑道圍繞在建築內側邊緣，想跑跑步的同學，如想避開外頭的豔陽，也有室內可選擇。

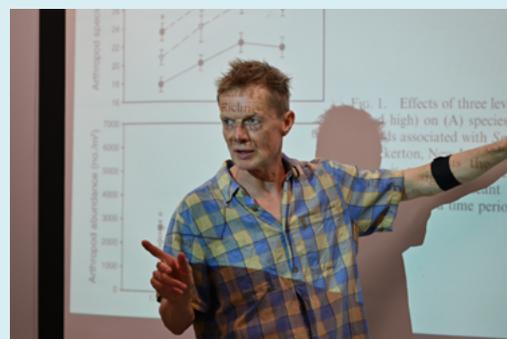
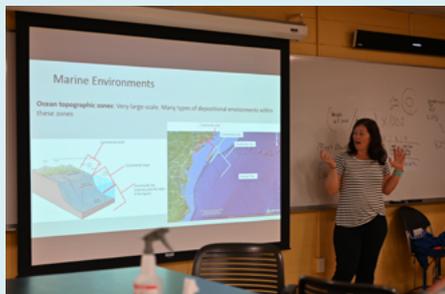
下午 Wallace 教授與 Freeman 教授也針對這次的課程主題做了完整的介紹，讓大家為接下來的課程先做暖身，晚間即來到了表演藝術課程的環節，在這個課程，是禁止老師隨班觀課的，目的就是為了讓大家能夠沒有顧忌的盡情發揮創意，來做表演內容的發想以及呈現。回到宿舍看到大家疲憊又愉悅的笑容，就知道大家在學校過的第一天是多麼的充實～！



海洋生態環境專題實驗課程 Part I

教授依據學生的年齡以及程度，將學生分為三大組：A組（5年級）、B組（6~7年級）、C組（Sea組，8~10年級）。今天的課程主要會在學校內開始進行各項專題實驗。

A組是由 Matthias 教授負責鹽沼蜘蛛實驗，分析且觀察蜘蛛捕食的行為。B組是由 Susan 教授負責河川地質觀察實驗，分析河口地質組成與生態環境。C組則由 Wallace 教授指導水質優養化實驗。下午由 Matthias 教授帶我們領略科學方法，有助於接下來更進階的課程。



課後，助教帶著我們到校園一隅做彩繪，妝點我們上課會經過的地方。緊接著進行的是體育課，可以依照自己的喜好來選擇想進行的球類活動，有非常充裕的時間活絡自己的身心。

用完晚餐後，晚間則是表演藝術課程，由百老匯專業的指導老師帶領學生進入表演藝術的殿堂，今天上課的地點是在 Performing Arts Center，有著非常專業的 Dance Studio 空間以及展演廳。



0710 海洋生態環境專題實驗課程 Part II

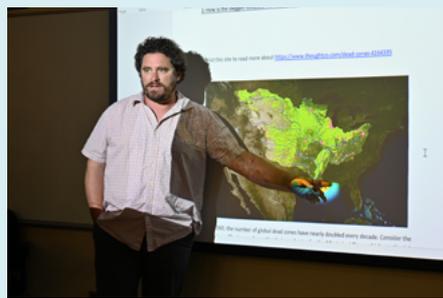
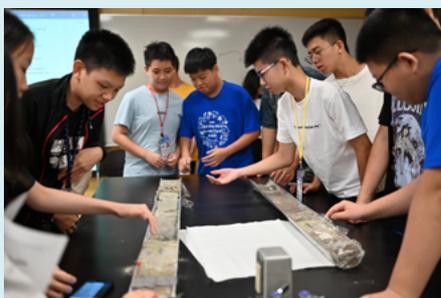
今日課程安排如下：A組，是由 Aaren 教授負責解剖牡蠣實驗課程。B組，是由 Wallace 教授負責水質優養化實驗課程。C組，是由 Susan 教授負責地質檢測實驗課程。

在解剖牡蠣實驗裡，教授帶著大家觀察水中的浮游生物、牡蠣的身體構造，以及其重要部位的功能。

在水質優養化的課程一開始則是由四張圖的故事接龍來做暖身活動，可以有任意順序來講述從圖中觀察到的水質優養化的故事，再來觀察水草在不同水質的環境下產生的變化，不管是植物本身或是水裡的成分，都會產生變化，還有吸光性的實驗，來檢測葉綠體數量，進而判斷藻類的數量。

地質檢測實驗，則是了解沉積物的形成，在桌上可以看到管狀的採樣，可以先觀察樣品哪一面是朝地面、哪一面是朝地底，拿好樣品後再回到自己的位子用精密儀器來秤重，秤重完再用篩子將不同顆粒大小的物質分層，再來做秤重以及觀察、分類。

在實驗課結束後，則由 Susan 教授主講冰河變遷課程，講述冰河冰山是如何構成的，在全球二氧化碳排放過多造成暖化，冰川消融進而導致海平面上升，若不改善，許多地方將在多年後沉沒在海裡。透過網站即可查看 N 年後預測的淹沒狀況。

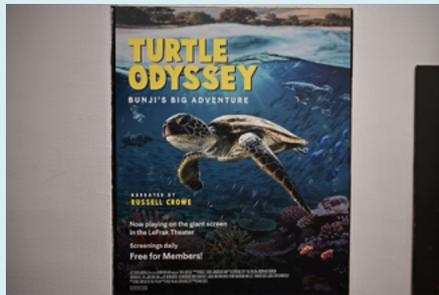


下午課程結束後，則由 TA 帶領我們玩團康猜謎活動，有許多有趣的主题，包含英雄聯盟、迪士尼、食物...等，非常考驗大家的記憶力，在電影裡角色的特色、說過的話，都要記得才猜得出來，但大家也還是玩的不亦樂乎，很快就知道誰是電影通了～！續接在團康活動後的則是與昨天一樣，有體育活動以及表演藝術課程。



參觀博物館驚魂夜之場景「紐約美國自然歷史博物館」& 到 Barclays Center 一睹 WNBA 女籃風采

今天愛德菲大學的教授帶我們去紐約的 American Museum of Natural History 美國自然歷史博物館，簡稱 AMNH，也是「博物館驚魂夜」的拍攝場景，就在中央公園的旁邊。博物館有地下一層加上地上四層，總共五層樓，展覽廳主要在一到四樓，其中有幾個較為著名的展覽一定要朝聖一下：第一個是在二樓大廳有一個挑高約三層樓的 1:1 巨型恐龍標本，近距離觀察，可以感受到牠給人的壓迫感。（但要注意，那裏是大廳，有圍欄圍著，出去了，等於離開博物館了，需要有票才能再進博物館內，所以盡量不要出圍欄）第二個則是 Ocean Life 海洋生物館裡的一個巨型 1:1 大藍鯨模型，這隻是在 1925 年於美國南部海岸捕獲的大藍鯨以真實比例的模型整個掛在天花板呈現，非常壯觀。第三個則是 Pacific Peoples 太平洋民族裡面的 Moai Statue 摩艾石像，它是當地原住民建造的石像之一，是復活節島的藝術代表。再來就是四樓的化石區，有一大部份的展覽都是恐龍化石，該區域最熱門的展覽應該就是暴龍化石了！它不僅是博物館驚魂夜電影中出現的重要標本，還是世上少數幾個幾乎完整的暴龍化石。除此之外，四樓還有另一個不可錯過的就是長毛象的標本，它是屬於三點五萬年前的史前生物。B1 則是宇宙地球天文館，該區域最大特色，就是 Willamette 隕石，它是美洲大陸上發現的最大隕石、也是世界上第六大隕石。用完午餐，即先至 IMIX 大廳觀看 Turtle Odyssey，講述著 Green sea turtle 綠蠔龜的一生，從綠蠔龜破蛋而出，隨著洋流到世界各地的海洋成長、冒險，一直到成年，回到出生之地繁衍，是個非常珍貴的紀錄片。



看完了精采絕倫的展覽，依依不捨地離開此地，繼續朝向下一個目的地 Barclays Center 前進！這也是今天我們非常期待的一個活動，看 WNBA 球賽！為什麼是看女籃而不是看男籃？因為 NBA 正式賽季始於每年 10 月中，分為例行賽、季後賽兩大部分。例行賽到隔年的 4 月中結束，季後賽則是六月舉行，到暑假除非是紐約的隊伍有進決賽，才有機會看到，但票價也會非常的高昂。WNBA 的賽季則是每年的 5 月~8 月舉行，每年七月中，常規賽將會暫停數天，以便舉行 WNBA 全明星賽。我們看的比賽隊伍是 Chicago 的 Sky U.S. New York 的 Liberty，紐約的自由隊球員的基本功夫皆非常扎實，攻守非常流暢；客隊芝加哥的天空隊也不惶多讓，幾乎是五五波，隨著時間的過去，來到第二回合尾聲，兩隊為了拉開比分距離，戰況非常激烈，現場氣氛也越來越熱烈，各種表演與活動恰如其分，讓現場觀眾各個是興高采烈，歡聲雷動。



Splash Museum & 海上釣魚趣

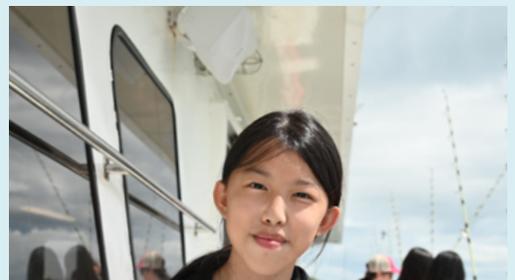
早上先在學校吃了美味的早餐後，接著由 Dr. Aaren 在 Blodgett201 教室為我們講解潮間帶的週期，以及今天下午海釣可能捕獲的魚類與特性，也補充了北美洲大西洋岸的常見魚類給大家認識，Dr. Wallace 也介紹了鄰近海域的水質優養化情形後，我們就搭乘遊覽車向 Splash 中心出發囉～！

今天的主要活動是要認識在紐約長島這區的環境保育團體 Splash，他們是如何維護這附近海域的生態的。Splash 是一個以志願者為基礎的環保組織，他們致力於改善 Long Island 下水道、海岸、海灣的品質。組織成員透過清理海洋垃圾、宣傳工作，以及針對學校的 STEM 教育項目積極履行他們的使命。自 1990 年至今，已清理當地水域超過 300 萬磅的垃圾。他們相信，有意識的行動與宣傳，可以保護當地海岸的生態環境，讓野生動物和此地的居民能夠為後代子孫帶來享受。上了這一課，也希望大家能把這樣的環保意識謹記在心，帶回家鄉。



緊接著，董事長爺爺要帶大家輕鬆一下，搭乘遊艇去海上釣魚囉～！由於我們是初學者，董事長爺爺非常細心的為我們講解釣魚的技巧以及注意事項，為了保育，海洋不被濫用，如果釣起來的魚過小，就要再放回海裡，也提出了重量為前三名者，不僅可以享用到自己所釣到魚，還可以獲得豐厚的獎金，可以猜猜，今晚會獎落誰家呢？大家使出渾身解數，不畏豔陽與風浪，興緻勃勃的開始拿起釣竿釣魚。隨著船來到了最後一個魚竿的投放點，大家的體力似乎不減反增，持續奮戰到最後一刻。這畫面真的是有趣極了！大家的臉也開始變得紅通通，提醒大家要記得防曬啊～！

在最後一個鳴笛聲響起時，進行了大結算，有保留下來的魚，全部集中至船尾，總共有五支魚，這五隻魚全部都會再回岸上實烹煮來吃，前三名則是由羽媽、芯綾、宥傑所獲得，各分別獲得獎金 50 元、30 元、20 元，恭喜以上同學～！



漫遊紐約曼哈頓第五大道 & 欣賞百老匯獅子王音樂劇

今天是週六，在學校的第一個假日，但天公不做美，早上下了一場大雨，因為假日愛德菲的餐廳是沒有營業的，非常謝謝副校長以及老師們冒雨前往早餐店替我們大家買早餐。吃完早餐後，雨勢一變小，即出發前往紐約曼哈頓市區觀光。第一站來到的是紐約公共圖書館，是美國第二大的圖書館，僅次於美國國會圖書館，館藏一共有 1600 多萬件，光是書籍就有 400 多萬冊中，是明天過後寒冬燒書的場景，裡面也有一個展覽館，展示著西方最早的活字印刷書籍「古騰堡聖經」、牛頓的「自然哲學與數學原理」以及「獨立宣言」，還有「莎士比亞」第一個對開本，因為豐富的館藏而聞名世界。

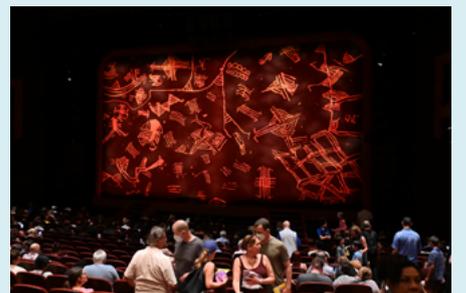
沿著第五大道一路往北，由於雨勢突然又變大了，於是我們直接進入洛克斐勒中心的地下廣場，剛好就是美國著名的咖啡店 Blue Bottle 的所在地，兩側有洗手間，可以稍做休憩。重新整裝，繼續往北移動到中央公園對面的蘋果旗艦店，這間期間店是全國唯一一間 24 小時營業的蘋果商店，如果想買蘋果相關的商品，待會可不要錯過！

離開蘋果旗艦店後，我們來到紐約必定要朝聖景點—「時代廣場」，在每年的 12 月 31 日，新聞上看到美國紐約的跨年活動，就是在時代廣場上舉行。這兒有來自世界各地的觀光客，還有裝扮奇特、花招百出的街頭藝人，人潮洶湧，大家必須跟好腳步才行！在這裡需要注意如果有人要找你合影，除非你要付錢給他，不然不要答應～！



時間算的非常剛好，拍完團體照後，接著就要去看精彩的百老匯名劇——「獅子王」囉！劇中的演員們各個身懷絕技，華麗的舞台、燈光，以及充滿特色的服裝以及道具，搭配著高潮迭起的音樂和歌聲，同學們聚精會神地欣賞，深怕一不留神錯過精采的畫面，真是一場令人驚艷的視覺以及聽覺的藝術饗宴。在謝幕時，大家還意猶未盡，若有機會再來紐約，一定要欣賞其他部經典音樂劇！

欣賞完音樂劇後，我們來到法拉盛的一間中式餐廳用餐，一下車董事長、徐董事就在餐廳門口迎接我們，進入餐廳後，即坐下來開始享用中式的美味餐點，菜色真的非常的豐富，大家也吃的非常開心。



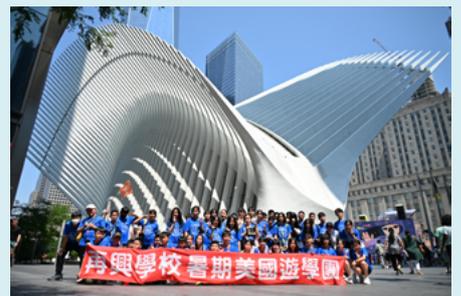
紐約曼哈頓 Downtown 市區觀光 & 美國 MLB 職棒大聯盟：大都會 VS 洛磯

吃完熱騰騰現做的 Dunkin' 早餐後，即出發前往紐約曼哈頓下城區，從最南端的巴特里公園開始遊覽，一下車，在我們右手邊一棟不起眼只有一個門的白色建築，是布魯克林砲台公園隧道的「通氣塔」，也是在著名 MIB 星際戰警電影中，隱密又低調的外星人出入境管理大廈以及 MIB 星際戰警的總部的場景，左手邊即是砲台公園了，前進砲台公園，此公園是因為一座古老砲台而聞名，為英國殖民時代的產物，曾經對抗過英軍，前往河邊後，我們遠眺自由女神，一睹女神的風貌，旁邊有個象徵美國積極精神的青銅老鷹雕像，爪子上抓著桂冠，用以紀念第二次世界大戰間，罹難在大西洋的 4000 多個士兵。與之合照後，往北再往歷史悠久的滾球公園移動，在旁邊可以看到熱鬧的人群之中有一座巨大的金牛，據說摸一摸牠，可以為自己帶來好運，獲得財富！

繼續往前看見了一位小女孩手插著腰面對著紐約的證交所，形成了強烈的對比，原來是無畏女孩，據說這座女孩雕像原本是因為一場招募活動設立在金牛的前面，但因為她的形象有著女性堅韌的象徵，已經感動了世界各地人們的內心。所以經過市民的請願，已核准為永久設立，於 2018 年末國際人權日，遷至新址紐約證券交易所正前方，正式落戶。證交所斜對面則是聯邦廳國家紀念堂，前側是美國第一任總統華盛頓的雕像，用來紀念美國第一任總統就職之地—前聯邦廳（Federal Hall），美國權利法案也是在此制定，現在的建築是後來改建的海關大樓，即坐落於前聯邦廳的位置。

感受了紐約悠久的歷史文化後，我們來到了 Oculus 世界貿易中心車站，是由人稱「建築詩人」的西班牙建築師聖地牙哥·卡拉特拉瓦設計，設計概念稱為「Oculus」（靈魂之窗），靈感是從一位孩童手中釋放鴿子而來的，從側面看起來就像鴿子展開雙翼，由建築內部底層往上看，則像靈魂之窗「眼睛」。

從車站往上走，旁邊則是 911 紀念公園，為雙子星大樓的舊址，兩棟樓之間的建築則為「911 國家紀念博物館」，用以紀念 2001 年 9 月 11 日遭受伊斯蘭教蓋達組織恐攻的罹難者。



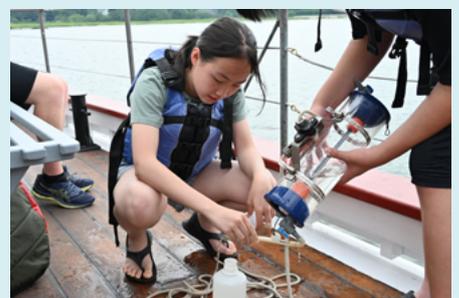
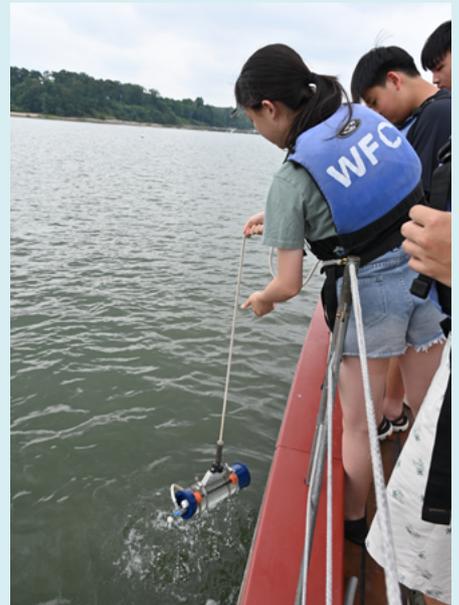
接著離開下城區，我們來到了花旗球場，準備享受美國人對 MLB 職棒大聯盟的狂熱！這場是紐約大都會對上洛磯，同學一邊看精彩的球賽，一邊也享用球場中的美食，同時體驗美國人在棒球活動方面的熱情與文化的差異。

晚間，董事長爺爺特別招待我們去高爾夫球俱樂部享用豐盛的美食，參觀了非常美麗的高爾夫球場，為我們的紐約 Downtown 之行做了一個完美的結束。謝謝董事長爺爺～！



牡蠣灣野外調查活動及專題實驗課程

今天是 C 組是第一次外出到牡蠣灣做野外調查的活動，同時，校內的專題實驗課程也如火如荼地進行中。在出發之前，由 Dr. Susan Kilgore 介紹海岸侵蝕的種類、形成原因與預防對策的課程來做為暖身。隨後，即展開此次的野外調查活動，我們會到三個樣本的採集點，分別要採集牡蠣，以及水質優養化檢測實驗。由 Aaren 教授負責牡蠣採集的實驗，帶領學生學習如何以游標尺做牡蠣尺寸的測量；由 Wallace 教授帶領學生水質優氧化的檢測，優養化與否可以藉由觀察水中的浮游生物的種類以及藻類的多寡來判斷，檢測的項目簡單分為：能見度、水溫、酸鹼值、鹽度、氮鹽與磷鹽濃度…等。這是今年新規劃的課程，希望能將愛德菲的海洋生態課程連貫起來成為一個小專題，探討牡蠣的生長與環境因子的關係，尤其是優養化的影響，這也是兩位教授本身研究的一部分。對於同學而言，除了學習如何利用科學方法探討環境議題，也更瞭解生物與環境的關係，以及人類造成的優養化如何影響生物。



B 組則是上由 Matthias 教授主持的蜘蛛行為觀察實驗，以捕食方式來進行觀察，主要分為兩種：有用結網來捕食獵物的金蛛，以及以優越的移動速度以及堅硬的螯肢或鋒利的尖牙來捕食的狼蛛。結網的金蛛適合在高處，像是樹上，且環境變化較小的地方。移動速度快的狼蛛則可適應變化較大的地形，例如有漲退潮的岸上或沼澤上。

續接在專題實驗課程後的則是戶外的體育活動，可以活絡筋骨、舒展身心靈，以及有趣又好玩的表演藝術課程。晚間還有顏老師準備的小 Party，用來討論接下來的成果發表，以及暖暖五臟六腑。

Sheepshead Bay 賞鯨

由於我們今日的主要課程是校外教學—賞鯨，Wallace 教授特別為我們準備了海洋哺乳類以及鳥類動物的介紹，也讓我們認識常出沒於紐約近郊的鯨豚有哪些，還有出沒的位置的紀錄分布。如此一來，我們在賞鯨時，對於看到的動物就不會那麼陌生了～！接著我們就往 Sheepshead Bay 出發賞鯨囉！

紐約這座城市文化底蘊非常的豐厚，近郊的海域上的生態也維護得相當完善，前往附近海域的中心，鯨魚已在此成群結隊的歡迎我們的到來！真的是非常的幸運！這次有許多鯨魚寶寶吃飽了出來透透氣、呼吸。船長也很努力的為我們尋找鯨魚的蹤影，時不時通報鯨魚可能出沒的方向。果然不負眾望，鯨魚此起彼落的在船周遭出沒，在船身的右側才看到一隻鯨魚探頭，另一側又有呼喊聲，大家手上的鏡頭也是隨之轉向，深怕錯過任何一個精彩畫面。今天的天氣也沒讓大家失望，是個大晴天，海風吹來非常舒適涼爽，在出海時，船頭更成為了大家的海盜船遊樂設施，想要享受乘風破浪的感覺，可以集中到船的最前端來體驗，真的是非常的刺激～！



來到晚間用完晚餐，回到宿舍繼續準備簡報，看到大家認真討論的模樣，成果發表時，一定能有很好的表現！

此時，董事長爺爺與張董事 Steven 出現，也非常貼心的為大家又帶來了豐盛的水果點心，這次的水果有黃桃、無子葡萄、櫻桃，為我們這幾天的外出活動的疲憊身軀補充營養，感謝董事長與張董事對於我們的照顧～！

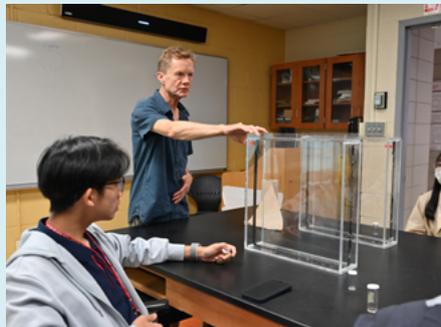


海洋生態環境專題實驗課程 Part III

今日課程安排如下：A組，是由 Wallace 教授負責水質優養化實驗課程。B組，是由 Aaren 教授負責解剖牡蠣實驗課程。C組，Matthias 教授負責鹽澤蜘蛛覓食行為實驗。

Matthias 教授講到，生物間是依據食性關係的食物鏈所組成，可以分為生產者、初級消費者、次級消費者...，當生產者數量眾多時，就會吸引初級消費者的出現，以此類推。當高級消費者增加到一定的量時，低級消費者甚至是生產者即會開始減少，減少到某種程度時，高級消費者也會跟著減少，是層層影響。介紹完基礎理論後，則開始進行令人驚呼連連的「蜘蛛覓食行為觀察與實驗」。

首先登場的是「狼蛛」，狼蛛是以高速的移動力、敏捷的跳躍能力，以及鋒利的尖牙、螫肢為優勢，來捕獲獵物。我們用小蟋蟀來觀察其捕食的行為，當小蟋蟀接近，狼蛛直接跳躍到其身上，並用尖牙將蟋蟀咬住，將毒液注入。由於強大的咬力，獵物被注入毒液後，更是無法掙脫，待毒液發揮功效後，狼蛛就可以開始享用一頓蟋蟀大餐。實驗結果大致符合預期，大部份狼蛛遇到蚱蜢直接迅速獵食，但也有少數狼蛛始終無動於衷，這也說明實驗樣本數量的重要性。接著「人面蜘蛛」登場，牠們一開始就被裝在透明立方體盒子內，靜靜地待在裡面，這次要餵食的，是比較大的蚱蜢，教授要大家要很小心的將蚱蜢甩到網子上，當人面蜘蛛發現了網子上有獵物被黏住想掙脫而震動，則會快速的跑過去吐絲，將獵物以蜘蛛絲纏起來，纏繞好後，將獵物注入毒液後，會將其搬運到比較牢固的網子位置，等待期麻痺後、或是肚子餓時，再來享用大餐。經過蜘蛛覓食策略的實驗，讓同學們對科學方法的觀察、假設、設計實驗、實驗結果的推論等步驟也更佳的了解，也建立了做實驗時嚴謹的態度。



課後，Aaren 教授為我們總結了牡蠣的課程，也介紹了牡蠣灣的整個牡蠣養殖計畫。從 2019 沒有牡蠣，到現在超過 25 萬隻，目的就是要改善水質優養化情形。接著為戶外的體育活動以及表演藝術課程，明天就要做戲劇表演的成果發表了！大家是不是都很期待呢？



海洋生態環境專題實驗課程 Part IV & 戲劇表演成果發表

前晚下了一點雨，為盛夏豔陽降溫了許多，享受早晨清涼的微風，在餐廳填飽肚子後，即往實驗室出發。今天是在學校上實驗課程的最後一日，意味著在不久的兩天後，就要離開愛德菲大學了～！但我們還沒有心思想這些，因為大家正如火如荼的準備今晚的戲劇表演成果發表會以及海洋生態環境專題實驗課程成果發表會！

上午的實驗課程，各個教授們準備了非常有趣又特別的課程，希望我們能學到海洋生態環境的知識，並擁有深刻的體會與印象。第一節課由 Matthias 教授談論有關鹽沼地形，為我們介紹鹽沼分布的地區、生物在鹽沼地形生存的挑戰、鹽沼的基本類型、植物和動物如何適應鹽沼環境、全球分佈的區域與規模、受到的威脅和解決的方案，原來在鹽沼這麼不利於生長的环境，竟然有生物能夠適應並生存於此，真的是讓我們大開眼界。

下一節課則分組進行海洋生態環境相關的課程，課程安排如下：

A 組，是由 Matthias 教授負責鹽沼昆蟲觀察實驗。

B 組，是由 Susan 教授負責的砂石畫課程，認識砂石形成的環境因素後，即開始進行手作活動，將砂石、泥土依據顆粒大小、顏色來做區分，分別在小卡上以白膠黏上沙土做出砂石畫，並標示該砂土的相關資訊。

C 組，是由 Aaren & Wallace 教授牡蠣解剖實驗課程 & 海水水質檢測、優養化檢測總結，一開始介紹牡蠣的身體構造，並讓我們能夠將牡蠣放大 100 倍來觀察，由於還是活體，可以看得出牠的心臟還在跳動，再來將牡蠣的鰓切片，用高倍顯微鏡觀察鰓上的有機體，觀察到的不僅有藻類，還有蜉蝣生物。接著就是總結這幾天水質優養化檢測的結果了，Wallace 教授也很細心的為我們說明如何依據我們的實驗目的，將大量的數據以表格來做統計、分析，並設計、調控到最適合的呈現方式。

戲劇表演成果發表會大家使出渾身解數，將身體各種動作與表情發揮到最大極限，各組人馬互相較勁，演出的內容更是越來越精彩，最後大家一起上台，為觀眾們下台一鞠躬後，完美的結束了這場盛大的演出。

明天從早上到下午一整天都會待在外面，我們要跟著 Operation Splash 環保團體到 Jones Beach 淨灘，所以老師們今天也特別叮嚀大家行李一定要打包好～！



SPLASH 淨灘 & BBQ & 學習成果發表

在出發前往 Jones Beach State Park 之前，Aaren 教授為我們介紹了「海洋環境中的生物」，在海洋的環境影響生物生長的因素有很多，其中最重要的就是溫度以及陽光，海中溫度過低生物將無法生存，沒有陽光，海中的藻類無法行光合作用製造氧氣，以及海洋垃圾對於生態的浩劫。Wallace 教授則帶我們了解優養化的成因，然後分析了去釣魚的鄰近海域以及賞鯨的鄰近海域所做的實驗數據。上完課即搭乘遊覽車出發前往淨灘地點。

這次是要搭乘小艇前往附近的沙洲、鹽澤進行淨灘的活動，主要是將環境難以自然分解的垃圾帶走，也是我們近距離觀察沙洲、鹽澤地形生態的一個機會。小艇分批將我們載到對岸的沙洲上，下船即開始做地毯式的搜尋，但因為太乾淨了，導致搜尋到的皆是一些天然的垃圾，像是看起來像塑膠的物質，老師要我們猜猜這個是垃圾還是有機物，結果是被曬乾的海草，沒有一個人猜中！這些有機物被大自然分解後，也會轉化成養分，滋養附近的生物，就不多做清理了～！但也有人蒐集到了一大包，可想而知，他應該是做了大範圍的搜索，才有這樣的成績！也提醒各位，在蒐集垃圾的同時也要注意安全～！

當我們下船，回到岸上時，遠遠就聞到香氣四溢的 BBQ，原來是當大家在淨灘活動時，張董事和副校長在營地為我們大家準備豐盛的 BBQ 大餐，搭配生菜與番茄，還有清涼的西瓜與冰棒可以盡情地享用，真的是超級幸福的～！



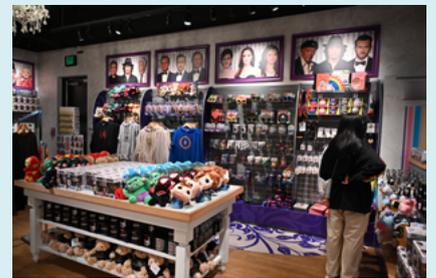
晚間回到學校，來到了宴會廳，是我們整個遊學活動的重頭戲，今晚我們要在美食饗宴中，做學習的成果發表。



搭機前往奧蘭多之眼 & Disney Springs

今早六點整從飯店出發前往紐約甘迺迪機場，搭機飛往佛羅里達州的奧蘭多機場，抵達時已過中午，一出機場，馬上強烈地感受到佛羅里達州的熱情，這裡夏季屬於較為濕熱的氣候，跟台灣的墾丁還滿相似的。

隨後，我們將展開後半段的遊樂園之旅，填飽五臟廟，第一站先來到了奧蘭多的地標－奧蘭多之眼，為一座高達400英尺相當於40層樓高的摩天輪，底下則是遊樂場、水族館，以及杜莎夫人蠟像館，周遭則是有許多充滿熱帶風情的特色攤販。由於進飯店之前還有一些時間，我們則去了附近的Outlet逛逛，也比較可以知道最後一天在Woodbury的Outlet時，有哪些東西可以幫家人看看。



最後，再驅車前往 Disney Springs，逛逛迪士尼主題的商店，晚間九點鐘還有無人機燈光秀可以看，真是令人大飽眼福。為了儲備體力，今日我們提早回飯店盥洗就寢，明日才有精神能盡情的暢遊迪士尼樂園的遊樂設施！

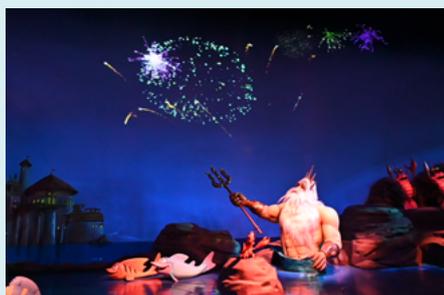


遨遊迪士尼奇幻世界

Walt Disney World 美國最著名的迪士尼樂園 Magic Kingdom Theme Park！位於美國奧蘭多的迪士尼樂園是全世界最大的迪士尼樂園，整座樂園佔地有 12,200 公頃，各種刺激遊樂設施、迪士尼經典場景及科幻或童話冒險旅程應有盡有，有著老少咸宜的各項設施，讓所有人都能融入迪士尼的夢想世界，想要追求冒險刺激的同學，可以去玩太空山雲霄飛車、火山歷險，甚至是最新的 Tron 創世紀光速摩托車，而較為靜態的活動從劇場表演、情境式的鬼屋、主題世界，到遊行以及夜間煙火皆可讓大家做選擇，玩累了還有各式風味的餐廳有美食可以大快朵頤，以及禮品店可以逛逛。



最後在精彩的煙火秀下為今天畫下完美的句點，相信今晚大家都帶著滿足的笑容進入夢鄉吧！明天我們則要進入電影的世界做冒險囉！



環球影城—充滿驚奇的冒險之旅

環球影城分為三大園區，一為 Universal Studio Florida，二則為 Universal's Islands of Adventure，三則為水上樂園的 Volcano Bay，我們這次要玩的是 Universal's Islands of Adventure 冒險島樂園！這是三個樂園裡最為刺激的樂園，如果你喜歡追求刺激，喜歡科幻冒險且喜歡挑戰自己對於刺激的底線，一定不能錯過侏羅紀世界的雲霄飛車 (VelociCoaster) 或是於哈利波特的魔法世界的海格的奇獸摩托車冒險 (Hagrid's Magical Creatures Motorbike Adventure) 或是漫威的無敵浩克雲霄飛車 (The Incredible Hulk Coaster)。



最令 HP 迷期待的是位於哈利波特活米村園區，搭著海格的奇獸摩托車冒險，彷彿真的進入了哈利波特魔法世界裡，體驗與夥伴們在禁忌森林騎著飛天摩托車，遇見巨大的怪獸，奮力脫逃的驚險過程，十分刺激又極具速度感。來到霍格華茲的世界，一定要喝喝看他們的奶油啤酒，雖然名稱有啤酒兩個字，但裡面是完全沒有酒精的成分，小孩子也能夠喝喔！

綠巨人浩克雲霄飛車也是一個不容錯過的設施，是漫威系列屬於比較大型的遊樂設施！跟迪士尼樂園，甚至是 American Dream 比較起來，這裡的雲霄飛車類型的遊樂設施，軌道更長、速度更快，就算是排隊要排比較久，但在遊玩後也是覺得非常的值得。

歡樂的時光總是過得特別快，一下子就到了傍晚日暮時分，大家便帶著愉快又有幾分不捨的心情，以及大包小包的「戰利品」回到旅館休息。



參觀 NASA 甘迺迪太空中心 & 搭機返回紐約

今日來到了位於美國東部佛羅里達州東海岸的梅里特島上的 NASA 甘迺迪太空中心，成立於 1962 年 7 月，是美國國家航空暨太空總署進行載人與不載人太空飛行器測試、準備和實施發射的最重要場所，此中心也是用於紀念對美國登月任務有推動作用的已故美國總統約翰·甘迺迪。

一來到現場，我們即前往遊園車站排隊，參觀火箭發廠基地，以及研發中心。

近年來，國太空總署 NASA 選定了三間民間企業作為最新人類登月計畫—「Artemis 登月計畫」的合作開發對象，包括貝佐斯的藍源公司（Blue Origin）、馬斯克的太空探索科技公司（Space X）以及美國應用科學與資訊科技公司（Dynetics）等，預計於 2024 年登上月球，持續探索太空的更多可能性。此計畫是自阿波羅計畫以來，NASA 首度為人類登陸月球提供直接資金，且由私人企業協助發展計畫。NASA 和三家民營企業簽訂了為期十個月的首期合約，各家系統經評估後，最終會由優勝者拿下登陸月球的完整合約。



參觀完基地，則進入模擬火箭發射的塔台，了解整個火箭發展史，體驗火箭發射的過程。

由於蘇聯於 1957 年搶先發射全球的第一顆人造衛星，掀起了強國之間的太空競賽，又於 1961 年，蘇聯成功的將太空人送上外太空飛行，讓美國備感壓力，美國總統甘迺迪於隔年發表了知名的演講，在演講中留下了歷史名言 “We choose to go to the moon.”，期許美國在未來的十年之內，不僅要將太空人送上太空，還要登陸月球，實在是一場振奮人心的演說，也促成了阿波羅計畫的開始。為了實施阿波羅登陸月球計畫，有 40 多萬人參與，耗資了 250 億美元，相當於今日的 2000 億美元。

經歷了多次的失敗，終於在 1969 年執行阿波羅 11 號計畫時，成功讓三名太空人升空，也成功的登陸月球。任務指揮官阿姆斯特壯是第一位下太空艙踏上月球的人，隨後有感而發，發表了曠世名言：That's one small step for a man, one giant leap for mankind. 這是我的一小步，卻是人類的一大步。的確！為了走這一步，耗費了龐大的資源，真的是非常不容易！

了解了美國的太空發展史，接著我們就要結束這趟奧蘭多遊樂園之旅，搭機返回紐約了～！



Woodbury 購物中心大血拚，準備回台～

來到了遊學的尾聲，一定要安排一下 Outlet 的行程，為自己也幫家人帶上伴手禮回國。所以我們來到了 Woodbury Outlet 來做 Shopping，它占地面積超過 72,000 平方米，共有 220 家零售店，是世界上最大的暢貨中心。商品玲瓏滿目應有盡有，購物的時間也非常的充裕，今天從早一直到晚餐前，全部都是購物的時間，可以慢慢挑選。

一進 Outlet，大家就開始擬定了購買的計畫，在 Food court 裡有個遊客資訊中心，可以在那裏拿到整個購物中心的地圖，以及商家資訊，旁邊也有洗手間，是個休憩的好所在。拿到了地圖，把想去的商店圈起來以後，可以依照遠近、自己對於品牌的喜好，來去選擇優先順序，規劃路線，如此一來，可以省去非常多的時間，也可以避免因時間上的安排，所造成的憾事。



晚間集合時間，可以看到大家手上大包小包的戰利品，收穫滿滿。為了搬運這些買來的商品，大家應該是卯足了全力，餓壞了～！我們即刻前往先前在法拉盛吃過的餐點非常美味的中式餐廳，入座不久，董事長也來到了餐廳，與我們共享回台前的最後一個饗宴的喜悅，讓這趟旅行有個圓滿的結束。

隨後與董事長告別後，就驅車前往 JFK 甘迺迪國際機場，搭機返台，回到想念已久的家～來到機場，有個意外的驚喜，原來是 ThuThu 跟 Tuya 特別來機場為大家送機，她們帶著小小紀念品送給學生，學生們也非常感謝她們在學校的照顧，依依不捨的互相道別。

這次回台非常幸運～！前兩天因為颱風而放了兩天的假，我們剛好在颱風走之後回來，所以一路上風雨無阻，只有遇上班機延遲一個小時，其他一切正常，也算是順順利利的回到了台灣。



2024 暑期美國遊學愛德菲大學課程簡介

2024 Marine Science Summer Camp at Adelphi University

Activity overview

- 1.Lecture: 4 professors took turns giving lectures based on their expertise in Blodgett 201 lecture hall. A total of eight lectures were given.
- 2.Lab Class: 5 rounds of lab classes were arranged and each group of students took turns participating in five interesting experiments led by the four professors.
- 3.Field Work: The senior students went on a field work at Oyster Bay with Dr. Freeman and Dr. Wallace to collect data for their research on oyster and eutrophication.
- 4.Field Trip: 5 field trips were arranged, including visiting the American Museum of Natural History, SPLASH museum, going fishing, whale watching, and beach cleaning with SPLASH.
- 5.Theater Workshop: Students attended theater workshop in the evening and performed a short skit on July 18th at Olmsted Theater.
- 6.Recreation and Sports: Students played basketball, badminton, volleyball, and pickle ball in the afternoon at the gym and the Rose Garden Lawn.
- 7.Banquet and presentation: On July 19, students gave a presentation in groups to reflect on what they had learned throughout the two-week camp.

Schedule

	7/8 Monday	7/9 Tuesday	7/10 Wednesday	7/11 Thursday	7/12 Friday
Morning	Orientation	Round 1 Lab	Round 2 Lab	American Museum of Natural History	Lecture 3
	Campus tour, ice-breaker activities		Lecture 2		Splash museum
Afternoon	G8-10 Research project introduction / G7 Activities	Lecture 1	Sports		Fishing
	Sports	Sports			
Evening	Theater workshop	Theater workshop	Theater workshop	WNBA Game	

	7/15 Monday	7/16 Tuesday	7/17 Wednesday	7/18 Thursday	7/19 Friday
Morning	Lecture 4	Lecture 5	Round 4 Lab	Lecture 7	Lecture 8
	G8-10 Field Work / G7 Round 3 Lab	Whale watch	Lecture 6	Round 5 Lab	Splash Beach Cleanup
Afternoon	Preparation for presentation		Preparation for presentation	Preparation for presentation	
	Sports	Sports	Sports		
Evening	Theater workshop	Preparation for presentation	Theater workshop	Performance	Banquet and Presentation

Lab classes and field work

Lab 1: Dr. Aaren Freeman - Oyster dissection

Dr. Freeman researches marine ecology, invertebrates, oyster restoration and kelp aquaculture. He led students in lab-based explorations of marine ecosystems and led older students in a research experiment investigating the interactions between oysters and eutrophication.

In his lab class, Dr. Freeman first introduced phytoplankton and how they use chlorophyll to photosynthesize. He then have students observe phytoplankton under the microscope and draw a few of them on the worksheet. In the second part of the class, Dr. Freeman introduced oysters and how they “filter feed”. After explaining different parts of an oyster and their filter feeding mechanism, Dr. Freeman guided each group of students to dissect oysters and take a closer look at them. Students were also instructed to test the chlorophyll concentration in water that contain different numbers of oysters. The statistics suggest that oysters can effectively reduce chlorophyll concentration, proving their potential to help improve water quality.



Lab 2: Dr. Ryan Wallace - Eutrophication

Dr. Wallace studies eutrophication, ocean acidification and climate change in coastal estuaries, particularly Long Island Sound. He led students in lab-based demonstrations of these phenomena and oversee the older student’s project investigating interactions between oysters and eutrophication.

In his lab class, Dr. Wallace first invited students to come up with a story by referring to four pictures related to the causes of eutrophication. This led to the first step of scientific method: observe. Then, Dr. Wallace raised questions and hypotheses regarding eutrophication: What causes this phenomenon? How does it affect the organisms? Based on the students’ stories, he explained that eutrophication is mainly caused by human factors. When fertilizers containing nitrogen and phosphates are released into the waters, it leads to algae bloom. When algae die, the oxygen concentration drops abruptly and turn the water into a dead zone. Scientists nowadays can monitor the growing condition of algae through satellites. Students not only learned more about the causes of eutrophication, but practiced the steps of conducting a scientific research.



Lab 3: Dr. Matthias Foellmer - Food Webs, Wetlands, and Spiders

Dr. Foellmer researches salt marshes, insects and the impacts of pesticides. He led students in age

appropriate exploration of New York entomology during on campus lab sessions and field trips to nature areas.

In his lab class, Dr. Foellmer first introduced food webs, which mainly consist of producers, primary consumers, secondary consumers, tertiary consumers, and decomposers. He then introduced two theories explaining the relationship between these organisms. The bottom-up theory suggests that the number of producers affects that of the consumers. On the other hand, the top-down theory indicates that the number of secondary consumers affects that of the primary consumers. After snack, the students observed how two different types of spiders—Giant Woods Spider and Tarantula—hunt their prey. Dr. Foellmer invited the students to make hypotheses before putting crickets into the inspection boxes. The result matched their guesses: most tarantulas hunted the cricket immediately while the giant woods spiders wrapped the cricket upon feeling the vibrations of their webs.



Lab 4: Dr. Susan Kilgore - Marine Sediments

Dr. Kilgore studies the influences of climate change on sediments, landforms, geology, sea level rise, and glaciers. She led students in lab-based demonstrations of these principles and provide interpretations of nature during our guided field trips.

In her lab class, Dr. Kilgore first introduced the sources of sediments and the process by which sedimentary rocks form, starting from weathering, erosion, transportation, precipitation, and finally compaction and cementation into solid rock. During transportation, the water energy and the object size determine the distance they can be transported. By analyzing sediment characteristics such as size, composition, shape, roundness, and color, we can understand the habitats and even infer the possible presence of petroleum. Dr. Kilgore then guided the students to analyze sediment samples by using sieves with pore diameters of 4mm, 2mm, 0.25mm, and 0.0625mm. Students filtered the sediments and found that the very fine sand account for the highest proportion while the fine particles accounts for the lowest, inferring that the sample sediments might come from lagoons or estuaries.



Field work: Dr. Freeman and Dr. Wallace - Oyster Bay

This year, the senior students were expected to write a science project on Oysters and Eutrophication under the guidance of Dr. Freeman and Dr. Wallace. In addition to the lectures and lab classes, the two professors arranged a few more lessons and activities for them, one of which is the field work taking place at Oyster Bay on July 15. Students were brought to several deployment sites at Oyster Bay to collect oysters and seawater for testing. They recorded the sizes of the oysters and tested the seawater turbidity by using the Secchi disk. They

also measured the temperature, oxygen content, pH levels, coliform bacteria, phosphate, nitrate, and salinity of the seawater. These data were later analyzed and used to understand the relationship between oyster growth and eutrophication.



Field trips

Field trip 1 - American Museum of Natural History

The American Museum of Natural History in New York is not only the major research and education center of natural science in the US, but also the setting for the movie *Night at the Museum*. The four must-see exhibits include the life-sized dinosaur skeleton in the second-floor hall, the life-sized model of a blue whale in the Ocean Life exhibit, the Moai statue in the Pacific Peoples exhibit, and the *Tyrannosaurus rex* skeleton in the fossil hall on the fourth floor. Students got to witness these amazing collections under the guidance of the professors and TAs, learning a lot about different creatures and cultures. Students also watched a film titled *Turtle Odyssey* to learn the life of a green sea turtle. As the number of green sea turtle continues to drop around the globe, it is important that humans take immediate action to protect them and bring them back.



Field trip 2 - SPLASH Museum and Fishing

Operation SPLASH is a volunteer-based organization dedicated to improving the quality of Long Island's south shore bays, waterways, and beaches through beach cleaning, advocating, and promoting programs in schools. At SPLASH Museum, students learned not only about the organization goals and achievements, but about the seriousness of ocean trash and how it negatively impacts different kinds of marine animals. This reminded them how important it is to promote plastic reduction and environmental protection.



After visiting SPLASH Museum, students got on a boat and went fishing. Students were extremely excited since it was the first time for many of them to fish. They listened attentively as the Chairman and the teachers explained how to use a fishing rod. At the end of the trip, many students successfully caught fish and other sea creatures. Though most of the fish were too small and were thrown back into the ocean, everyone had a wonderful afternoon.



Field trip 3 - Whale Watch

Before leaving for the port, Dr. Wallace gave a lecture on marine mammals and birds that are frequently seen around Long Island as a preparation for the Whale Watch field trip. After an hour car ride, we arrived at Sheepshead Bay and boarded the American Princess. As the boat departed the port, the crew started introducing a few whales that might be spotted during the trip. Luckily, throughout the ride, we came across several whales as they came near the ocean surface to breathe and hunt for food. During the trip, students also had a great time standing at the front part of the boat experience the wind and the ocean waves.



Field trip 4 - SPLASH Beach Cleanup

Following the footsteps of Operation SPLASH, students participated in a beach cleanup on their last day at Long Island. The volunteers at SPLASH took the students to different parts of the island by boat, delivered tools, and then guided them to pick up trash along the shores. The amount of trash students collected in their buckets made them realize the importance of the constant efforts made by SPLASH. While the other groups were out cleaning, students also got a chance to catch and observe sea creatures living in shallow water near the shores. What's more, everyone could enjoy BBQ in the shade of the pavilion near the beach after their hard work!



Throughout the two-week camp at Adelphi, the lectures, lab classes, field work, and field trips not only allowed students to learn more about the relationship between organisms and environment, but also equipped students with useful skills and scientific methods that are crucial when investigating environmental-related issues. Hopefully the students can apply what they acquired at Adelphi University in their future studies in Taiwan, becoming better learners, researchers, and explorers.



～ 2024 美國遊學團學生心得分享～

My summer trip to the United States

二誠 王林喬 Wang, Lin-Chiao

The long journey started on July 3rd, when we were all packed and ready to go. Many of us had waited for so long just to catch a glimpse of the United States and experience the cultural differences between the two countries. Nervous and excited, I was ready to step out of my comfort zone and embrace what the US has to offer.

As we arrived at JFK International Airport in New York, I noticed something strange. The time we spent going through customs was so long, which means the security is relatively stricter in the US than in Taiwan. When we finally went past the customs and walked out of the airport, it was late at night. We got on the bus and headed to the hotel. Everyone wanted to take a rest on the bus; however, since the freeway was full of potholes, the bus ride was too bumpy for any of us to fall asleep. By the time we eventually arrived at the hotel, it was already midnight. That was my first day in the US.

During the first week, we visited Washington, D.C. My eyes were feasted by all manner of memorials and historic buildings. When I stood in front of the White House, I felt honored and showed great respect. To me, it was really eye-opening to appreciate these famous attractions in person. In the past, I had totally no idea what the White House really looked like in real life since I only got to see it on TV. The trip to Washington, D.C. is no doubt one of my favorite parts of the journey in the US.

After a week of city tour, we finally had to face the hard part—college life in Adelphi University. Fortunately, it wasn't as tough as I thought once I got accustomed to life at Adelphi. We stayed on campus for two weeks. Not surprisingly, life in the US university has no difference compared to that in Taiwan. At Adelphi, we took a variety of courses, such as marine sediments, eutrophication, oysters, spiders, and so on. We chose eutrophication as the topic of our science project and soon started working on it. We designed different kinds of experiments, recorded data, and analyzed them. After two weeks of hard work, our effort finally paid off. During our final presentation, everything went perfect—the data, the speech, the slides, etc. The best part in Adelphi was, I got to explore the differences between Taiwanese and US campus. Doing the experiment and finishing a science project was also a wonderful experience for me.

During weekends, we were lucky enough to watch the real WNBA game. At the Barclays Stadium, we watched the

duel between Chicago Sky and New York Liberty. It was my first time watching a basketball game at the stadium. I finally realized why everyone likes to go to the arena rather than watching games on mobile devices. The atmosphere at the stadium was incomparable, especially when the audience was hyped up. The celebration of scoring was the best part. A shot went in, and all the spectators rose from their seats and cheered for the home team. That incredible scene will definitely stay in my mind forever.

In the final week of our journey, we flew to Orlando to enjoy our most exciting week. We went to two theme parks and the JFK Space Center. The day we spent in the Universal Studios was no doubt one of the most memorable days of my life. Upon entering the park, the tremendous Hulk roller coaster immediately caught my eyes. I also played other facilities, such as the Harry Potter Explore and the FearFall. It's a pity that I couldn't play all the facilities in the theme park. However, I would always remember the Hulk roller coaster because it was one of the scariest roller coasters I've ever ridden.

During this trip, I learned a lot of differences between the US and Taiwan. Adelphi University was also a memorable place that I'll never forget, including the experiment, the cafeteria, the TAs and the professor. I was so lucky that I had a chance to watch a real WNBA match in person. In short, everything in the United States is AMAZING. If I have a chance, I will definitely go there again.



The Alluring Life at Adelphi University

二誠 蔡宗軒 Tsai, Tsung-Hsuan

This summer, I joined a study tour in the United States. Throughout the tour, what I enjoyed the most was experiencing life at Adelphi University. It allowed us to immerse ourselves in authentic college life and made me realize the importance of leading a disciplined life.

During our stay at Adelphi University, we delved into a wealth of biological knowledge, scientific methodologies, and research techniques. The professor introduced us to algae and oysters, continually guiding us through the steps of making hypotheses and designing experiments. When we conducted water quality assessments and oyster sampling in the waters near Long Island, we gathered data from various locations. To us students, the data initially seemed overwhelming and disjointed. However, the professor and teaching assistants emphasized the importance of systematically organizing the data and using charts to better show its significance. This experience made me realize my previous shortcomings in data analysis, and through this course, I learned how to properly process and interpret data.

Additionally, I gained valuable insights into presentation techniques. In preparation for the final presentation, I spent countless hours drafting and memorizing my script. Memorization proved to be a major hurdle for me; I struggled to recite the script fluently, which made me anxious. But the professor advised that memorization is not about rote recitation; it's about remembering the key points you want to convey. The professor encouraged us to present freely, sharing our findings and analysis with confidence. In the end, I delivered an excellent presentation! At Adelphi University, I learned how to organize vast amounts of data, transform it into comprehensible charts, and improve my presentation skills. I also learned the importance of teamwork—working together with unity rather than merely going through the motions. This experience has fundamentally transformed my approach to learning!



Besides academics, I also honed my self-discipline. The professors only required us to gather for classes and required activities, leaving the rest of the day for us. This autonomy meant that without strong self-discipline, one could easily lead a disorganized life on campus. Each day, I structured my schedule to ensure productivity rather than passively await instructions. I dedicated my lunch breaks to reviewing the morning's lessons and reading English literature, which deepened my understanding of the material. Additionally, I exercised for 2-3 hours daily to stay active, avoiding the pitfall of spending all my time at my desk. In the evenings, I allocated time to writing reports and studying. After two weeks, I noticed a significant improvement in my self-discipline; I no longer need others to plan my day for me. This enhancement of self-discipline is the most valuable takeaway from this study tour.

Throughout the tour, I not only acquired extensive biological knowledge but also cultivated self-discipline in our daily routines, ensuring that the fixed schedule prevented me from being overwhelmed by jet lag. Initially, I thought the courses might not be very enjoyable, but as they progressed, I found them increasingly intriguing due to the myriad wonders we discovered. I hope this study tour will bring significant benefits for my future overseas studies.

My US Study Adventure

二智 吳在晟 Wu, Zai-Sheng

We embarked on a 24-day study tour to the United States with our school's summer camp. I was very nervous and excited before setting off because this was my first time to set foot on this mysterious continent.

On the first few days, we visited Philadelphia and Washington, D.C. What impressed me the most was the Washington Monument because it appeared in the Spider-

Man movie, which is my favorite. After several days of guided tours, we finally arrived at Adelphi University, where we would spend 13 days studying and experiencing college life.

The courses we took were mainly about marine biology, and the word we encountered most often was "eutrophication", which is a process where a water body becomes overly enriched with nutrients. The college classes in the US are

quite different from those in Taiwan. The professors in the US expected more interactions with their students. For example, they would ask you a lot of questions to find out how much you have learned and understood.

Among all the classes, the most unforgettable one was the field work in Oyster Bay because I felt very uncomfortable after it was over. After boarding on the ship, Dr. Wallace taught us how to collect water and record data such as water temperature, pH, salinity, nitrogen and phosphorus concentration. Then, Dr. Freeman and the crew pulled up the previously free-range oysters from the research sample point, and used a cursor ruler to measure the size and record it. I forgot to put on sunscreen and stayed under the sun all day on the boat. When I returned to the dormitory, I found that I had heatstroke. I could hardly sleep all night and I learned a lesson that I should keep myself hydrated during the boat trip.

In the following few days, we went fishing, whale watching, and beach cleaning. I was sad that I didn't catch any fish, but it was a great experience that I got to fish outside of my country. We also got a chance to watch WNBA and MLB games during our stay in New York. It was my first time watching a basketball game with tens of thousands of people at the stadium and I liked the atmosphere very much. It is a rare thing in Taiwan to see so many people supporting the team of their city.

This trip made me realize that there are many differences between Taiwan and the United States, and I also discovered some benefits of studying in the United States. The most noteworthy one is transportation. The roads in Taiwan are full of messy scooters, but in comparison, the roads in the United States are orderly. I think they can achieve this because their land and the roads are wide. Although our land is not big, I think reducing the production of scooters can solve this problem.

Finally, I am very thankful that I had this opportunity to visit the United States through participating in the summer camp. I learned a lot and I had a lot of fun. In addition to learning about the scientific methods, we also learned about marine sediments, eutrophication, spider foraging, and the environmental impact on oysters. If I have another chance, I would like to go there again.



My Beautiful Memories in the US

一愛 林佑潔 Lin, Yu-Chieh

During the 24 days we spent in United States, we visited many monuments, experienced university life, and came to understand American culture. What impressed me the most was the two weeks I spent at Adelphi University

We arrived at Adelphi on the fifth day of our trip in the United States. We attended lectures and learned about marine science knowledge like eutrophication, marine sediments, glaciers, spiders, and oysters. Besides these, we also learned how to play pickleball. It was my first time to play this sport. It's like a combination of table tennis and tennis and is not very hard to learn. After just a few practices, I was already able to play smoothly with my friends.

Among all the courses we took in Adelphi, my favorite one is eutrophication. Eutrophication is caused by human activities that generate too much nitrogen and phosphorus in the ocean and by over-fertilizing. We did some experiments to investigate how nitrogen and phosphorus affect algae growth. We concluded that algae grow the best in conditions

with both nitrate and phosphate and missing either one of them negatively affects its growth. We also learned how to measure chlorophyll because one of the algae we picked is phytoplankton, and we can't see the phytoplankton with the naked eye.

In addition to attending lectures and conducting experiments in school, we also went fishing and whale watching. The professor taught us how to do water sampling and had us practice using Van Dorn bottles and the Sonde. We used them to measure sea water temperature, dissolved oxygen, salinity, nitrogen, phosphorus concentrations, and also coliform bacteria levels. For the six times we do sampling, the nitrogen and phosphorus concentrations are all pretty low. It's good news because it means eutrophication there is not very serious.

On weekends, we went to watch an MLB baseball game at the Citi Field and watch The Lion King musical at Broadway. I don't have much interests in baseball, but the musical



impressed me a lot. I had never watched a musical before. The fancy costumes and props amazed me. Over a hundred puppets were used in the performance, achieving a seamless integration of the actors and the puppets. There were both spectacular

and funny scenes and the most shocking one was definitely when Simba pushes Scar off the cliff. I want to watch other musicals if there is a chance.

In addition, we also observed some differences between Taiwan and the United States. We experienced some culture shock; for example, why is there such a big gap between the restroom door and the door frame? Why do bathrooms usually lack shower heads? These things made us feel a bit uncomfortable at first. But after these 24 days, we slowly grew accustomed to it.

Joining this summer camp in the United States was a fantastic experience. I enjoyed a variety of activities and made many new friends. This summer has truly been memorable and rewarding because of this summer camp.

An Amazing summer camp in the US

一愛 陳虹樺 Chen, Hung-Hua

During the 24-day trip to the east coast of the US, we stayed at Adelphi University for two weeks. Life there was different from that in Taiwan, but I love it! The teachers tried to give us more space and time to experience university life. I really enjoy this kind of free lifestyle: I can do whatever I want and go wherever I want as long as I am self-disciplined. That is exactly what teenagers long for! In class, the professors often interacted with us. Even though not many students answered questions out loud, I like this way of teaching. The professors not only gave lectures and finished the lesson, but he often checked in with us to make sure we really understood. This made the classroom atmosphere much livelier and more relaxed. I want to study abroad when I grow up!

During our stay at Adelphi, I also met many kind and friendly teaching assistants and professors. I asked them questions in my poor English, and they were very patient in guessing what I was trying to say. They generously shared their resources with me and helped me a lot when I prepared for my presentation. I am truly grateful to them!

Besides experiencing college life at Adelphi, we also visited many tourist attractions and amusement parks in Philadelphia, Washington DC, New York, and Orlando. Among all, the place that impressed me the most was the Universal Studio in Orlando, Florida. Although I had been to Universal Studios before, being there without my family was different. On that day, I was particularly brave and dared to ride the thrilling roller coasters in the park. The speed was so fast that I could hardly react, and I had no idea where it would go next. There were several 360-degree loops too. I felt proud

of myself for plucking up the courage and giving them a try!

However, the day didn't go very smoothly. When we were on the bumper boats, the machine broke down, and we had to stand under the sun for almost twenty minutes. While waiting in line for the Harry Potter roller coaster, the ride was suspended due to bad weather, and we had already been waiting inside for almost two hours by then. Fortunately, just before we had to leave, we managed to ride the Spider-Man 3D motion simulator. Otherwise, it would have been disappointing to experience so few facilities.

24 days went by too quickly. Throughout this camp, I learned a lot, not just academically, but also in terms of personal growth. I discovered that I am much braver and stronger than I thought. Stepping out of my comfort zone for an extended period of time was an experience I wouldn't have had if I stayed in Taiwan. This summer camp in the USA was no doubt a special and unforgettable experience in my life. Thank you, Mom and Dad, for giving me this opportunity to learn and grow!



Tsai Hsing School
Summer Campin USA
2024