
2020 寒假哈佛大学【生、化、医、药】科研提升项目

1. 项目简介

本项目是在 2020 年寒假美国哈佛大学医学院麻省总医院进行的医学科研提升项目。项目期间，学生将通过专业讲座，研讨会，案例分析，课堂讨论，实验室参观，医院访问等形式来进行专业学习以提升学生的专业科研认知水平。项目完成后，学生将获得项目结业证书。

2. 海外大学介绍

哈佛大学 (Harvard University)，简称哈佛，坐落于美国马萨诸塞州剑桥市，是一所享誉世界的私立研究型大学，是著名的常春藤盟校成员。这里走出了 8 位美利坚合众国总统，133 位诺贝尔奖得主（世界第一）、18 位菲尔兹奖得主（世界第一）、13 位图灵奖得主（世界第四）曾在此工作或学习，其在文学、医学、法学、商学等多个领域拥有崇高的学术地位及广泛的影响力，被公认为是当今世界最顶尖的高等教育机构之一。

2019 年，哈佛大学世界大学学术排名 (ARWU) 世界第 1，US News 世界大学排名世界第 1。华尔街新闻时代排名世界第一，QS 世界大学排名世界第 3。哈佛在 2018 年 US News 世界大学专业排名中，生物学和生物化学专业排名第 1，临床医学专业排名第 1，免疫学专业排名第 1，微生物学专业排名第 1，神经科学与行为专业排名第 1，药理学专业排名第 1。

哈佛大学医学院附属麻省总医院是美国哈佛大学医学院最早、也是规模最大的教学附属医院，全美历史最悠久的三所医院之一。麻省总院建立于 1811 年，2012 年全美医院排名第一 (US News & World Report)。1846 年，进行了人类历史上第一例乙醚麻醉手术，并在 1896 年最先将 x 光用于临床。麻省总医院主导着全美规模最大的以医院为基础的研究项目，年度研究经费超过 6 亿美金，至今已产生了 11 位诺贝尔奖获得者。

3. 项目内容主题

- Medical Professional Career in the USA vs China
- Career Advancement, Research Management, Technical Strategies, Pressures of Securing Outside Research Funding
- Clinical Trial Design and Data Management
- Microbiome and its diagnostic value in ASD and other medical conditions
- Women in Science and Navigating Careers in Research, Medicine and Science
- Psychological Testing in Clinical Research
- Introduction to Early Screening and Developmental Testing Methodologies in Clinical Research
- Introduction to Functional Magnetic Resonance Imaging (fMRI)
- Applications of Functional MRI in Studies of Human Visual System
- Neuro-imaging Interpretation
- Microstructural Imaging Using Diffusion MRI
- Life at the Bottom: Deconstructing MRI at 6.5 mT
- Research Applications to MRI Studies
- Radiology and Laboratory and Non-Clinical PET Tracer Production for Human Administration in Research Studies
- PET Probe Development
- Interpretations of PET/MRI and Pharmacokinetic Modeling
- Introduction to Magnetoencephalography

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- Introduction to Electroencephalography
 - Understanding the Immunotherapy of Cancer: Past, Present, and Future
 - Introduction to Stem Cell Research
 - Introduction fNIRS Applications and Data Analysis
 - Applications of fNIRS with Psychiatric Disorders
 - Using AI Computational Modeling to Detect Disease
 - Applications of Eye Tracking and Face Recognition

4. 费用明细

费用类型	项目内费用	费用	实际收款方
申请费	项目申请费【1】	\$100	校方
项目费用	哈佛大学学费（包括课程费、资料等）、住宿费、企业参访费用	\$4500	校方
服务费	主办方 IEF 服务费（咨询、申请、签证、行前、海外支持等）【2】	¥2500	IEF
金额合计（美元兑人民币汇率 7 预估）:		¥34700	

【说明】:

1. 申请费一旦缴纳将不可退还。
2. IEF 服务费申请者在国内以人民币形式缴纳。

5. 项目成果

由哈佛大学颁发的结业证书

6. 项目住宿

标准双人间。

【文档未完，项目日程在下页】

附件 1. 课程表

第 1 天 SUN	Arrival to Boston
第 2 天 MON	149 13th Street, Charlestown, 02129 10:00 – 10:30 AM Registration 10:30-11:00 Welcome Remarks; Dr. Bruce Rosen, MD, PhD 11:00-12:00 Introduction to the Martinos Center; Bill Shaw 11:00-12:00 Course Overview and Overall Plan; Dr. June Kong, MD 14:00-15:00 Medical Professional Career in the USA vs China; Dr. June Kong, MD 15:00-16:00 Panel: Career Advancement, Research Management, Technical Strategies, Pressures of Securing Outside Research Funding; Dr. Robert Barry, PhD, Dr. Jason Stockmann, PhD, Dr. Eric Gale, PhD 18:30-20:30 Welcome Dinner Reception
第 3 天 TUE	55 Fruit St, Boston, MA 02114 10:30-12:00 MGH History Museum and Ether Dome Tour (2 North Grove Street, Boston, MA 02114 Contact Number: 617-724-8009) 14:00-15:00 Clinical Trial Design and Data Management; Dr. Jian Kong, MD 15:00-16:00 Clinical Trial Case Discussion; Dr. June Kong, MD 16:00-17:00 Panel: Clinical Trial Dr. June Kong, MD; Dr. Jian Kong, Dr. Mason Wang
第 4 天 WED	149 13th Street, Charlestown, 02129 9:00-10:00 Group Discussion and Q&A Session with Martinos Faculty Members 10:00-11:00 Microbiome and its diagnostic value in ASD and other medical conditions; Dr. June Kong, MD 11:00-12:00 Introduction and discussion of Microbiome reports by SYNAPSE Lab 14:00-15:00 Panel: Women in Science and Navigating Careers in Research, Medicine and Science 15:00-16:00 Psychological Testing in Clinical Research; Dr. Maria Mody, PhD 16:00-17:00 Introduction to Early Screening and Developmental Testing Methodologies in Clinical Research
第 5 天 THU	149 13th Street, Charlestown, 02129 9:00-10:00 Group Discussion and Q&A Session with Martinos Faculty Members 10:00-11:00 Introduction to Functional Magnetic Resonance Imaging (fMRI); Dr. Kenneth Kwong, PhD 11:00-12:00 Tour of MRI, Mary O'Hara 14:00-15:00 Applications of Functional MRI in Studies of Human Visual System; Dr. Shahin Nasr, PhD 15:00-16:00 Group Discussion: Neuro-imaging Interpretation; Dr. Constantina Treaba, MD, PhD
第 6 天 FRI	149 13th Street, Charlestown, 02129 9:00-10:00 Microstructural Imaging Using Diffusion MRI; Dr. Susie Huang, MD, PHD 10:00-11:00 Group Discussion 11:00-12:00 Life at the Bottom: Deconstructing MRI at 6.5 mT; Dr. Matthew Rosen, PhD 12:00-12:30 Tour of low field MRI lab; Dr. Matthew Rosen, PhD 14:30-15:30 Panel: Research Applications to MRI Studies
第 7,8 天 SAT, SUN	Free Time or optional excursion
第 9 天 Mon	149 13th Street, Charlestown, 02129 9:00-10:00 Group Discussion and Q&A Session with Martinos Faculty Members 10:00-11:00 Introduction to Simultaneous PET/MR; Dr. Hsiao-Ying (Monica) Wey, PhD 11:00-12:00 Radiology and Laboratory and Non-Clinical PET Tracer Production for Human Administration in Research Studies; Judit Sore 12:00-12:30 Tour of Radiology and Laboratory; Judit Sore, Monica Wey 14:00-15:00 PET Probe Development; Dr. Changning Wang, PhD 15:00-16:00 Interpretations of PET/MRI and Pharmacokinetic Modeling, Dr. Julie Price, PhD 16:00-17:00 Group Discussion and Q&A Session with PET/MRI Program Staff The Athinoula A. Martinos Center for Biomedical Imaging @ Massachusetts General Hospital 149 13th Street, Suite 2301 Charlestown, MA 02129

第 10 天 TUE	149 13th Street, Charlestown, 02129 9:00-10:00 Group Discussion and Q&A Session with Martinos Faculty Members 10:00-11:00 Introduction to Magnetoencephalography; MEG specialist 11:00-12:00 MEG Demonstration and Group Discussion; Nao Matsuda 14:00-15:00 Introduction to Electroencephalography 15:00-16:00 EEG Demonstration and Group Discussion; Nao Matsuda
第 11 天 WED	330 Brookline Ave, Boston 02215 9:00-10:00 Group Discussion and Q&A Session with Longwood Faculty Members 10:00-11:00 Understanding the Immunotherapy of Cancer: Past, Present, and Future; Dr. Mason Wang, PhD 12:00-1:00 Longwood Tour of BIDMC, BCH, BWH; Dr. Mason Wang, PhD 13:30-14:30 Introduction to Stem Cell Research, Dr. Christoph Budjan, PhD 14:30-15:30 Tour of Research Lab, Countway Library, Museum, and Harvard Medical School; Dr. Christoph Budjan, PhD 15:30-17:00 Harvard Medical and Dental Student Panel
第 12 天 THU	9:00-10:00 Group Discussion and Q&A Session with Martinos Faculty Members 10:00-11:00 Introduction fNIRS Applications and Data Analysis; Dr. Mari Franceschini, PhD 11:00-12:00 Applications of fNIRS with Psychiatric Disorders; Dr. Jiuju Wang, PhD 12:00-1:00 NIRS demonstration; Optics Lab @ Martinos Center 14:00-15:00 Using AI Computational Modeling to Detect Disease 15:00-16:00 Applications of Eye Tracking and Face Recognition; Dr. Nouchine Hadjickani, MD, PhD 16:00-17:00 Eye tracking and Virtual Reality to diagnose and treat Autism demonstration; SYNAPSE lab
第 13 天 FRI	9:00-12:00 Award Ceremony and Graduation Reception 12:00-2:00 Networking with Martinos Faculty Members
第 14 天 SAT	Leave Boston

注：以上课程内容为样例，具体课程表届时将以项目方实际公布为准。