

2020 年北卡州立大学冬季科研项目常见问题

1. 项目的大体安排是什么呢？

第一周	机场接机 新生培训、欢迎午餐/早餐、校园参观、图书馆参观 科研方法介绍 与教授和科研团队见面、加入实验室 阅读相关资料 开始科研，10-20 小时 文化活动：罗利市区和博物馆参观
第二周	科研 20-30 小时 学术海报展示技巧讲座 准备最终展示 文化活动：奥特莱斯购物
第三周	科研 20-30 小时 准备最终展示 美国研究生博士生项目申请讲座 文化活动：杜克大学参观
第四周	科研 20-30 小时 最终展示演讲 毕业典礼和告别午餐 机场送机

2. 哪些专业的学生可以申请这个项目：

- 机械工程
- 航天工程
- 电子工程
- 计算机工程
- 材料科学
- 化学工程
- 生物医学工程
- 计算机科学
- 数学
- 化学

3. 申请条件是什么？

- 北卡州立大学在中国合作伙伴的本科 2 年级及以上的学生

- 学习成绩优秀，能够用英文进行沟通和科研（申请时需要提供英文成绩和在校成绩单）
- 申请时还需要提供简历和研究方向说明，如果之前有科研经验请说明
- 项目有两个时间段，请选择其中一个合适你的时间申请
- 申请截至时间为 2019 年 10 月 31 日，我们根据申请人的具体情况择优录取
- 请在北卡州立大学全球培训学院网站申请：go.ncsu.edu/winterGEAR
- 从 10 月 7 日起，我们每周三根据申请情况，给合格的学生开据邀请函，学生可持邀请函申请 B2 签证。由于目前签证排队和审理周期较长，所以请尽量提前申请。

4. 我们将具体从事什么样的科研项目？

- 申请时需要提供简历和研究兴趣说明，我们会根据你的专业、研究方向帮你安排到北卡州立合适的教授和研究团队
- 科研项目期间你将加入该研究团队，从事实际科研项目
- 科研项目举例：

Program Title	Description	Major
Automated Video Editing	Students on this project will first design a study to determine a metric for engagement and comprehension for meeting videos from the AMI Corpus. Then, they will write extensions to an automated camera view selection algorithm from three cameras that chooses camera states and transitions based on detected joint attention region from participant gaze. Camera states and transitions will be represented as a Markov Decision Process, and the transition probabilities will be learned from data annotated by film editors on the AMI meeting corpus. One student will be responsible for collecting gaze data from the Tobii eye tracker and analyzing points of interest	Students majoring in Computer Science

	in camera shots with different composition styles.	
Nanomanufacturing of colloidal nanostructures on non-planar surfaces	Nanostructures can have novel physical properties that are not found in traditional macroscale materials. One example is antireflection structures inspired by the moth eye, which can reduce glare over broad wavelength band and viewing angle. In this research project, the students will examine the scalable fabrication and assembly of colloidal crystals on curved lenses to reduce light reflection. Students will learn nanofabrication methods, colloidal assembly techniques, and the fundamentals of nanophotonics.	Students majoring in engineering, material science, or physics. Some lab experience required
Developing strategies for high-performance stretchable organic electronics	By combining electronic functionality with the ability to stretch the devices opens up numerous applications that are not possible using conventional electronics, such as smart soft robotics, and bio-integrated electronics. Polymer semiconductors are an attractive option for stretchable electronics by exploiting the favorable mechanical behavior of polymers. In this project, multiple strategies will be considered to achieve high-performance stretchable polymer semiconductors. A	Students majoring in mechanical engineering, electrical engineering, or materials science and engineering. Some experience in electrical testing is desired.

	particular focus will be on the use of kirigami to create structures in the film that will allow for large deformation with minimal impact of device functionality. The student involved in the project will process the semiconductor films, pattern the films to achieve stretchable characteristics, and test electrical characteristics of the films under various mechanical tests.	
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5. 项目的最终成果是什么？

- 项目结业证书
- 北卡州立大学教授评估信/推荐信
- 学术海报展示
- 拥有美国一流大学的科研经验
- 深入了解美国大学研究生和博士生申请流程