山东大学 SHANDONG UNIVERSITY

DEPARTMENT OF INTERNATIONAL AFFAIRS
C306 Mingde Building
No. 27 Shanda Nanlu
Jinan, Shandong 250100
Tel: 86 531 88365335, Fax: 86 531 88565051
Website: www.sdu.edu.cn
Email: gjbjlk@sdu.edu.cn

Research Internship Information Collection for Credit Evaluation

Research Internship Name: Nanotechonology and Biomaterials Used for Biomedical Applications for postgraduates

Host Department: Department of Chemistry and Chemical Engineering

Eligibility Requirements: Postgraduate students with the background of physical chemistry, polymer chemistry or bioengineering

Research Internship Description:
(1) Colloidal particle assembly
(2) Surface engineering
(3) Bio-nano interactions
(4) Drug and vaccine delivery

Research Internship Objectives: Make familiar with nanotechonology and biomaterials used for biomedical applications. The research results could be potentially published as journal articles and patents.

Student Roles and Responsibilities: Performing experiments including particle or film engineering, materials characterization, and cell experiments. Drafting experimentation details, research report. Presenting talks on group meetings.

Hours per week: ~40 h

Grading: Working time, lab performance, group talks, and communications.

Number of Internship Positions: 2

Research Internship Location: Department of Chemistry and Chemical Engineering

Are the dates flexible: yes

Supervisor(s) Name(s) and Contact Information: Jiwei Cui, jwcui@sdu.edu.cn, +86-531-88362256

Administrative Contact Information: Ms. LI Huijing, lihuijing@sdu.edu.cn

Website address: http://cis.sdu.edu.cn/cui_lab.htm

Host university application: Yes.

Dormitory accommodation available: yes, on-campus International Student Dormitory is guaranteed.

Research Internship Information Collection for Credit Evaluation

Research Internship Name: Study of All-solid-state Energy-storage Materials with High Performance

Host Department: Research Center for Carbon Nanomaterials, School of Materials Science and Engineering

Eligibility Requirements: Students are better over Senior students or postgraduates. Students should have related background on materials science and engineering or chemistry. Students should have learned at least one of the related courses, eg. Fundamentals of Materials Science and Engineering, Electrochemistry, Physical chemistry, Inorganic chemistry, et.al.

Research Internship Description: During this research internship, the students will participate all the research activities independently, including: read references; design and set up experiments; characterize the samples via SEM, XRD, potentiostat, and other related testing; assemble all solid state supercapactors and test their electrochemical performance; give a presentation on group meeting; finish the research report. The internship duration is from one month to three months (at least one month).

Research Internship Objectives: A description of the learning outcomes that are expected. After the internship, students will learn basic knowledge on all-solid-state supercapcitors and lithium battery, etc, including concepts, principles, fabrication of anode and cathode materials (eg. Graphene, Graphene based composites, FeCoSx, $LiMn_2O_4$ and so on), assemble of the devices and their applications. Students will also obtain the background of energy storage materials and electrochemistry. What's more, students will grasp the skills and operate the instruments about the characterization approaches and techniques, such as SEM, XRD, Raman, et. al.

Student Roles and Responsibilities: Work as a research assistant. Students will help supervisors on lab safety training and lab work to project undergraduates. Students will help PhD students on doing the related projects including doing experiments and testing samples.

Hours per week: 37.5

Grading: Working time, lab performance, group talks, and team work and independent performance on assigned tasks.

Number of Internship Positions: 2

Research Internship Location: Qianfo Campus, Shandong University

Are the dates flexible: Yes

Supervisor(s) Name(s) and Contact Information: Prof. Pengchao Si, pcsi@sdu.edu.cn

Administrative Contact Information: Ms. LI Huijing, lihuijing@sdu.edu.cn

Website address: http://www.cmse.sdu.edu.cn/info/1159/7238.htm

Host university application: Yes.

Dormitory accommodation available: yes, on-campus International Student Dormitory is guaranteed.

Research Internship Information Collection for Credit Evaluation

Research Internship Name: Short-term Medical Research Internship for Undergraduates

Host Department: Cheeloo College of Medicine

Eligibility Requirements: non-Chinese, full-time undergraduate students, English proficiency, have completed basic study in Biology

Research Internship Description: Shandong University offers a research program opportunity for international students in the summer. SDU will provide students research opportunities in a variety of areas, such as, immunology, genetics, molecular biology, physiology, medical microbiology, cell biology, neurobiology, tumor research, metabolic diseases, pharmacology, new methodology for imaging & medical inspection. The research opportunities will vary from year to year. In early January SDU will provide students with the list of research projects available for the summer of that year. The program will last for 2 to 3 months, starting from early July and terminating before the beginning of the next semester in early September. International students will do the experiments under the instruction of a SDU lab supervisor. The lab instructor will ensure that students are briefed on health and safety procedures in the laboratory and will monitor that the students are conforming to these procedures. In each laboratory, students will have the opportunity to learn the techniques and data analysis required for the specific research project, participate in lab discussion and Journal Club, and take part in scientific research presentations. In addition, students are required to attend one academic lecture every week in order to successfully gain credits recognized by their home university.

Research Internship Objectives: The purpose is to provide students with actual experience in conducting basic research at, and becoming familiar with, medical research laboratories. The program requires students to be self-motivated. Before actually starting the exercises, student should make their own plan based on the assignments from the affiliated laboratory and discussion with the laboratory head. We have intentionally allotted such a long period for this program, to ensure a more substantial and cohesive training. Further, in the hope of enriching training, we ask each student to make a presentation in the final week of training.

Student Roles and Responsibilities: Students will do the experiments under the instruction of a SDU lab supervisor. The lab instructor will ensure that students are briefed on health and safety procedures in the laboratory and will monitor that the students are conforming to these procedures. In each laboratory, students will have the opportunity to learn the techniques and data analysis required for the specific research project, participate in lab discussion and Journal Club, and take part in scientific research presentations.

Hours per week: around 40 hours per week

Grading: depending on the participation of the students in classes or labs and the performance of the final presentation

Number of Internship Positions: no more than 10

Research Internship Location: Baotuquan Campus, Shandong University

Dormitory accommodation available: yes, on-campus International Student Dormitory is guaranteed.

Supervisor(s) Information:

	Representative	Research team	Research direction
1.	Prof. Shuyan Yu	Brain Dyshomeostasis and Pathopsychology	Neurobiology and pathogenesis of depression; PTSD and Parkinson's Disease; epigenetics and circadian System in depression; Geriatric mental and psychosomatic diseases; Depression and neuro inflammation; Psychology health promotion skills.
2.	Prof. Xiao Yu	Endocrine Physiology	Islet cell loop, islet cell transdifferentiation and islet organoids. The role of islet δ cell in the regulation of islet homeostasis.The regulation of islet β and δ cell function by GPCR and PTP. The interaction between immune cells and islet cells and the effect on islet homeostasis.
3.	Prof. Chunhong Ma	Immunity and liver diseases	The main goal of our team is to investigate the cell interaction, metabolic and functional homeostasis of liver immune microenvironment (such as macrophages, NK cells, T cells) in both physiological and pathological conditions; in addition to exploring the roles of important immune regulatory molecules (including TIM, TIPE1 and ZHX2) in maintaining liver homeostasis and mediating the pathogenesis of chronic inflammation, HBV infection, metabolic liver diseases and liver cancer. Furthermore, we aim to reveal the crosstalk among liver, gut, fat and other tissues and its effect in whole body homeostasis; as well as to discover the potential value of key immune cells and molecules in the diagnosis and therapeutic intervention strategies for related liver diseases.
4.	Prof. Chuanyong Liu	Crosstalk between enteric	Neuro-immune mechanisms in inflammatory bowel disease. Proliferation and differentiation of intestinal stem cell. Colitis and colon

		nervous system and immune system	adenocarcinoma. The effects of G protein coupled estrogen receptor in gastrointestinal motility, sensation and intestinal epithelia regeneration. The mechanisms and treatment during CNS injury.
5.	Prof. Zhaojian Liu	Cellular Function and Diseases	The role of RNA splicing in development and diseases.
6.	Prof. Qiji Liu	Identification of the causative genes of rare diseases and investigation of its pathogenic mechanism	Identification of the causative gene for rare diseases and investigation of its molecular pathogenic effects. Genetic studies of Mendelian forms of common diseases especially autoimmune diseases using NGS. Investigating the pathogenic effects of causative genes of genetic diseases using induced pluripotent stem cell system. Optical modulation of stem cells for rescue and repair.
7.	Prof. Shuwei Liu	Neuroimaging	1. Digital anatomy and virtual surgical planning. 2. Neural development and delaying aging. 3. Pathological mechanism, prevention, and treatment of psychiatric disorders. 4. Multi-modal and multi-scale study of brain stem structure and fiber connections.
8.	Prof. JinPeng Sun	Drug Target and membrane receptors	Drug Target and membrane receptors.
9.	Prof. Lining Zhang	Immune Microenvironment and Major Chronic Diseases	To explore the regulation of Immune Microenvironment and Major Chronic Diseases. Recently, Dr. Zhang's team focused on role and underlining mechanisms of immune molecules (PDCD4, TIPE2, IL-37 and A20), immune cells (T cell and macrophage) and mesenchymal stem cells with their exosome in tumor, metabolic related diseases (Obesity and Neuropsychic diseases) and explore related intervention strategies.
10.	Prof. Yi Fan	The Pathogenesis and Therapeutic Potential of Kidney Disease	The research work of our team mainly focuses on the pathogenesis of renal disease including the role of epigenetic modification, immune responses and lipid metabolism in the regulation of renal function.
11.	Prof. Wei Zhao	Pathogen Infection and Innate Immunity	We are trying to work out how the innate immune system is tightly regulated in viral infection and inflammatory disease. Innate immune system is the first line against viral infection and the

			optimal target for vaccine development and drug design. We focused on the mechanisms of modulation of the antiviral innate immune signaling and identified that multiple molecules were involved in the regulation of pattern-recognition receptors (PRRs) induced signal transduction and elucidated their underlying molecular mechanisms. These findings enriched the knowledge of the interaction between immune system and viruses, and thus provided theoretical basis for the design of novel antiviral drugs and vaccines. In the follow-up researches, we will keep on focusing on viral infection and host innate immunity which is a fundamental scientific issue in virology and immunology.
12.	Prof. Aijun Hao	Stem Cell and Neurodevelopmental Diseases	1. The regulatory mechanism of neural stem cells proliferation and differentiation. 2. Stem cell therapy for nervous system disease. 3. Glioma and glioma stem cells.
13.	Prof. Jihui Jia	Pathogen Infection and Malignant Transformation	Pathogen infection and malignant transformation
14.	Prof. Chengjiang Gao	Innate immunity and inflammation	Our team mainly studies the mechanisms by which the innate immune signal transduction controls viral and fungal infection, as well as inflammation. We hope to provide fundamental basis for the drug/vaccine design to treat infectious disease, inflammatory disease and tumors. We are also interested in dissecting the molecular mechanism related to various inflammation-related diseases such as atherosclerosis, ischemic cerebrovascular disease and Parkinson's disease.
15.	Prof. Feng Gao	Radioactive Molecular Probe and Molecular imaging	Development and translation of Novel Radio-pharmaceuticals.
16.	Prof. Peng Gao	Genetic alterations and expression regulation of human malignancies	Genetic alterations and non-coding RNA regulation in the development and progression of human malignancies.
17.	Prof. Yaoqin Gong	Genetic mechanisms underlying	The main goal of our team is to understand the mechanisms underlying developmental diseases. Previously, we identified CUL4B, which

		developmental diseases	assembles the CUL4B-RING E3 ligase complex as a disease-causing gene for X linked mental retardation. Recently, we focus on its roles in development and diseases. We found that CUL4B participates in the regulation of diverse physiologically and developmentally controlled processes by targeting specific substrates for ubiquitin dependent degradation or modification. Lack of CUL4B in mice markedly compromises extra embryonic development, hematopoiesis, neurogenesis and adipogenesis. These findings define CUL4B as an important regulator in diverse developmentally controlled processes.
18.	Prof. Bing Han	Pathogenic Mechanisms and Control Technology in Parasitic Diseases	Parasitic effectors and host modulation. Parasitic infection and immunity. Non-coding RNA regulation in the parasitic diseases.
19.	Prof. Lihui Han	Infection and immunological microenvironment	The molecular mechanism involved in the development process of malignancies, including hepatocarcinoma, gastric cancer, breast cancer and their targeted intervention. The molecular mechanism involved in the formation of Helicobacter pylori biofilm and multi-drug resistance.The regulatory mechanism involved in infection induced inflammation and the pathogenesis of malignant transformation caused by H.pylori infection.The immunological regulatory effect of normal flora and its involved mechanism.
20.	Prof. Bo Han	Molecular characterization of hormone-related cancer progression and metastasis	Molecular classification of hormone-related cancers involving prostate cancer. Characterization of hormone-related cancer progression and identification of novel prognostic biomarkers.
21.	Prof. Guangwei Wei	Investigation and targeted intervention of key tumor molecules	1. Oncogenes and tumor suppressor genes in cancer development and progression. 2. Proteomics and protein modifications in cancer. 3. Biomarkers and targets for tumor recurrence, metastasis and treatment.