BOTANIC GARDEN OF SMITH COLLEGE

KEW INTERNSHIPS
WHAT IS KEW?

Kew is a district in the London Borough of Richmond upon Thames. It is the location of the Royal Botanic Gardens.
Houses the largest and most diverse botanical and mycological collections in the world.
INTERNSHIP

• 12-week Internship (May-August) at the Royal Botanic Gardens, Kew in London, England focused on molecular biology and conservation genetics.

• 2 Smith students are chosen and each works on a separate project in two different labs.

• Both interns learn state-of-the-art scientific techniques and meet scientists from around the world.

• Both interns have the potential to be co-authors on scientific publications resulting from their research.

Adri Grow ‘20J extracting DNA from an orchid leaf tissue sample. Samples will be analyzed by the sequencer.
WHAT IS INCLUDED?

01 $6000 STIPEND

02 round-trip PLANE TICKET + TRAVEL COSTS

03 VISA + SPONSORSHIP COSTS

04 TRAVELERS INSURANCE
Students board in local boarding houses, which provide single rooms within family housing.

- Housing is paid for out of the stipend and averages $200 per week.
- Student cover their own food costs.

Housing and Meals
Students rank which project is their top choice and their preferences are considered in the final placements.

Population genetics of clonal-sexual orchids and implications for conservation

Many terrestrial orchids reproduce both sexually and clonally, through vegetative propagation. Some recent studies, led by the Conservation Genetics Team of the Jodrell Laboratory, have shown the importance of clonal reproduction in the maintenance of genetic variation in the lady’s slipper orchid, *Cypripedium calceolus* L. These results have stimulated further questions and hypotheses related to the evolutionary history of clonal-sexual species in temperate biomes, with important implications for conservation.

This internship will be focused on collecting and analysing molecular data, with the aim of increasing our understanding of how patterns of genetic diversity and structure in terrestrial clonal-sexual orchids are correlated. These data will ultimately lead to an increase in our knowledge of the population genetics of Orchidaceae and to improved conservation strategies.

The intern will receive appropriate training (as necessary) in molecular methods for population genetics, including DNA extraction, polymerase chain reaction (PCR) and genotyping. The intern will also have the opportunity to learn bioinformatic analyses relevant to the data collected.
Phylogenomics of the parasitic sandalwood family (Santalaceae) with a particular focus on the genus Thesium in South Africa

Phylogenomics of the parasitic sandalwood family (Santalaceae) with a particular focus on the genus *Thesium* in South Africa. Santalaceae are a widespread family of parasitic plants comprising 44 genera and c. 1,000 species. We aim to reconstruct phylogenetic relationships within the family with a particular focus on the systematics of the largest genus, Thesium, which comprises approximately a third of all species in the family. To achieve this, we will use a targeted enrichment approach developed for Kew’s Plant and Fungal Trees of Life (PAFTOL) project; the family component of the project will be performed in collaboration with PAFTOL. Thesium is a cosmopolitan group with its centre of diversity in the Cape Floristic Region of South Africa where c. 90 species are found. It is in great need of detailed study for gaining a global perspective of its species relationships and diagnostic characters, which will serve as basis for future taxonomic work. This study will be an important contribution to systematic botany and is likely to result in profound new insights into the relationships of a taxonomically difficult group of plants. The intern will be largely laboratory-based and concentrate on the production of genomic data (DNA extraction, library preparation, hybridization and sequencing). There will also be the opportunity to learn some of the bioinformatics skills required to analyse the resulting data and produce phylogenetic trees.
What are you looking for in candidates?
Students should have taken science courses that have developed their laboratory skills.

- Coursework in molecular biology and genomics is particularly relevant.
- Kew will work with students to further develop their research skills - willingness to learn is essential.
APPLICATION PROCESS

applications are due: JANUARY 6th

Review by committee: 9th - 20th

[Possible Interviews: 23rd - 27th]

Recommendations made to Kew: 30th

Kew scientists choose: 30th - February 3rd

Students are notified: February 6th

Students must commit by: February 10th

VISA PROCESS BEGINS IMMEDIATELY AFTER COMMITING
https://garden.smith.edu/education/students/kew-internship
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