Imperial College London

iRecruitment Application Form
RESEARCH POSTS

Job Title Research Associate	Job Reference No NS2015240AM
Dept/Div Department of Mathematics	Applicant No (for office use only)

Personal Details	
Full Name and Title Jaclyn Lang *(include FRS, FREng, FMedSci if appropriate)*	
CID (for internal College applicants)	
Address UCLA Mathematics Department Box 951555 Los Angeles, CA 90095 USA Postcode **90095**	Telephone: Day: +1 303-587-4174 Evening: +1 303-587-4174 Mobile: +1 303-587-4174 Email: jaclynlang@math.ucla.edu
Do you require permission to work in the UK? YES	

Internal Only Vacancies
Please note that only current Imperial College employees and Agency Workers will be considered for internal only vacancies. Casual Workers, Students and applicants not currently employed at Imperial College will not be considered until the vacancy is advertised externally.
Are you a current Imperial College employee? Please provide your CID number:
Are you currently engaged as an Agency Worker at Imperial College? Please provide: Dates of engagement: From To Name of Imperial College manager/supervisor: Department/Division engaged within: *If you carry out work within more than one department/division, please provide details for the position with the furthest extending end date.*

Fair Recruitment
To ensure a fair recruitment process, do you know, or are you related to, any employee of the College or member of an Imperial College committee? NO

Applicant's Referees	
Please give below the names and addresses of two from whom references may be sought, at least one of whom should have recent knowledge of your work; your current employer should normally be included. It is College policy that references must cover the last three years, therefore please ensure the referees you supply below are able to cover this period or include additional referees on a separate sheet of paper.	
Name: Haruzo Hida Position: Professor May we approach this referee before interview? YES	Address: UCLA Mathematics Department Box 951555 Los Angeles, CA 90095, USA Telephone: +1 310-206-3382 Fax : 310-206-6673 Email: hida@math.ucla.edu
Name: Jacques Tilouine Position: Professor May we approach this referee before interview? YES	Address: Université Paris 13 99 Av. J.-B. Clément Villetaneuse 93430, France Telephone: +33-1-49 40 40 87 Fax : +33-1 49 40 35 68 Email: jacques.tilouine@free.fr

Criminal Records Checks

Do you have any convictions, cautions, reprimands or final warnings that are not "protected", as defined by the Rehabilitation of Offenders Act 1974 (Exceptions) Order 1975 (as amended in 2013) by SI 2013 1198 and listed at: www.imperial.ac.uk/hr/procedures/recruitment/criminalrecords/pnc?

NO

Do you have any prosecutions pending against you? If 'YES' please provide details separately in a sealed envelope.
NO

Certain posts are exempt from the Rehabilitation of Offenders Act 1974. This will be indicated in the person specification. Applicants for such posts are required to declare any of the above mentioned convictions, cautions, reprimands or warnings. If this applies to you, please provide details separately in a sealed envelope. This information will only be retrieved for the successful candidate. Information provided by other applicants will be destroyed in a confidential manner. Successful candidates for such positions will require a Disclosure and Barring Service check.

Guaranteed Interview Scheme

As part of its commitment to the Two Ticks scheme, the College operates a Guaranteed Interview Scheme for disabled applicants who meet the essential criteria as detailed in the Job Description/ Person Specification.

If you feel that you have a disability as defined by the Equality Act, you can choose to tick the box below:

Providing that you meet all the essential criteria for the job, you will be invited for interview.

Data Protection Act 1998

Your signature on this document gives the College the right, under the Data Protection Act 1998, to process the information that you have given, including data of a sensitive nature, for processes relating to your application which have been notified to the Offices of the Information Commissioner. Any processing of the data will be in accordance with the College's Data Protection Policy and the processing principles set out in the Act. Application forms of those who are unsuccessful will be destroyed after six months.

Asylum & Immigration Act 1996

The Asylum and Immigration Act 1996 makes it a criminal offence for employers to employ someone who is not entitled to work in the UK. We, therefore, ask prospective employees to produce relevant documentation. Short-listed applicants will receive further details and successful applicants must provide relevant documentation before employment can begin.

Current Employment

From (date)	Name and Address of Employer		
Post		Salary	Notice Required
Duties – please also state Reason for Leaving			

Previous Posts (most recent first). Please account for any gaps where you have not been in employment

From	To	Employer	Post	Duties and Reason for Leaving

Previous Posts (continued)				
From	To	Employer	Post	Duties

Further and Higher Education				
From	To	University/College	Subjects	Results
08/2010	06/2016	University of California, Los Angeles	Mathematics	Ph.D. (GPA: 3.95/4.0)
10/2009	06/2010	Cambridge University	Pure Mathematics	CASM (merit)
08/2005	05/2009	Bryn Mawr College	Mathematics	AB/MA (GPA: 3.947/4.0)

Secondary Education				
From	To	School	Examinations	Results
08/2001	06/2005	Niwot High School (International Baccalaureate Diploma)	Mathematics (higher level) English (higher level) History (higher level) French (standard level) Music (standard level) Physics (standard level)	6/7 6/7 6/7 5/7 5/7 5/7

Member of Technical or Professional Bodies or other qualifications

Statement in Support of Application (continue on separate sheet(s) if required).

Please state why you believe you are a suitable candidate for this post by explaining how you meet its requirements and the experience which you have that is relevant. Please give examples of particular achievements.

I am applying to this post because I am excited about the recent advances in automorphy lifting theorems (ALTs) by Kevin Buzzard and Toby Gee. While my dissertation was not on the topic of ALTs, many of the tools I used are also important for ALTs, including Hida families, Galois representations and their images, and p-adic interpolation. In fact, a key result I prove in my thesis is a certain “lifting theorem.” My proof uses an interplay between deformation theory and automorphic techniques, inspired by the philosophy of ALTs. I am interested in working with Professor Buzzard and Professor Gee to develop new applications of these tools.

I expect to receive my Ph.D. in June 2016. My dissertation, supervised by Haruzo Hida, is in the area of algebraic number theory, specifically on the images of Galois representations associated to ordinary p-adic families of modular Galois representations. The main results of my thesis are written up in a paper that is currently under review at the journal *Algebra and Number Theory*. The tools that I developed to prove my result will likely be useful in proving additional "big image theorems.” Please see my research statement for more detailed information.

I have some research experience outside the area of my dissertation. I was a member of the Shadow Lines project group at Women in Numbers 3, led by Mirela Çiperiani and Jennifer Balakrishnan. We used explicit class field theory to develop and implement an algorithm to compute the "shadow line" associated to certain elliptic curve data, an invariant first introduced by Mazur and Rubin at the 2002 ICM. Through this project I gained experience working with the arithmetic of elliptic curves, explicit class field theory, and Iwasawa theory. In 2014, I was a member of Bjorn Poonen's project group at the Arizona Winter School. We proved a generalization of Poonen's analogue of Bertini's Theorem over finite fields, so I have some experience working with arithmetic geometry, particularly over finite fields.

In addition to the above research projects, I have participated in a number of classes and seminars at that are relevant to the post. I have taken classes from Chandrashekhar Khare on the proof of Serre’s Conjecture and Modularity Lifting Theorems, and I participated in number theory learning seminars on topics including completed cohomology, the Taylor-Wiles method, and arithmetic duality theorems. Furthermore, I have attended numerous conferences and graduate student workshops dedicated to ALTs including the MSRI summer school on New Geometric Techniques in Number Theory (2013) and the Arizona Winter School (2013). Toby Gee was a lecturer at both workshops.

My communication skills have resulted in many invitations to give talks. I have given invited colloquium talks aimed at undergraduate math majors at CalPoly - Pomona and Loyola Marymount University and invited research talks at MIT and the Five Colleges Number Theory Seminar in Amherst. The referees of my paper have described it as "very well written."

Thank you for your time and consideration.

I confirm that the information and details provided on this form, and other information relating to my formal application for employment, are correct. I understand that any false information or misrepresentation would result in my application being disqualified or, if appointed, could lead to my dismissal without notice.

I agree that my application and associated information may be provided to those I nominate as referees, and to those referees who are nominated by the Faculty/Business School. I also agree that it may be necessary to disclose personal and sensitive data between relevant organisations during the recruitment and selection process, and during my employment, e.g. with local NHS Trusts, only where it is necessary to do so, and where such disclosure does not contravene legislation, including provisions of the Equalities Act.

Name of Applicant Jaclyn Lang **Date** 7 November 2015