

## APPLICATIONS

Please submit your application digitally before 14 April 2020 including:

- CV with photograph
- Certificates of bachelor's degree or equivalent, and a German or English transcript thereof
- School-leaving certificate with transcript
- Proof of student status (summer semester 2020)
- Level of knowledge in the above-mentioned disciplines
- Special interest in a particular field of work
- Motivation letter
- Detailed recommendation by at least one university lecturer

Please apply online at:

<https://gsp.fz-juelich.de/application>

Receipt of your application will be confirmed by e-mail.  
Candidates will be selected after the closing date.  
Notification of acceptance will be sent by 20 May 2020.

August							September							October						
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11
10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18
17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25
24	25	26	27	28	29	30	28	29	30					26	27	28	29	30	31	
31																				
Arrival Kickoff Courses							Colloquium							Farewell Departure						



Gueststudents 2019

## FURTHER INFORMATION

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🌐 [www.fz-juelich.de/ias/jsc/gsp](http://www.fz-juelich.de/ias/jsc/gsp)



## DATES

Closing date for applications: 14 April 2020  
Start of the programme: 3 August 2020  
Programming courses: 4 – 14 August 2020  
Colloquium: 29 September 2020  
30 September 2020  
End of the programme: 9 October 2020

## GUEST STUDENT PROGRAMME 2020 JÜLICH SUPERCOMPUTING CENTRE

3 August 2020 – 9 October 2020

Closing Date  
14 April 2020

## SUPPORTED BY



## IMPRINT

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## OUR PROGRAMME

In order to give students the opportunity to familiarize themselves with various aspects of scientific computing as early as possible, the Jülich Supercomputing Centre (JSC) is once again organizing a programme for guest students in the 2020 summer vacation. The programme is supported by CECAM – Centre Européen de Calcul Atomique et Moléculaire and IBM. It targets students of science and engineering, informatics and mathematics who have already completed their first degree but have not yet finished their master's course. The students will work together with scientists from JSC on topics of current interest in research and development. Depending on their previous experience and interests, they will be involved in various fields of work, for example:

### Computational Science, Applied Mathematics

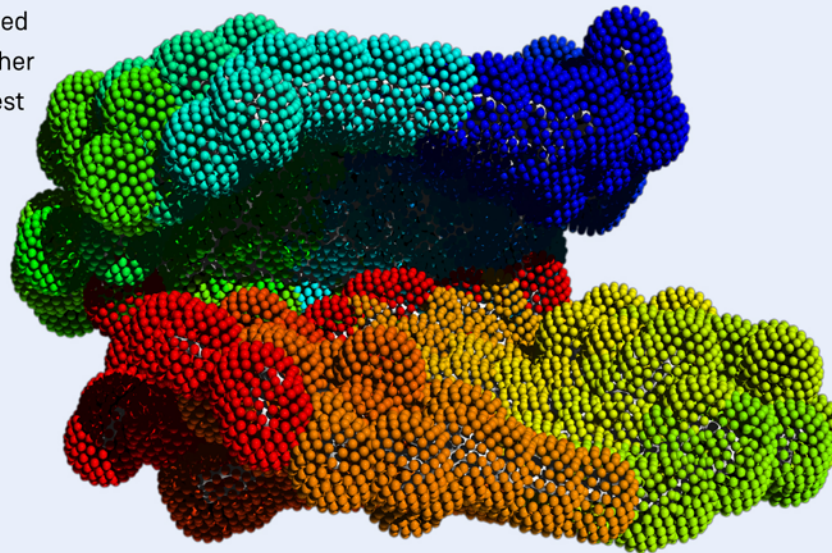
- Modelling and simulation in physics, chemistry and biophysics
- Techniques of parallel MD simulations
- Modelling, simulation and data analysis in neuroscience
- Parallel computational procedures in quantum chemistry and structural mechanics
- Performance evaluation of parallel algorithms in linear algebra
- Mathematical modelling, statistics and data mining

### Computer Architectures, GPU Computing

- GPU-computing, FPGA programming
- High-speed data networks & data management
- Programming models and performance portability

## High-Performance Computing, Visualization

- Performance analysis and optimization of parallel programs
- Programming of hierarchical parallel computer systems
- Distributed applications, interactive control and visualization
- Virtual reality techniques for visualizing scientific data



The programme will run for ten weeks from 3 August to 9 October 2020. The students will be able to use the supercomputers at JSC, including JUWELS, which is one of the largest supercomputers in the world. They should naturally be familiar with computer-oriented areas of their subjects. In addition, they should also have practical computer experience including a good knowledge of programming with C, C++, Python or Fortran on Linux systems.

## PROGRAMME SCHEDULE

The programme starts with an introductory course concerning the techniques of parallel computing and the use of the Jülich supercomputers. After the training week each student will be assigned to a supervisor, who is a member of staff. The students work on a topic of the supervisor's active field of research. In a colloquium at the end of the programme, the students will give presentations on their work and discuss their results with other students and scientists. They will also prepare a final report on their work. Information on the topics and results of previous guest student programmes can be found on the website given below.

## COMPENSATION & ACCOMMODATION

The students will receive an expense allowance and are supposed to reside in Jülich for the entire duration of the programme. Forschungszentrum Jülich will provide accommodation for the duration of the programme. Additionally, participants can apply for reimbursement of travel expenses.



```
int id, p, nam
char processor
MPI::Init(argc, argv);
p = MPI::COMM_WORLD.Get_size();
id = MPI::COMM_WORLD.Get_rank();
MPI_Get_processor_name(processor_name, &nam
cout<<" Processor " << processor_name<<" ID="<<id<<"<<endl;
```