



# SUMMER SCHOOLS

UNIVERSITY OF  
ANGERS - FRANCE

- | **Research**
- | **Vascular** 
- | **Plant science**
- | **Bioinformatics**
- | **Enfance et bien-être**
- | **Les rencontres de l'éthique**

*Share your knowledge with international researchers  
and students from different countries and cultures.*

[www.summerschools.univ-angers.fr](http://www.summerschools.univ-angers.fr)

# ANGERS

## SUMMER SCHOOLS ANGERS 2016

Angers is a **beautiful medieval city** located in western France, in the Loire Valley, which is a UNESCO World Heritage Site, famous for its wines and castles. Angers has a unique 12th century fortress and the world's largest medieval tapestry.

Regularly acknowledged in the national press as one of the leading cities in France for its quality of life and respect for the environment, Angers has now received the first award as "the greenest city in France". With more than 30,000 students every year, in an urban area of 250,000, Angers offers a very dynamic lifestyle with frequent cultural events and festivals all year round.

**The famous "Tour de France" will pass through Angers during the Summer Schools. Participants will have the chance to enjoy this unique event !**

### The University of Angers

The University of Angers, which dates back to the Middle Ages, is known for the quality of its research and the success of its students, both in their studies and in their careers. As a public, comprehensive university, a broad spectrum of fields is covered, but several have become internationally acclaimed, such as plant science and health sciences.

### Our Summer Schools

The program of our Summer Schools brings together innovative teaching and research excellence to allow participating students to experience first hand the methods and practice of research in a variety of fields.

The two week (60h) or one week (30h) programs include lectures by international researchers (max. one hour) followed by questions and discussion, workshops with small groups of students, visits to research institutions and for some students, oral presentations on selected topics.



Angers est une **jolie ville médiévale** située dans l'Ouest de la France, au cœur de la vallée de la Loire, classée au patrimoine mondial de l'Unesco et connue pour ses vins et châteaux. Angers dispose d'une forteresse unique datant du 12<sup>e</sup> siècle et de la plus grande tapisserie médiévale au monde.

Régulièrement citée par la presse nationale pour son agréable cadre de vie, la ville arrive désormais en tête du palmarès des villes les plus vertes de France.

Avec plus de 30 000 étudiants chaque année, Angers est une ville dynamique et propose de nombreux événements culturels tout au long de l'année.

**Le Tour de France passera par Angers pendant la période des écoles d'été. Les participants auront le privilège de profiter de cet événement unique !**

### L'Université d'Angers

La création de l'Université d'Angers date du Moyen-Âge. Aujourd'hui, celle-ci est réputée pour son attractivité scientifique et la réussite de ses étudiants. L'université couvre de nombreuses disciplines, dont certaines reconnues à un niveau international, dont la science des plantes et celles de la santé.

### Nos Écoles d'été

Le programme de nos écoles d'été associe un enseignement innovant et l'excellence scientifique, permettant aux participants de découvrir les méthodes de recherche et de pratiquer celle-ci sur des sujets variés.

Le programme est de 60 heures sur 2 semaines ou 30 heures sur 1 semaine. Celui-ci inclut des conférences dispensées par des chercheurs internationaux (max 1h), suivies de questions et débats, des ateliers en petits groupes, des visites d'instituts de recherche et pour certains étudiants, des présentations orales sur des sujets précis.

# RESEARCH

SUMMER SCHOOLS ANGERS 2016

## 7<sup>th</sup> Edition

27<sup>th</sup> June – 8<sup>th</sup> July 2016

Medical school

University of Angers



### Presentation

This program will show students the links between fundamental sciences and clinical research. The purpose is to give them the opportunity to be exposed to medical research, in an academic medical environment and to facilitate their accession to advanced course degrees such as MD or Pharmacy/PhD programs.

### Workshops and visits

Visits of international research institutes will be organized during the stay such as Oniris in Nantes and Généthon in Paris. The aim of this program is mainly to give practical and interactive classes to students.

Several workshops are therefore organized, among them:

- workshop on "Academic research/Industrial research" (with companies from Atlanpole Biotherapies)
- workshop on "Medical Informatics"
- workshop on "Experimental surgery" at the simulation center

### Sessions

Plenary conference by a renowned professor

- 1 - Brain connectivity
- 2 - Fetal programming
- 3 - Nanomedicine
- 4 - Epigenetics
- 5 - Experimental surgery
- 6 - Medical Informatics
- 7 - Gene therapy
- 8 - Research in microcirculation
- 9 - Mitochondrial diseases
- 10 - Neurogeriatrics
- 11 - From physiology to integrative spatial medicine
- 12 - Vaccination debate

### Invited speakers

- S. Groeschel, Tübingen, DE
- G. Williams, Bristol, UK
- S. Ozanne, Cambridge, UK
- T. Austin, Cambridge, UK
- F. Petak and J Tolnai, Szeged, HU
- C. André, Rennes, FR
- A. Bernkop-Schnurch, Innsbruck, DE
- C. Van Weel, Canberra, AUS
- E. Dursun, Istanbul, TU
- R. Murphy, Dublin, IR

### Criteria

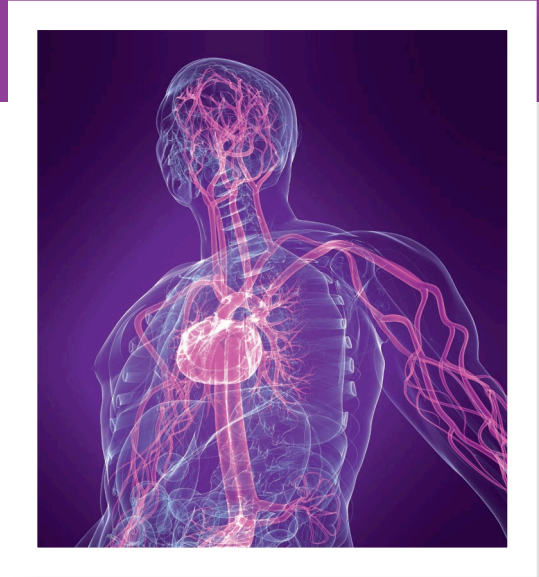
The program is open to undergraduate students from 2<sup>nd</sup> to 4<sup>th</sup> year (medicine or pre-med curricula or midwifery).

### A certificate of attendance and 6 ECTS will be delivered at the end of the courses.

# VASCULAR

SUMMER SCHOOLS ANGERS 2016

## 2<sup>nd</sup> Edition 4<sup>th</sup> – 8<sup>th</sup> July 2016 Medical school University of Angers



### Presentation

From Basic to Clinic

According to World Health Organization, cardiovascular diseases represent the leading health and diseases worldwide. Cardiovascular diseases are linked to the very complex interactions between genes, aging and life style, and various risk factors.

**The VESSAL intensive teaching program** will give an overview of the actual and future knowledge in the field of cardiovascular diseases. Selected thematic will be presented by renowned researchers and clinicians experts in the field who will share with the participants their experience through interactive plenary lectures, workshops, hands-on and laboratory visits.

### Workshops and visits

- Visit of experimental and human vascular research laboratories
- Exercise testing in vascular : disease from theory to practice
- Cardiovascular deconditioning
- Vascular imaging interactive session

### Invited speakers

- B. Levy, Paris, FR
- F. Bari, Szeged, HU
- U. Pohl, München, DE
- R. Murphy, Dublin, IR
- G. Meininger, Missouri, USA

### Local speakers

- P.M. Roy, Angers, FR
- P Asfar, Angers, FR
- L Loufrani, Angers, FR
- I Signolet, Angers, FR
- F Prunier, Angers, FR

### Sessions

- 1 - Inherited Cardiovascular diseases : from gene to function
- 2 - Angiogenesis : fundamental & clinical applications
- 3 - Metabolic diseases and their cardiovascular counterparts
- 4 - Vascular biology : from bench to bedside
- 5 - Hormones and vessels
- 6 - Thrombosis and coagulation
- 7 - Neural control of vasculature
- 8 - Immunity and vascular diseases
- 9 - Micro and macro vascular remodeling in CV diseases
- 10 - Cardiovascular deconditioning on Earth and in Space
- 11 - Usefulness of diagnostic algorithms in vascular diseases

### Criteria

This Summer School is designed for national and international students from the 2<sup>nd</sup> undergraduate up to PhD in Medicine, Pharmaceutics and Life Sciences.

### A certificate of attendance and 6 ECTS will be delivered at the end of the courses.

# PLANT SCIENCE

SUMMER SCHOOLS ANGERS 2016

## 2<sup>nd</sup> Edition

27<sup>th</sup> June – 8<sup>th</sup> July 2016

Faculty of Sciences

University of Angers



### Presentation

This program will provide the students with insight into new developments in plant science research.

The purpose is to give students the opportunity to be exposed to multidisciplinary approaches in the field of sustainable management of plant health and quality.

### Workshops

The program relies on interactive classes and hands-on activities. Several workshops are organized, among them:

- "qPFD : an innovative device for screening and evaluating plant elicitors",
- "In Silico design of plant pathogen identification tests",
- "Macroscopic and microscopic observations of medicinal plants",
- "Genetic determinism of QTL",
- "Rose phenotyping and genotyping",
- "Transcriptomic data analysis",
- "Analytical methods for assessing fruit quality",
- "Biological data analysis : plant phenotyping".

Participants will have access to the 11<sup>th</sup> meeting of the SFBV (French Society of Plant Biology).

### Visits of international research institutes

- GEVES lab (the French Group for the Study and Inspection of Varieties and Seeds)
- LSV-ANSES (Plant Health Laboratory)
- CIRM-CFBP (French Collection of Bacteria associated to Plants)
- ITEIPMAI (Institute for medicinal and aromatic plants)
- VILMORIN site company
- Museum of Natural History (Paris)

### Sessions

Plenary conference by a renowned professor

- 1 - Plant defense stimulation, plant protection and plant memory
- 2 - Genomic and Bacterial diagnostic
- 3 - Weed control in intercropping systems
- 4 - Physiology and Nutritional Quality of seeds
- 5 - Post-harvest fruit quality management
- 6 - Parasitic plants

### Invited speakers

- I. Toth, James Hutton Institute, UK
- K. Gallardo, INRA Dijon, FR
- D. Jamar, CRA-W, BE
- M. Orsel, INRA Angers, FR
- H. Bouwmeester, Wageningen, NL

### Criteria

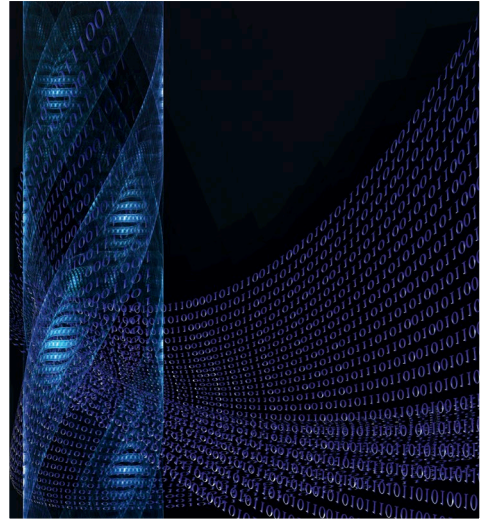
The program is open to undergraduate students in the fields of agriculture, plant science and biological science who may be interested in pursuing Ph.D. programs and envision a career in plant science/ agriculture.

**A certificate of attendance and 6 ECTS will be delivered at the end of the courses.**

# BIOINFORMATICS

SUMMER SCHOOLS ANGERS 2016

■ **2<sup>nd</sup> Edition**  
**27<sup>th</sup> June – 8<sup>th</sup> July 2016**  
Faculty of Sciences  
University of Angers



## ■ Presentation

Bioinformatics is an exciting new area of interdisciplinary science. The future of many biological and medical studies promotes smart use of computational tools as an essential knowledge in scientists background. The program developed in this Summer School aims at bringing students the ability to conduct ambitious biological studies from big data analysis to extract relevant biomarkers to large scale models engineering in order to enhance biological production. Topics to be covered include different fields of bioinformatics: data processing of genomic data, optimization methods in systems biology, statistics and classification for biomarker extraction, meta-genomics and a few more. Focus is also made on valorization concerns and technology transfer.

## ■ Workshops

The program relies **on interactive classes and hands-on activities**. Several workshops are organized, among them :

- Case study and guided exercises on "Computer modeling of living systems",
- From the raw sequences to the non-synonymous variants : a short exome analysis,
- Analysis of proteomics data.

## ■ Visits

- Biopolymers core facility in Nantes
- Genomics and bioinformatics core facility in Nantes

## ■ Invited speakers

- J. CHIQUET, Paris, FR
- A. BOCKMAYR, Berlin, DE
- L. MAIGNIEN, Western Brittany, FR
- B. GENIN, Integragen, FR

## ■ Sessions

- Plenary conference by a renowned professor
- Warm up session: Informatics for beginners (R and Python)
  - **Statistics** and classification on genomic data
  - Introduction to **metabolic networks**
  - Acquisition and analysis of **proteomics** data
  - Next generation sequencing (**NGS**) in genetics and genomics
  - **Environmental Genomics**
  - Ontologies and biology databases
  - Bioinformatics and Business companies
  - Association mapping and **system genetics** : from GWAs to function
  - **Optimization methods** for bioinformatics

## ■ Criteria

This program is ideal for those wishing to develop advanced skills in bioinformatics. Prior experience in computer science and computer programming is not required. This Summer School is aimed at undergraduate students from 3<sup>rd</sup> year and graduate students (M. or Ph.D) in biological sciences / medicine / pharmacy / informatics / engineering or other scientific background.

■ **A certificate of attendance and 6 ECTS will be delivered at the end of the courses.**

# ENFANCE ET BIEN-ÊTRE

ÉCOLES D'ÉTÉ ANGERS 2016

■ **1<sup>re</sup> édition**  
**27 juin – 2 juillet 2016**  
UFR Santé  
Université d'Angers



## ■ Présentation

Le programme abordera la thématique du bien-être de l'enfant (0-18 ans) dans une approche interdisciplinaire croisant la médecine de l'enfant et les sciences humaines et sociales.

Il s'agit de présenter l'avancée et le renouvellement des connaissances sur les différentes dimensions du bien-être de l'enfant dans les contextes de santé, de handicap, de loisirs, d'apprentissage, d'intégration citoyenne et sociale.

Chaque session sera organisée en deux temps : un état des connaissances suivi d'un atelier interactif entre les intervenants et les participants.

## ■ Ateliers

- Initiation à la pratique de la philosophie avec les enfants (méthodologie et ressources) : "Parler de l'identité et de l'estime de soi". En lien avec la chaire UNESCO "Pratique de la philosophie avec les enfants",
- Petit-déjeuner organisé avec Nova Child, cluster réunissant des professionnels industriels, scientifiques et techniques, au service de l'Innovation pour le bien-être de l'enfant.

## ■ Intervenants extérieurs

- S. Brochard, CHU Brest, FR
- E. Chirouter, Nantes, FR
- M. Fahrni, Montréal UQAM, CA
- A-M. Fontaine, Porto, PO
- V. Lodenos, Education Nationale, FR
- B. Rocher, CHU Nantes, FR
- P. Van Bogaert, Hopital Erasme, Bruxelles, BE
- C. Vuillerot, CHU Lyon, FR
- O. Zanna, Le Mans, FR

## ■ Programme

Conférence plénière assurée par un professeur de renom

- 1 - Histoire de la médecine pédiatrique
- 2 - Droits des enfants
- 3 - Psychologie de l'enfant et de l'adolescent
- 4 - Enfance et genre
- 5 - Technologies numériques
- 6 - Neuropsychologie de l'enfant
- 7 - Bien-être à l'école
- 8 - Santé, échelle d'évaluation et qualité de vie
- 9 - Approches neurophysiologiques du développement
- 10 - Handicap de l'enfant
- 11 - Médecine pédiatrique

## ■ Critères

Le programme est ouvert aux étudiants intéressés par l'approche de l'enfant, en santé à partir de la 2<sup>e</sup> année et aux étudiants de sciences humaines et sociales en master et doctorat. Le programme est également ouvert aux professionnels de l'éducation, de la santé et du secteur médico-social.

■ **Un certificat de présence sera délivré à la fin du programme, ainsi que des ECTS (par exemple 3ECTS pour les étudiants angevins de l'UFR Santé).**

# PRACTICAL INFORMATION | INFORMATIONS PRATIQUES

## SUMMER SCHOOLS ANGERS 2016 | ÉCOLES D'ÉTÉ 2016

### Admission criteria

The selection of students will be made based on motivation, level of English and previous scientific experience, if any.

### Application procedure

There is a specific application form for each school. It is available on the page of the concerned school. The number of places is limited to 35 participants for each school.

**Deadline to apply : 15<sup>th</sup> April 2016**

### Fees

#### Research, Vascular, Bioinformatics, Plant Science

€650 until the 13<sup>th</sup> of March

€750 after this date

#### Well-being of children

€400 until the 13<sup>th</sup> of March

€500 after this date

#### Specific fees for professionals

€500 for professionals from Angers

€800 for others

Fees include : tuition, accommodation, lunches, scheduled excursions and extracurricular activities during the course.

Fees don't include : costs of passport, visa, health insurance, travel to and from Angers

### Social activities

Our Summer Schools not only offer you a fine selection of interesting courses and scientific visits, they also aim at giving their participants an unforgettable stay in France.

Therefore we offer all of our participants an attractive social program, including excursions, sport, social gathering and festivities...The perfect setting for you to get to know one another ! A few examples of activities : welcome barbecue, kayak session, day trip on the Atlantic coast...

These activities are mainly free, or cost no more than 5 euros.

### Housing, catering and transport

Fully furnished single rooms with bathrooms and showers.

There are several kitchens on each floor that you will share with other students.

You will get a bike and a tramway/bus pass for the length of your stay for free.

By bike, the student residence is about 5 minutes from the city centre and 15 minutes from the University.

A group of students will be in charge of taking care of you during your whole stay and organize some great activities.

### Critères d'admission

La sélection des participants se fait sur des critères de motivation, le niveau dans la langue requise et l'expérience scientifique.

### Procédure de candidature

Chaque école dispose d'un formulaire de candidature spécifique. Celui-ci est disponible à partir de la page de présentation de l'école concernée.

Le nombre de places est limité à 35 participants par école.

**Le délai de candidature est fixé au 15 avril 2016.**

### Tarifs

#### Recherche, Vasculaire, Bioinformatique, Végétal

650€ pour une inscription avant le 13 mars

750€ après cette date

#### Enfance et bien-être

400€ pour une inscription avant le 13 mars

500€ après cette date

#### Tarifs spécifiques pour les professionnels

500€ pour les professionnels d'Angers

800€ pour les extérieurs

Ces frais incluent : l'inscription au programme, l'hébergement (excepté pour les professionnels d'Angers), les déjeuners et les activités prévues dans le cadre du programme.

Ces frais n'incluent pas : les frais de passeport, visa, l'assurance maladie, le déplacement pour se rendre à Angers.

### Programme social

En plus d'un programme scientifique attractif, nos écoles d'été permettent de vivre un séjour inoubliable à Angers !

Un certain nombre d'activités sont proposées (kayak, visites, barbecue d'accueil...) favorisant les échanges et la découverte du patrimoine local.

Ces activités sont gratuites ou ne coûtent pas plus de 5€.

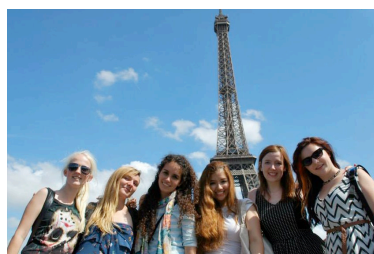
### Logement, restauration et transport

Des chambres simples individuelles en cité universitaire sont mises à disposition des participants pour la durée de l'école. Celles-ci sont entièrement meublées et équipées de sanitaires et douches. Une cuisine commune est située à chaque étage de la résidence.

Il vous sera remis gratuitement un pass tramway-bus ainsi qu'un vélo pour la durée du séjour.

La cité universitaire se situe à 5 minutes en vélo du centre-ville et 15 minutes de l'université.

Un groupe d'étudiants vacataires sera présent pour vous accueillir, vous conseiller et organiser quelques activités annexes au programme.







Further information :  
[summerschools@univ-angers.fr](mailto:summerschools@univ-angers.fr)

## École Les rencontres de l'éthique

Cette année, l'école sur l'éthique (dispensée en français) aura lieu à Brest, du 28 juin au 1<sup>er</sup> juillet 2016.

[Cliquez sur ce lien pour en savoir plus](#)



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