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**3rd INTERNATIONAL CONFERENCE ON  
ALGORITHMS FOR COMPUTATIONAL BIOLOGY**

**AlCoB 2016**

**Trujillo, Spain**

**June 21-22, 2016**

Organized by:

Computer Architecture and Logic Design Group (ARCO)  
University of Extremadura

Extremadura Centre for Advanced Technologies (CETA-CIEMAT)

Research Group on Mathematical Linguistics (GRLMC)  
Rovira i Virgili University

<http://grammars.grlmc.com/alcob2016/>

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**AIMS:**

AlCoB aims at promoting and displaying excellent research using string and graph algorithms and combinatorial optimization to deal with problems in biological sequence analysis, genome rearrangement, evolutionary trees, and structure prediction.

Previous events were held in Tarragona (2014) and Mexico City (2015).

The conference will address several of the current challenges in computational biology by investigating algorithms aimed at:

- 1) assembling sequence reads into a complete genome,
- 2) identifying gene structures in the genome,
- 3) recognizing regulatory motifs,
- 4) aligning nucleotides and comparing genomes,
- 5) reconstructing regulatory networks of genes, and
- 6) inferring the evolutionary phylogeny of species.

Particular focus will be put on methodology and significant room will be reserved to young scholars at the beginning of their career.

**VENUE:**

AlCoB 2016 will take place in Trujillo, homeland of the so-called “conquistadores” who arrived in Peru in the XVI century. The venue will be the Extremadura Centre for Advanced Technologies.

**SCOPE:**

Topics of either theoretical or applied interest include, but are not limited to:

Exact sequence analysis  
Approximate sequence analysis  
Pairwise sequence alignment  
Multiple sequence alignment  
Sequence assembly  
Genome rearrangement  
Regulatory motif finding  
Phylogeny reconstruction  
Phylogeny comparison  
Structure prediction  
Compressive genomics  
Proteomics: molecular pathways, interaction networks  
Transcriptomics: splicing variants, isoform inference and quantification, differential analysis  
Next-generation sequencing: population genomics, metagenomics, metatranscriptomics  
Microbiome analysis  
Systems biology

### **STRUCTURE:**

AlCoB 2016 will consist of:

invited lectures  
peer-reviewed contributions

### **INVITED SPEAKERS:**

Evan Eichler (University of Washington, Seattle), *De Novo Genome Assembly and Structural Variation*

S. Cenk Sahinalp (Simon Fraser University), *Big Data Algorithmics for Cancer Genomics*

David Sankoff (University of Ottawa), *The Evolution of Gene Order in the Flowering Plants*

### **PROGRAMME COMMITTEE:**

Can Alkan (Bilkent University, Ankara, Turkey)

Timothy L. Bailey (University of Queensland, Brisbane, Australia)

Vladimir Bajic (King Abdullah University of Science and Technology, Thuwal, Saudi Arabia)

Geoff Barton (University of Dundee, UK)

Inanc Birol (University of British Columbia, Vancouver, Canada)

Jacek Błazewicz (Poznań University of Technology, Poland)

Alan P. Boyle (University of Michigan, Ann Arbor, USA)

Vladimir Brusic (Nazarbayev University, Astana, Kazakhstan)

Liming Cai (University of Georgia, Athens, USA)

Rita Casadio (University of Bologna, Italy)

Ken Chen (University of Texas MD Anderson Cancer Center, Houston, USA)

Jason Ernst (University of California, Los Angeles, USA)

Laurent Gautier (Novartis Institutes for BioMedical Research, Cambridge, USA)

Manolo Gouy (Claude Bernard University Lyon 1, France)

Michael Gribskov (Purdue University, West Lafayette, USA)

Iman Hajirasouliha (Stanford University, USA)

John Hancock (Genome Analysis Centre, Norwich, UK)

Artemis Hatzigeorgiou (University of Thessaly, Volos, Greece)

Fereydoon Hormozdiari (University of California, Davis, USA)

Kazutaka Katoh (Osaka University, Japan)  
Evangelos Kranakis (Carleton University, Ottawa, Canada)  
Lukasz Kurgan (University of Alberta, Edmonton, Canada)  
Bill Majoros (Duke University, Durham, USA)  
Lennart Martens (Ghent University, Belgium)  
Maria-Jesus Martin (European Bioinformatics Institute, Hinxton, UK)  
Carlos Martín-Vide (Rovira i Virgili University, Tarragona, Spain, chair)  
Folker Meyer (Argonne National Laboratory, USA)  
Kenta Nakai (University of Tokyo, Japan)  
Matteo Pellegrini (University of California, Los Angeles, USA)  
Mihaela Perteza (Johns Hopkins University, Baltimore, USA)  
Ben Raphael (Brown University, Providence, USA)  
Paolo Ribeca (Pirbright Institute, Woking, UK)  
Denis Shields (University College Dublin, Ireland)  
Fredj Tekaia (Pasteur Institute, Paris, France)  
Alessandro Verri (University of Genova, Italy)  
Fuli Yu (Baylor College of Medicine, Houston, USA)  
Daniel Zerbino (European Bioinformatics Institute, Hinxton, UK)  
Kaizhong Zhang (University of Western Ontario, London, Canada)  
Weixiong Zhang (Washington University in St. Louis, USA)  
Zhongming Zhao (Vanderbilt University, Nashville, USA)  
Yaoqi Zhou (Griffith University, Brisbane, Australia)

#### **ORGANIZING COMMITTEE:**

María Botón-Fernández (Trujillo, co-chair)  
Carlos Martín-Vide (Tarragona, co-chair)  
Miguel A. Vega-Rodríguez (Cáceres, co-chair)  
Florentina Lilica Voicu (Tarragona)

#### **LOCAL COMMITTEE:**

Leslye Alarcón (Trujillo)  
María Botón-Fernández (Trujillo, co-chair)  
José M. Granado-Criado (Cáceres)  
Sergio Santander-Jiménez (Cáceres)  
Miguel A. Vega-Rodríguez (Cáceres, co-chair)

#### **SUBMISSIONS:**

Authors are invited to submit non-anonymized papers in English presenting original and unpublished research. Papers should not exceed 12 single-spaced pages (including eventual appendices, references, proofs, etc.) and should be prepared according to the standard format for Springer Verlag's LNCS series (see <http://www.springer.com/computer/lncs?SGWID=0-164-6-793341-0>).

Submissions have to be uploaded to:

<https://www.easychair.org/conferences/?conf=alcob2016>

#### **PUBLICATIONS:**

A volume of proceedings published by Springer in the LNCS/LNBI series will be available by the time of the conference.

A special issue of the journal IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB, 2014 JCR impact factor: 1.438, quartile Q1) will be later published containing peer-reviewed substantially extended versions of some of the papers contributed to the conference. Submissions to it will be by invitation.

**REGISTRATION:**

The period for registration is open from October 30, 2015 to June 21, 2016. The registration form can be found at:

<http://grammars.grlmc.com/alcob2016/Registration.php>

**DEADLINES:**

Paper submission: February 2, 2016 (23:59 CET) – EXTENDED –

Notification of paper acceptance or rejection: March 1, 2016

Final version of the paper for the LNCS/LNBI proceedings: March 15, 2016

Early registration: March 15, 2016

Late registration: June 7, 2016

Submission to the journal special issue: September 23, 2016

**QUESTIONS AND FURTHER INFORMATION:**

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