INVITED SPEAKERS:
Ian Donaldson, Blueprint Initiative, Mount Sinai Hospital of Toronto
William S. Hayes, AstraZeneca

ORGANIZING COMMITTEE:
Lynette Hirschman, Chair, The MITRE Corporation
James Pustejovsky, Co-Chair, Brandeis University
Carol Friedman, Columbia University
William S. Hayes, AstraZeneca R&D
Marc Light, The University of Iowa
Ian Donaldson, Blueprint Initiative, Mount Sinai Hospital

PROGRAM COMMITTEE:
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Joyce A. Mitchell, University of Missouri - Columbia
Alexander A. Morgan, The MITRE Corporation
See-Kiong Ng, Institute for Infocomm Research, Singapore
Padmini Srinivasan, The University of Iowa
Robert Stevens, University of Manchester
Lorraine Tanabe, National Center for Biotechnology Information
Jun’ichi Tsujii, Department of Computer Science, University of Tokyo
Bonnie Webber, University of Edinburgh
Pierre Zwiegenbaum, Assistance Publique - Hopitaux de Paris, INaLCO, INSERM

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INTRODUCTION

This volume contains the proceedings of the HLT-NAACL 2004 Workshop: BioLINK 2004, Linking Biological Literature, Ontologies and Databases, held in Boston on May 6, 2004. Our goal in this workshop has been to bring together researchers from the fields of bioinformatics, natural language processing, ontologies, data mining, and information retrieval. We have focused on tools that can provide improved access and cross-indexing for the biomedical literature, databases and ontologies.

This year’s workshop builds on previous workshops in this area, including two previous ACL workshops on biomedical text mining (2002: http://www.cpmc.columbia.edu/nlpwg/ACL02.html; and 2003: http://www-tsujii.is.s.u-tokyo.ac.jp/ACL03/bionlp.htm), and three meetings of the Special Interest Group for Text Mining in Biology at the annual meeting of the Intelligent Systems for Molecular Biology: http://www.pdg.cnb.uam.es/BioLINK.

The workshop features two sessions of plenary talks (six papers) and a poster session at the end of the workshop. The first session of talks deals with document clustering and text categorization themes; the second session focuses on resources and techniques for information extraction. The four reviewed posters are included in the workshop proceedings as extended abstracts. They describe recent work on developing resources for terminologies and annotation, as well as text mining applications for cross-linkage of biological resources.

The 2004 workshop is structured to encourage exchange between the “producers” of text mining tools from the Human Language Technology community and the “consumers” of these tools in the biology community. To this end, there are two invited talks on biologists’ current needs for text mining: William Hayes on “Text Mining - Next Steps for Drug Discovery” and Ian Donaldson on “Text-mining Needs and Solutions for the Biomolecular Interaction Network Database (BIND).” The workshop concludes with a panel of publishers, addressing issues of full text access and applications of text mining to the biological literature from the publishing perspective. Our aim is to begin a dialogue with the publishers to explore ways to improve access to the vast free-text resources contained in the biological literature, as well as to expose the publisher community to the benefits of text mining. In keeping with the theme of “tools for users,” we have also invited commercial companies to participate, to foster exchange between the research community and commercial applications of text mining tools for biology.

We believe that by bringing together the different stakeholders in this rapidly growing area to focus on linking biomedical resources and providing improved access through text mining, we can encourage new research approaches and speed the application of emerging technologies to significant biological problems.

Lynette Hirschman
May, 2004
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A Large Scale Terminology Resource for Biomedical Text Processing
Henk Harkema, Robert Gaizauskas, Mark Hepple, Angus Roberts, Ian Roberts, Neil Davis and Yikun Guo

Integrated Annotation for Biomedical Information Extraction
Seth Kulick, Ann Bies, Mark Liberman, Mark Mandel, Ryan McDonald, Martha Palmer, Andrew Schein, Lyle Ungar, Scott Winters and Pete White

Using Natural Language Processing, LocusLink and the Gene Ontology to Compare OMIM to MEDLINE
Bisharah Libbus, Halil Kilicoglu, Thomas C. Rindflesch, James G. Mork and Alan R. Aronson

A Design Methodology for a Biomedical Literature Indexing Tool Using the Rhetoric of Science
Robert E Mercer and Chrysanne Di Marco
BIOLINK 2004 PROGRAM

Thursday, May 6

Session 1: Text Mining for Biomedical Literature
8:30-9:00
Mining MEDLINE: Postulating a Beneficial Role for Curcumin Longa in Retinal Diseases
Padmini Srinivasan, Bisharah Libbus and Aditya Kumar Sehgal

9:00-9:30
Clustering MeSH Representations of Biomedical Literature
Craig A. Struble and Chitti Dharmanolla

9:30-10:00
A Study of Text Categorization for Model Organism Databases
Hongfang Liu and Cathy Wu

10:00-10:30 BREAK

Poster Boasters:
10:30-10:33
A Large Scale Terminology Resource for Biomedical Text Processing
Henk Harkema, Robert Gaizauskas, Mark Hepple, Angus Roberts, Ian Roberts, Neil Davis and Yikun Guo

10:33-10:36
Integrated Annotation for Biomedical Information Extraction
Seth Kulick, Ann Bies, Mark Liberman, Mark Mandel, Ryan McDonald, Martha Palmer, Andrew Schein, Lyle Ungar, Scott Winters and Pete White

10:36-10:39
Using Natural Language Processing, LocusLink and the Gene Ontology to Compare OMIM to MEDLINE
Bisharah Libbus, Halil Kilicoglu, Thomas C. Rindflesch, James G. Mork and Alan R. Aronson

10:39-10:42
A Design Methodology for Biomedical Information Extraction
Robert E. Mercer and Chrysanne DiMarco

Invited Talk:
10:45-11:15
Text Mining - Next Steps for Drug Discovery
William S. Hayes

Lightning Presentations:
11:15-12:00 Vendors have 5 minutes each

12:00-1:30 LUNCH

Session 2: Information Extraction: Tools and Resources
1:30-2:00
The Language of Bioscience: Facts, Speculations, and Statements In Between
Marc Light, Xin Ying Qiu and Padmini Srinivasan

2:00-2:30
A Resource for Constructing Customized Test Suites for Molecular Biology Entity Identification Systems
K. Bretonnel Cohen, Lorraine Tanabe, Shuhei Kinoshita and Lawrence Hunter

2:30-3:00
Gene/Protein/Family Name Recognition in Biomedical Literature
Asako Koike and Toshihisa Takagi

3:00-3:30 BREAK
BIOLINK 2004 PROGRAM

Thursday, May 6 Continued

Invited Talk:
3:30-4:00  
*Text-mining Needs and Solutions for the Biomolecular Interaction Network Database (BIND)*  
Ian Donaldson

Panel Discussion:
4:00-5:00  
*Publisher Perspective on Broad Full-text Literature Access for Text Mining in Academic and Corporate Endeavors*  
William S. Hayes (moderator)

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