

EIC REPORT – July 2008

# STATUS OF THE IT TRANSACTIONS

## ▶ Mailing dates

Jan	Feb	Mar	Apr	May	Jun	Jul
1/3	1/22	2/21	3/20	4/24	5/23	6/19

## ▶ Sub-to-Pub data


















Pub Title	Issue Date	Mail Date	Frequency	Wks to 1st Rev	Wks Last Rev to Pub	Wks in Queue	2007 Mean Sub to Pub Pub	2006 Mean Sub to Pub Pub	Better/Worse(-)	2007 Median Sub to Pub Pub	2006 Median Sub to Pub Pub	Better/Worse(-)
Information Theory												
T-IT	6/1/2007	5/23/2007	12	73	44	34	108	64	-44	88	64	-22
T-IT-Correspondence	6/1/2007	5/23/2007	12	51	21	11	72	65	-7	69	64	-5
Average				64	35	25	94	65	-29	79	64	-15

## ▶ Submission data

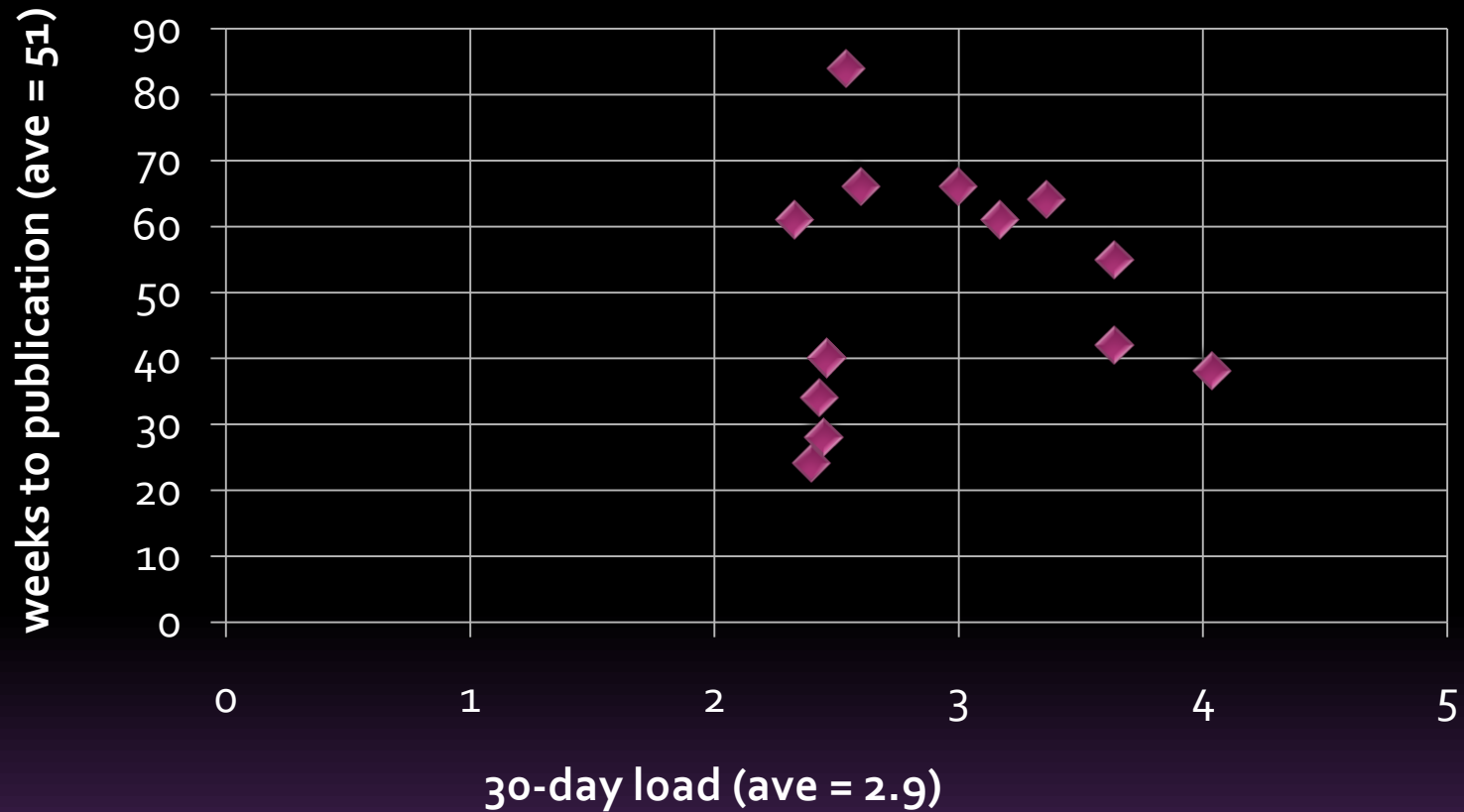
Papers submitted, January to June 2008: 484

Papers submitted, January to June 2007: 456

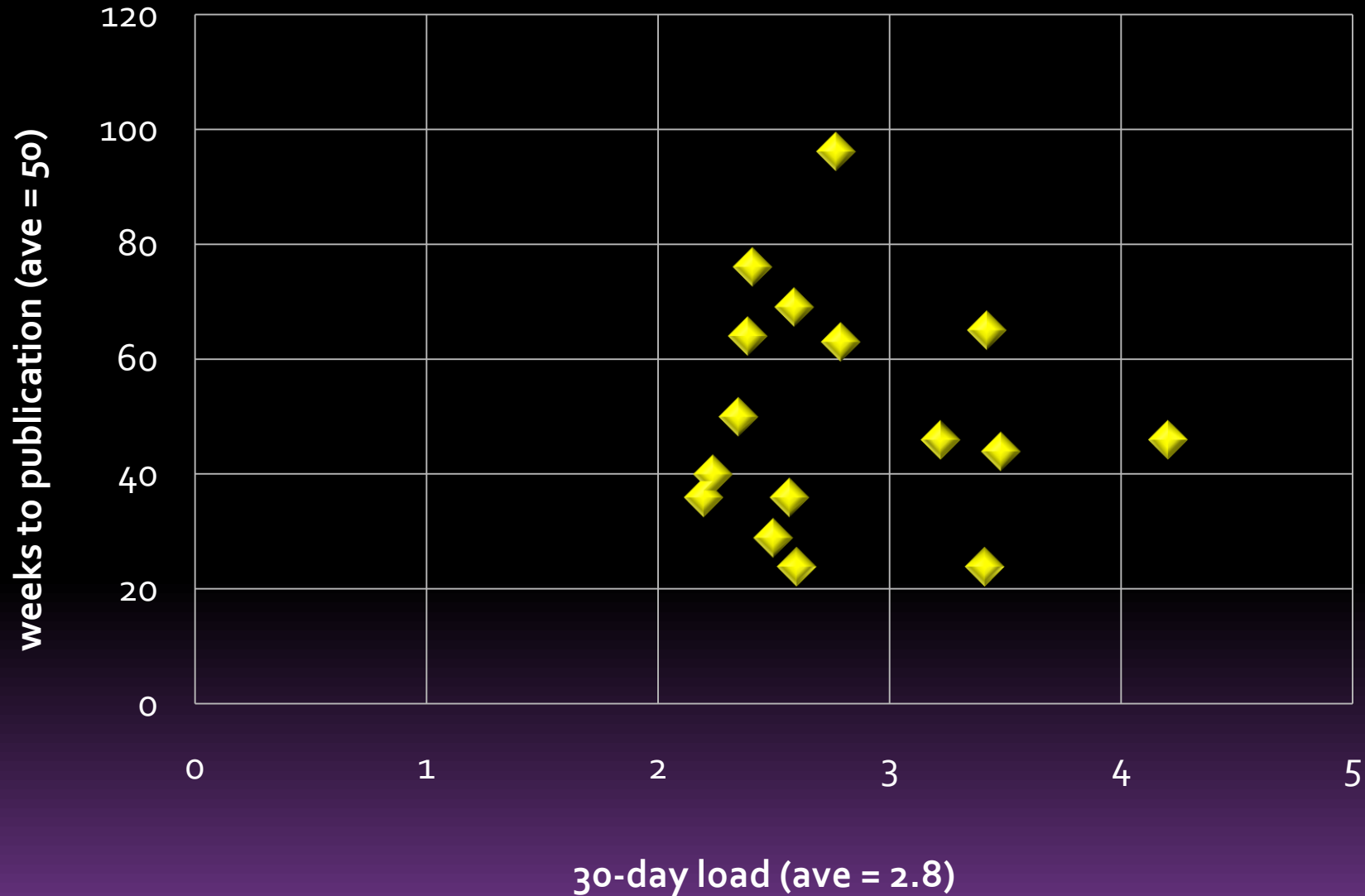
## ▶ Hit parade of submissions

- Network information theory 
- Network coding 
- Cooperation & relaying  
- Algebraic coding theory 
- LDPC codes 
- Space—time block coding  
- Sequences 
- Cryptography  
- Quantum information theory 
- Communications 
- Detection and estimation 
- Pattern recognition 
- Compressed sensing  

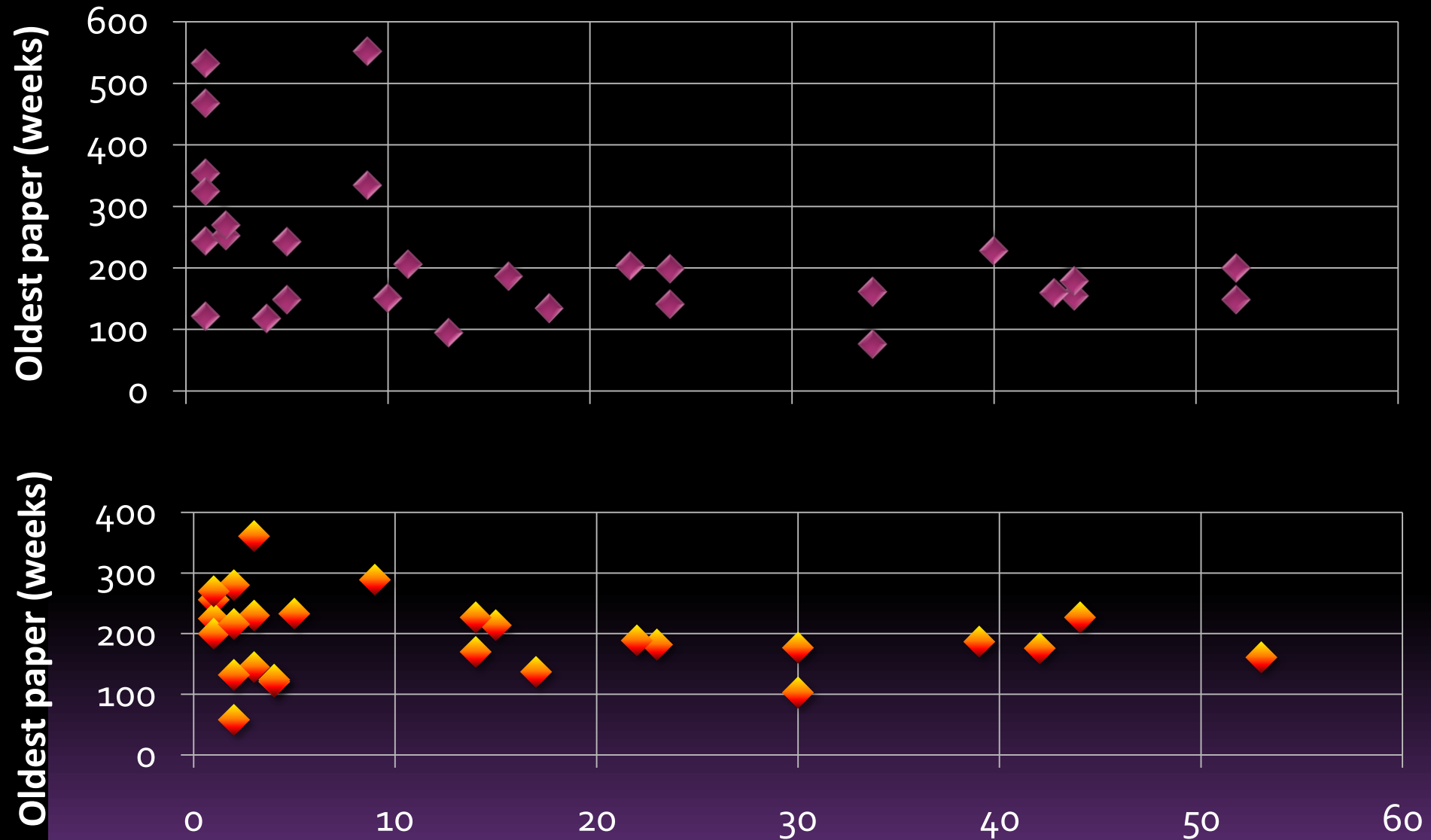
## ▶ AE performance I (December 20, 2007)



## ▶ AE performance I (December 20, 2007)



# ▶ AE performance II (Dec. 20, 2007, vs. June 30, 2008)



# ► Associate Editors lineup

URBASHI MITRA

*At Large*

MICHELLE EFFROS

*Source Coding*

GADIEL SEROUSSI

*Coding Theory*

STEVEN W. McLAUGHLIN

*Coding Techniques*

ADAM KRZYŻAK

*Pattern Recognition,  
Statistical Learning  
and Inference*

GUANG GONG

*Sequences*

YOSSEF STEINBERG

*Shannon Theory*

WOJCIECH SZPANKOWSKI

*Source Coding*

TUVI ETZION

*Coding Theory*

HANS-ANDREA LOELIGER

*Coding Techniques*

ALEX GRANT

*Communications*

PRAMOD VISWANATH

*Communications*

ANNE CANTEAUT

*Complexity and Cryptography*

HIROSUKE YAMAMOTO

*Shannon Theory*

LUDO TOLHUIZEN

*Coding Theory*

TOM RICHARDSON

*Coding Theory*

HELMUT BÖLCSKEI

*Detection and Estimation*

HOLGER BOCHE

*Communications*

EJI OKAMOTO

*Complexity and Cryptography*

GERHARD KRAMER

*Shannon Theory*

ILYA DUMER

*Coding Theory*

ANDREAS WINTER

*Quantum Information Theory*

LANG TONG

*Detection and Estimation*

ANDREA GOLDSMITH

*Communications*

EYTAN MODIANO

*Communication Networks*

JOHN B. ANDERSON

*Book Reviews*

26 in July 2007

JOHN B. ANDERSON

*Book Reviews*

HOLGER BOCHE

*Communications*

RANDALL BERT

*Communication Networks*

HELMUT BÖLCSKEI

*Detection and Estimation*

ANNE CANTEAUT

*Complexity and Cryptography*

ILYA DUMER

*Coding Theory*

TUVI ETZION

*Coding Theory*

TORU FUJIWARA

*Complexity and Cryptography*

ANDREA GOLDSMITH

*Communications*

GUANG GONG

*Sequences*

ALEX GRANT

*Communications*

IOANNIS KONTOYIANNIS

*Shannon Theory*

GERHARD KRAMER

*Shannon Theory*

ADAM KRZYŻAK

*Pattern Recognition,  
Statistical Learning, and Inference*

HANS-ANDREA LOELIGER

*Coding Techniques*

URBASHI MITRA

*At Large*

EYTAN MODIANO

*Communication Networks*

ARJA NOHRATIYA

*Communication Networks*

ERIK ORIENTLICH

*Source Coding*

SUNDAR RAJAN

*Coding Theory*

JUSTIN ROMBERG

*Signal Processing*

IGAL SASON

*Coding Theory*

GADIEL SEROUSSI

*Coding Theory*

WOJCIECH SZPANKOWSKI

*Source Coding*

GIORGIO TARICCO

*Communications*

LUDO TOLHUIZEN

*Coding Theory*

LANG TONG

*Detection and Estimation*

SENNUR ULUKUS

*Communication Networks*

EMANUELE VITERBO

*Coding Techniques*

ANDREAS WINTER

*Quantum Information Theory*

EN-HUI YANG

*Source Coding*

HIROSUKE YAMAMOTO

*Shannon Theory*

LIEHONG ZHENG

*Communications*

33 in July 2008

**New entries:** Franz Hlawatsch (Detection and Estimation), Rei Safavi-Naini, (Complexity and Cryptography) Michael Gastpar, (Shannon Theory/Network Info. Th.), Keith Martin, (Complexity and Cryptography) Patrick Hayden, (Quantum Information Theory), Adriaan van Wijngaarden, (Communications)

# ► Special issue, December 2008



**IEEE Information Theory Society**

## ***CALL FOR PAPERS: Special Issue of the IEEE Transactions on Information Theory on Molecular Biology and Neuroscience***

Recently, information theory has gained significant attention in various areas of life sciences, most prominently in bioinformatics, computational molecular biology, and neuroscience. But despite the fact that information theoretic methods were successfully employed for predicting the correlation between DNA mutations and disease, identifying protein binding sequences in nucleic acids, analyzing neural spike trains and higher functionalities of cognitive systems, many more problems at the interface of information theory and biology remain unsolved.

In order to address such problems – including quantifying the information content of shapes, complex patterns, and self-organizing networks, determining spatio-temporal firing codes of neurons, and formalizing the notion of information context – new information-theoretic techniques and analytical frameworks are required.

As natural sciences are becoming more diverse with respect to their number of fields and specialties, a paradigm of union and cooperation between these fields and information theory would represent a major breakthrough. Information theory has the potential to galvanize the field of bioinformatics and biomedical sciences, and these two disciplines can bolster each other towards new insight and discoveries.

The goals of the special issue are to provide the reader with an overview of the most important problems in molecular biology and neuroscience, the state of the art applications of information theory in this field, and to compile a collection of new research results on this subject. The special issue will consist of a mixture of invited and contributed papers. In the former case, leading experts in the area of bioinformatics and neuroscience will be invited to provide the interested reader with comprehensive, yet highly approachable introductions to the biological fields of interest. In the latter case, possible topics for the special issue include, but are not limited to:

- Statistical and information-theoretic analysis of DNA and protein sequences, DNA and protein sequence compression, Motif finding, DNA sequencing, and tandem mass spectrometry data analysis.
- Coding theoretic problems in design and analysis of DNA, CGH, SNP, and tissue microarrays, Modeling and analysis of gene regulatory networks, small-sample gene expression classification and clustering.
- Evolutionary and genomic distance measures, Channel models for DNA mutations and information transfer.
- New information-theoretic measures for analyzing shapes, complex networks, and spatio-temporal maps.
- Information embedded in timing and neuron spiking activity analysis.
- Control and information transfer in sensory systems.

### **IMPORTANT DATES**

**Paper proposal submission deadline:** November 1<sup>st</sup>, 2008

**Paper submission deadline:** January 2009

**Completion of first round of reviews:** April 2009

**Final review and selection of papers:** August 2009

**Final manuscripts to IEEE:** October 2009

**Publication of the Special Issue:** December 2009

### **INSTRUCTIONS FOR MANUSCRIPT PREPARATION:**

In order to ensure the highest quality of published papers, authors will be asked to submit first a paper proposal, not exceeding 5 pages in length. The proposals will be reviewed by experts in life science and information theory, and only those papers deemed relevant to both areas will be accepted for review.

### **GUEST EDITORS (IN ALPHABETICAL ORDER)**

- **Gil Alterovitz**, Harvard Medical School/Massachusetts Institute of Technology
- **Gerard Battail**, Ecole Nationale Supérieure des Télécommunications, Paris
- **Todd P. Coleman**, Sean Meyn, **Olga Milenkovic**, and **Nathan Price**, University of Illinois at Urbana-Champaign
- **Joachim Hagenauer**, Technische Universität München
- **Marco Ramoni**, Harvard Medical School
- **Ilya Shmulevich**, Institute for Systems Biology, University of Washington, Seattle
- **Wojciech Szpankowski**, Purdue University

# PAREJA vs. MANUSCRIPT CENTRAL

# Feature: Reviewer search

## Pareja

- User must enter three fields (first and last name, email). Searches the records that start exactly with those fields. Entering only the last name or part of it is not enough.
- Sometimes returns unwanted results and may insert records with erroneous email addresses.
- Visualization requires painful window scrolling in order to get to the needed record.
- Interface is not intuitive. The button “update/add reviewer” has multiple behaviors and is used to search or add reviewer.

## Manuscript Central (CL version)

- Has a frame for reviewer search that allows better scanning of the database.
- There is a button to insert the reviewer found.
- There is a button to insert a new reviewer.
- Visualizes up to eight reviewers in a short frame (no need to scroll) without disturbing details un address and phone numbers. Everything is available **at a glance**.

# Feature: User interface

## Pareja

- Primitive, does not summarize information at different levels but always provides the maximum details available. Users have to scroll up and down in order to find the information needed.

## Manuscript Central (CL version)

- Frame-based, separates information in different areas and provides different levels of detail as needed.

# Feature: E-mail

## Pareja

- Generates emails of limited length (the insertion of the abstract would exceed this length).
- Requires the insertion of email templates to be generated from scratch by the AE.
- **Does not store emails**

## Manuscript Central (CL version)

- All emails to reviewers are stored in the system.
- Provides sophisticated handling of reminders.
- Email templates are customized on a journal-wide basis even though AE's may modify them.
- As a result, correspondence from the journal to the authors is more systematic and professional.

# Feature: Management

## Pareja

- The system owner can probably see everything (including reviewer names) while the EiC has limited access, cannot access AEs' record.

## Manuscript Central (CL version)

- The EiC has full control on every feature of the system.