



Proceedings of  
WSE'99

**1<sup>st</sup> International Workshop on  
Web Site Evolution**

October 5, 1999

Atlanta, GA

*Edited by Scott Tilley*

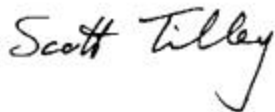
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## Foreword

**Welcome to WSE'99!** The goal of this workshop is to bring together the software engineering, reverse engineering for program understanding, and information technology communities to focus on techniques for Web site evolution. Web sites have moved from supplementary mechanisms for communication to become a primary component of most organization's infrastructure. Rather than serving simply as a passive means of disseminating information, Web sites have become the integration hub for a wide variety of activities, including electronic commerce, streaming media, and online collaboration.

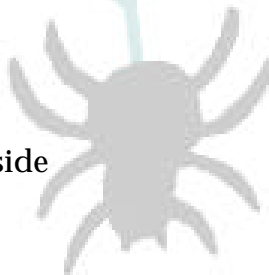
With "older" Web sites now just passing five years on the Net, it seems prudent to examine how they can evolve in a more disciplined manner. As Web sites age, they suffer from some of the same afflictions as any complex software system: their structure degrades, maintenance becomes increasingly problematic, and legacy applications and interfaces hinder evolution. However, Web sites are also unique in several aspects. For example, they are often developed by people who may lack a formal computer science or software engineering background.

I am particularly pleased that the inaugural meeting of this nascent research community is being co-located with WCRE'99, the 6<sup>th</sup> Working Conference on Reverse Engineering. WCRE has a history of providing enjoyable, informative, and stimulating meetings. I hope WSE can follow a similar path, and that you enjoy the workshop.



*Scott Tilley*

**Scott Tilley**  
General Chair, WSE'99  
University of California, Riverside



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### Program Committee

Cornelia Boldyreff, Univ. of Durham, UK  
Elliot Chikofsky, META Group, USA  
Hausi Müller, Univ. of Victoria, Canada

Jock Rader, Raytheon Systems Co., USA  
Lisa Schmeiser, schmeiser.com, USA  
Chris Verhoef, Univ. of Amsterdam, The Netherlands

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## Papers

### **WEB Sites: Files, Programs or Databases?**

*G. Antoniol, G. Canfora, A. Cimitile and A. De Lucia*

### **An Architecture for Maintaining Link Structure of a Website**

*S. Arnold and L. Mark*

### **WHAT: Web Hosting Analysis Tool**

*L. Cherkasova and M. DeSouza*

### **Aspects to Consider for Understanding Web Site Evolution**

*E. Chikofsky*

### **Server-side Tracking of New Documents**

*F. Dougli*

### **Evolving an Engineered Web**

*D. Eichmann*

### **Evolving the Web Into an Accessible Collaborative Learning Environment**

*K. Hebenstreit*

### **Web Site Evolution: Designing and Developing for the Future**

*L. Schmeiser*

### **Web Site Evolution - Towards a Flexible Integration of Data and its Representation**

*M.-A. Storey and J. Jahnke*

### **On the Emergence of the Renaissance Software Engineer**

*S. Tilley and S. Huang*

### **Management of Web Site Evolution**

*J. Verner and H. Müller*

### **Characterising Evolution in Web Sites: Some Case Studies**

*P. Warren, C. Boldyreff, and M. Munro*

### **Toward Reusable and Evolvable Web Sites**

*K. Wong*

### **Enabling Technologies for Web-Based Legacy System Integration**

*Y. Zou and K. Kontogiannis*

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## Agenda

- 9:00a - **Welcome**  
9:15a Scott Tilley, University of California at Riverside, USA
- 9:15a - **Software Engineering Issues**  
10:15a
  - Presentation: "Web Site Evolution - Towards a Flexible Integration of Data and its Representation," *M.-A. Storey (University of Victoria, Canada)*
  - Discussion
- 10:15a - *Coffee Break*  
10:30a
- 10:30a - **Software Engineering Issues (continued)**  
12:00p
  - Presentation: "Server-side Tracking of New Documents," *F. Douglass (AT&T Research, USA)*
  - Discussion
- 12:00p - *Lunch*  
1:00p
- 1:00p - **Technology Issues**  
2:30p
  - Presentation: "On the Emergence of the Renaissance Software Engineer," *S. Tilley (University of California at Riverside, USA)*
  - Presentation: "Enabling Technologies for Web-Based Legacy System Integration," *Y. Zou (University of Waterloo, Canada)*
  - Discussion
- 2:30p - *Coffee Break*  
3:00p
- 3:00p - **Reuse and Product Lines**  
4:00p
  - Presentation: "Toward Reusable and Evolvable Web Sites," *K. Wong (University of Alberta, Canada)*
  - Discussion
- 4:00p - **Case Studies; Open Discussion; Next Steps**  
5:00p
- 5:00p **Adjourn**

This is a **draft** agenda reflecting possible discussion topics and confirmed presentations as of Friday, October 1, 1999. The agenda will be adjusted as required during the workshop.