

## Curriculum Vitae of Anna Scaglione

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Electrical and Computer Engineering  
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### Education

#### **1995-1999**

Università di Roma "La Sapienza" - Rome, Italy  
*Doctor of Philosophy*

#### **1990-1995**

Università di Roma "La Sapienza" - Rome, Italy  
*Laurea Degree. Graduated magna cum laude*

### Professional Experience

#### **July 2008 to present**

Department of Electrical and Computer Engineering , Davis, CA (USA)  
*Associate Professor*

#### **July 2006 to July 2008**

Department of Electrical and Computer Engineering , Cornell University - Ithaca, NY (USA)  
*Associate Professor*

#### **July 2001 to July 2006**

Department of Electrical and Computer Engineering , Cornell University - Ithaca, NY (USA)  
*Assistant Professor*

#### **August 2000/ June 2001**

Department of Electrical and Computer Engineering of the University of New Mexico -  
Albuquerque, NM (USA)  
*Assistant Professor*

#### **March 1999/ May 2000**

Department of Electrical and Computer Engineering of the University of Minnesota -  
Minneapolis, MN (USA)  
*Post-Doctoral Researcher*

### Sabbatical appointments

#### **December 2006 to present (sabbatical)**

Center for Neuroscience & Courant Institute, NYU  
*Visiting Scholar*

#### **September-December 2006 (sabbatical)**

Audiovisual Communications Laboratory, I&C Ecole Polytechnique Fédérale de Lausanne - EPFL  
*Visiting Professor*

### Honors and Awards

- 2000 *IEEE Signal Processing Transactions Best Paper Award (in the Signal Processing for Communication area)*
  - *for the paper co-authored with G.B. Giannakis and S. Barbarossa "Redundant Filterbank Precoders and Equalizers Part I and II" Volume 47, No. 7, Page(s): 1988-2022, July 1999.*
- 2002 *NSF Career Award*
  - *"Precoding for high bit rate wireless modems"*
- 2005 *Ellersick Best Paper Award (MILCOM 2005)*
  - *for the paper co-authored with Y. W. Hong, Rajit Manohar and Birsen Sirkeci Mergen, entitled "Dense networks are also energy efficient: when more is less."*
- 2005 *Best paper for Young Authors of the Taiwan IEEE Comsoc/Information theory section*
  - *Co-author with Y. W. Hong, for the paper entitled "A Scalable Synchronization Protocol For Large Scale Sensor Networks And Its Applications", IEEE Journal on Selected Areas in Communications, JSAC, Vol. 23, Issue 5, May 2005 pp. 1085 - 1099*

### Professional Activities

#### **Invited lectures**

- UC San Diego, "An avalanche of help: analyzing cooperative broadcast schemes in the limit", May 2009
- Caltech, "An avalanche of help: analyzing cooperative broadcast schemes in the limit", March 2009
- UC Berkeley, "Gossiping in Groups" October 2008
- University of Naples, Federico II, Short Course for PhD candidates, "Precoding for Wireless Systems", February 2009
- Keynote speaker of the conference of COLCOM'08, Popayan, Colombia, September 2008.

- Keynote speaker of the conference Signal Processing Advances in Wireless Communications '08 (SPAWC'08), "The transmission of correlated information in networks and sensor systems", Recife, Brazil, July 2008.
- Syracuse University, "The decentralized estimation officers problem" February 6 2008
- ITA Workshop, "The decentralized estimation officers problem", A. Scaglione, M. Ercan Yildiz, Can Aysal, January 2008
- Philips Research, "Randomized Distributed Cooperation", July, 2007.
- Brooklyn Polytechnic, "Randomized Distributed Cooperation", July, 2007.
- University of Connecticut, "Synchronization, computation and coordination in sensor systems", March 26, 2007.
- IPAM workshop, "Data driven sensor access architectures for sensor networks" January 8, 2007
- Telcordia Technologies, "Cooperative Communications in Mobile Ad-Hoc Networks: Rethinking the Link Abstraction", May 22, 2006
- MIT-Stochastic Eigen-Analysis workshop, November 2005:
- UC-San Diego "Content based Multiple Access: "Combining Source coding and Multiple Access for Scalable Sensor networks" 25-April -2005
- Stanford Colloquium "Content based Multiple Access: "Combining Source coding and Multiple Access for Scalable Sensor networks" 08-February-2005
- MIT Applied Math Colloquium "Application of the Theory of Random matrices in Information Systems and Data Processing", 25-October 2004
- MIT –LIDS Colloquium: "Content based Multiple Access: Combining Source coding and Multiple Access for Scalable Sensor networks", 26-October 2004
- ICCCP Panel "Future Challenges in Sensor Networks: The quest for scalability", 10 October 2004
- Talk entitled: "Distributed Multi-hop Sensor Networks: Cooperative Schemes for Data Compression and Modulation"
  - University of Rome "La Sapienza", January 9, 2004
  - Rochester Institute of Technology, January 27, 2004
  - New York Polytechnic, February 13, 2004
- Corning Inc., Fiber Theory Group, Sullivan Park, 15 March 2004 "Cooperative wireless networks: a framework to improve the scalability of wireless multi-hop networks"
- General Electric, Albany, 17 March 2004 "Energy-Efficient Cooperative Broadcasting and Synchronization Techniques for Large Scale Distributed Connectionless Networks"
- North Carolina State University, February 21, 2003, "Signal Processing strategies for Broadcast Communications in Large Sensor Networks: the advantages of a Bottom-Up approach"

- University of Texas Austin, March 8, 2001 , “The Statistics of Random Eigenvalues and Their Application to Space Time Coding and Multiple Access Channels”
- Corning Inc., Fiber Theory Group, Sullivan Park November 2001, “An Overview on the state of the art in the design of Wireless Modems”

### **Reviewing Activities**

- *Reviewer for IEEE Transactions on Signal Processing, IEEE Transactions on Communications, IEEE Transactions on Wireless Communications, IEEE Transactions on Information Theory, IEEE Transactions on Vehicular Technology.*
- *Technical Committee Member for the IEEE Conferences ICC2003, Globecom2004, SPAWC 2004, ICASSP 2004 and 2005, IPSN 2005, ICASSP 2005, ISPL 2005, Globecom 2005, WirelessCom 2005, ISPL 2006, ICC 2006, Globecom 2006, Basenet 2006, ISPN 2006, ICASSP 2006, WCNC 2006, ISPL 2007, ICC 2007, ICASSP 2007, ISIT2007, SPAWC2008, ICC2008, SPAWC 09, ICASSP '09, VTC'09, Eusipco'09, ICC2009, Globecom2009, Infocom'09.*
- *NSF Panel reviewer for CISE, FMF, Nets, CRI, (in 2002, 2004, 2005, 2006)*

### **Consulting and Industrial Interactions**

*(2005) Cingular Wireless*

Consulted for reliability measurements on the 911 location service offered by the Cingular Wireless network.

*(2005) Telcordia Technologies, Morristown, NJ.*

Joint ONR proposal - BAA 04-008 “MIMO Precoding and Multi-Node Diversity Enhancing the Range and Reliability of HF Transmission” submitted in July 2004 and currently funded in its 3<sup>rd</sup> Phase.

*(2004) Raytheon UTD*

*Consulted for Phase 1 Army STTR contract for topic A05-T028 “Minimalist Short-Range Wearable Network for Soldier Training”. The proposal was based on the connectionless protocols in [J19]*

*(2003) Telcordia Technologies, Morristown, NJ.*

Contributed to a joint DARPA proposal in response to BAA 03-06 with topic “Connectionless Networks”. The interaction is continuing through the submission of a new proposal to a 6.2 ONR program. The project is entitled “Enhancing UAV Communication Systems”

*(2003) Chesapeake Sciences Corporation, Millersville, MD 21108*

Consulted to determine what type of off the shelves wireless technology would be suitable for data fusion with application to a military sensor network deployed in a rural area to monitor river traffic.

*(1998) Dune Ingegneria dei Sistemi, Rome, Italy*

Consulting for the Shallow Water Acoustic communication Network (SWAN) project, (E. C. -D. G. XII-MAST Commission, project MAS3-CT97-0107), funded by the European

Community, aimed at designing digital modulation techniques for under-water communication and blind equalization.

## **Service Activities**

### **Professional Societies**

- *Associate Editor for:* IEEE Transactions on Signal Processing from 2008 to present and of the IEEE Transactions on Wireless Communications, from 2002 to 2005.
- *Co-Guest Editor* of the Communication Magazine Special Issue on Power Line Communications “Broadband is Power: Internet Access through the Power Line Networks” , May 2003
- *General Co-chair* of the IEEE workshop SPAWC 2005, New York City, June 05-08 2005
- *Member of the*
  - *IEEE Signal Processing for Communications Committee, since 2004*
  - *IEEE Power Line Communications Committee, from 2005-2006.*
- *International Liason for the IEEE workshop SPAWC2004, Publicity Chair for the IEEE workshop SPAWC 2003, Registration Chair: ICASSP 2008.*

### **University**

- *UC Davis: Chair of the Outreach and Enrichment Committee, member of the Merit and Promotion committee, Graduate Committee and Exam Committee*
- *Cornell University: Curriculum and Standards Committee*
- *Cornell University: Member of the Hiring Committee in the Systems area and of the Manager Hiring Committee, 2006*
- *Cornell University: Member of the General Hiring Committee, 2005*
- *Cornell University: Member of the Graduate Committee, 2003-2004-2005*
- *University of New Mexico: Member of Faculty Search Committee, 2001*

### **Outreach**

- Instructor for the CURIE Academy, (one-week program for high school girls who excel in math and science) <http://www.csl.cornell.edu/curie/>

## **Summary of External Funding**

- Welch Allyn (270K\$) (2009-2011) **(Co-PI, with Alyssa Apsel and Rajit Manohar )** “Protocols for Data Exchange on Remote Sensing Platforms”
- NSF (165K\$) (2009-2012) **(Co-PI, with Elza Erkip, Shiv Panwar, Yao Wang NYU-Poly)** “Unlocking Capacity for Wireless Access Networks through Robust Cooperative Cross-Layer Design”
- NSF (0834582): (2009 2011)**(Co-PI, with Alyssa Apsel and Rajit Manohar 764 K\$)** “CSR-DMSS, TM: Distributed Computing With an Ad-Hoc Network”

- NSF - CCF - Collaborative Research (0729074): (2008-2010)(**Co-PI**, with Tara Javidi and Kristi Morgensen 292K\$) “New Communication Infrastructures For Networked Coordinated Control”
- NeTS-ProWin -- COLLABORATIVE RESEARCH (0626751): (2006-2010) (**PI**, with M. Gastpar, J.N. Laneman & Z. Haas, \$900,532) “A new taxonomy for cooperative wireless networking”,
- NSF – FMF CCF – 0514243 (2005-2008) (sole **PI**, 393,281\$) “Scalable Scheduling and Transmission for Sensor Systems”
- ONR - BAA 04-008 “MIMO Precoding and Multi-Node Diversity Enhancing the Range and Reliability of HF Transmission” (**Co-PI**, Phase I (2006-2007- 18 months): 160K\$ to Cornell; Phase II (2007-2008- 18 months) 160K\$ to Cornell) (PI S. Galli, Telcordia Tec. Inc., Co-PIs T. Banwell Telcordia Tec. Inc. and Lang Tong, Cornell U.) Phase III (2009-2010) 193K\$ to Cornell.
- NSF - ITR CCR- 042827(2004-2010) (**Co-PI**, 1,000,000\$)“Activity-Driven Computing and Communication for Cooperative Distributed Networks” (co-Pi with Rajit Manohar, Cornell U.)
- NSF Grant CCR-0431077 SGER (2004) (sole **PI**, 95K\$): “Cooperative networks: a framework to derive scalable cross-layer designs”
- NSF [Career Award] CCR-0133635 (2002-2005), (sole **PI**, 350K\$): “Precoding for high bit rate wireless modems”
- ONR DURIP (2002-2003) (**Co-PI**, 497K\$)“Cornell Mobile Wireless and Sensor Network Test bed” funding to buy equipment for wireless networks experiments (*with L. Tong (PI), R. Manohar and S. Servetto, Cornell U.*)
- NSF Grant CCR-0347514 SGER (2003) (sole **PI**, 75K\$): “Scalable cooperative communications in adaptive large scale networks inspired by natural swarms”
- NSF Grant CCR-0227676 SGER (2002) (**PI**, 99K\$): “Routing and Data Compression” (with S. Servetto, Cornell U.)

### Teaching summary

#### **Courses taught and enrollment (details in the Teaching Contributions Statement)**

##### EEC 161 Probability

*Offered at **UC Davis**—Spring Quarter 2009*

##### Enrollment:

- 40 Students in 2009

##### EEC 289 Mobile Communications

*Offered at **UC Davis**—Winter Quarter 2009*

##### Enrollment:

- 11 Students in 2009

##### ECE 220 Signals and Systems

*Offered at **Cornell University**—September-December 2007*

##### Enrollment:

- 80 Students in 2007

ECE 567 EE 567 - Digital Communications

Offered at **Cornell University**--January-May 2006-2008

Enrollment:

- 20 Students in 2006
- 10 Students in 2008

ECE 568 EE 568 - Mobile Communications

Offered at **Cornell University**---September-December 2001/January-May 2003-2004-2005

Enrollment:

- 11 Students 2001, 12 Students in 2003, 6 students in 2004, 6 students in 2005.

ECE 468- Telecommunication Systems II

Offered at **Cornell University** -- January- May 2002

Enrollment:

- 30 students

ECE 411 - Random Signals in Communications and Signal Processing

Offered at **Cornell University** August –December 2003, 2004 and 2005

Enrollment:

- 30 students in 2003, 32 students in 2004, 52 students in 2005

ENGRG 150 – Freshman Advising Seminar

Offered at **Cornell University** August –December 2005

Enrollment:

- 16 students

EE 595-091 - Digital Communications

Offered at the **University of New Mexico** --- September-December 2000

Enrollment:

- 5 Students

EE 595-011 - Spread Spectrum Communications

Offered at the **University of New Mexico**---January-May 2001

Enrollment:

- 10 Students

EE 3025 - Statistical methods in Electrical and Computer Engineering

Offered at the **University of Minnesota** --- June-August 2001

Enrollment:

- 26 Students

**Research and publications list**

**List of students advised in research**

Postdoctoral affiliates:

**2008- to present**

Ramy Tannious;

Zhifang Wang, sponsored by UIUC center for Trustworthy Cyber Infrastructure for Power networks (TCIP)

**2007-2008** Dr. Tuncer Can Aysal, Currently at CreateNet, Trieste, Italy

Graduate Students:

**2008 to present:** Lin Li, Andrea Ruetschi

**2006 to present:** Roberto Pagliari

**2005 to present:** Shrut Kirti, Matthew Sharp, Ercan Yildiz,

**2001 to 2006:** Azadeh Vosoughi, (PhD in May 2006, thesis "Tracking and Equalizing channels in communication systems and data compression") joined the faculty at the University of Rochester in September 2006.

**2002 to 2006:** Birsen Sirkeci (PhD in May 2006, thesis "Distributed Cooperative Communications in Large Scale Wireless Networks"), a Postdoctoral Researcher at UC Berkley in 2007, she joined the faculty at San Jose' University in September 2007.

**2001 to 2005:** Yao-Win-Hong (PhD in August 2005, thesis "Data Driven Communications for Large Scale Wireless Sensor Networks") joined the faculty at National Tsing Hua University – NTHU - in Taiwan),

Masters Students:

**2001-2004:** Atul Salhotra (graduated in January 2004, Cornell University)

**2001-2003:** Obianuju Ndili (graduated in August 2003, Cornell University)

**2000-2001:** Unal Sakoglu (graduated May 2001, University of New Mexico)

Masters of Engineering Students (one year degree)

**graduated in May 2002:** Gaelle Isabelle Protat, Rahul Kopikar, Francisco Rafael Bastistas

**graduated in May 2003:** Santiago Castillo, Luke Hejnar

**graduated in August 2003:** Dalia Burgos, Laura Hotca

**graduated in December 2003:** Alan Tsui, Avik Sur

**graduated in May 2005:** Jade Lin

**graduated in May 2006:** Dennis Yueping Leung, Zheshen Zhuang

Undergraduates

**summer 2002:** (Summer Project) Luke Hejnar, Yulin Wang

**fall 2002:** Honors Project Linda Pan, Olasubomi Oluwatobi Awe,

**spring 2003:** Marvin Chan, Eng Hwa Leonard Lim, Zhi Wei Kam

**summer 2003:** Lih Feng Cheow, Chihiro Fukami, Aman Chawla

**fall 2004:** Aman Chawla

**spring 2004:** Lih Feng Cheow, Abhijeet Agarwal

**fall 2005:** Bibo Xu

**spring 2006:** Jeff Woodworth

**fall 2007:** Eric Alexander Jarva

**Summer 2009:** David Perkins, Chaoyi Ye

### Collaborators

Prof. S. Barbarossa (University of Rome), Prof. G. B. Giannakis (University of Minnesota), Prof. S. Alouini (University of Minnesota), Prof. P. Stoica (University of Uppsala), Prof. Sergio Servetto (Cornell University), Prof. Mihaela Van der Schaar (UC Davis), Prof. Pramod Varshney (Syracuse University), Prof. Sheila Hemami (Cornell U.), Prof. Lang Tong (Cornell U.), Prof. Dennis Goeckel, Prof. Nicholas Laneman, Prof. Francesco Verde (University of Naples), Prof. Elza Erkip, Prof. Tara Javidi, Prof. Kristi Morgansen.

*Graduate Advisor:* Prof. S. Barbarossa (University of Rome),  
*Postdoctoral Advisor:* Prof. G. B. Giannakis (University of Minnesota)

### Publications

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#### Contributions to Books

##### Book chapters

[B8] Anna Scaglione, Yao-Win Hong and Birsen Sirkeci-Mergen, Part A, Chapter IV, **Cooperative strategies in dense sensor networks** book edited by Gianluigi Ferrari, to appear in "Sensor Networks: Where Theory Meets Practice" Springer, 2009.

[B7] R. Pagliari and A. Scaglione, "Implementation of Average Consensus Protocols for Commercial Sensor Networks Platforms," in *Grid Enabled Remote Instrumentation*, edited by Franco Davoli, Norbert Meyer, Roberto Pugliese and Sandro Zappatore, Springer US, 2008. [\[PDF\]](#)

[B6] B. Sirkeci-Mergen and A. Scaglione, "Randomized Cooperative Transmission in Large Scale Sensor Networks," Chapter 10, in *Wireless Sensor Networks: Signal Processing and Communications Perspectives*, edited by A. Swami, Q. Zhao, Y. W. Hong and L. Tong, John Wiley and Sons, 2007.

[B5] A. Scaglione, D. L. Goeckel and J. N. Laneman, "Cooperative Communication in Mobile Ad Hoc Networks: Rethinking the Link Abstraction," Chapter 4, in *Distributed Antenna Systems: Open Architecture for Future Wireless Communications*, edited by H. Hu, Y. Zhang and J. Luo, Auerbach, 2007.

[B4] A. Scaglione and P. Stoica, "Linear Precoding for MIMO Channels," Chapter 9, in *Space-Time Wireless Systems: From Array Processing to MIMO Communications*, edited by H. Bolcskei, D. Gesbert, C. B. Papadias and A. J. van der Veen, Cambridge University Press, 2006.

[B3] A. Scaglione, A. Salhotra and A. Vosoughi, "Linear Precoding for MIMO systems," in *Signal Processing for Mobile Communications Handbook*, edited by Mohamed Ibnkahla, CRC Press, 2003.

[B2] S. Barbarossa and A. Scaglione, "Time-Varying Fading Channels," Chapter 4, in *Signal Processing Advances in Wireless and Mobile Communications: Trends in Single User and Multiuser Systems*, edited by G. B. Giannakis, L. Tong, P. Stoica, Y. Hua, Prentice Hall, 2001. [PDF]

[B1] A. Scaglione, G. B. Giannakis and S. Barbarossa, "Linear Precoding for Estimation and Equalization of Frequency Selective Channels," Chapter 9, in *Signal Processing Advances in Wireless and Mobile Communications: Trends in Channel Estimation and Equalization*, edited by G. B. Giannakis, L. Tong, P. Stoica, Y. Hua, Prentice Hall, 2001. *Advances in Communications*, G. B. Giannakis, L. Tong, P. Stoica, Y. Hua, (editors), Prentice Hall.

## Refereed Journal Papers

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### Magazine Articles

[M2] A. Scaglione, D. Goeckel and J. N. Laneman, "Cooperative Communications in Mobile Ad-Hoc Networks: Rethinking the Link Abstraction," *IEEE Signal Processing Magazine: Special Issue on Signal Processing for Wireless Ad Hoc Communication Networks*, vol. 23, no. 5, pp. 18-29, September 2006. [PDF]

- This paper was identified by IEEE Xplore as one of the Top 100 Downloaded Articles in November 2006 among the over 1.25 million articles available. [http://www.nd.edu/~jnl/IEEEXplore\\_Top\\_Articles\\_Nov\\_2006.pdf](http://www.nd.edu/~jnl/IEEEXplore_Top_Articles_Nov_2006.pdf)

[M1] S. Galli, A. Scaglione and K. Dostert, "Broadband is Power: Internet Access Through the Power Line Network," *IEEE Communications Magazine*, vol. 41, no. 5, pp. 82-83, May 2003. [PDF]

### Journals

[J31] M. Sharp, A. Scaglione and B. Sirkeci-Mergen, "Randomized Cooperation in Asynchronous Dispersive Links," *IEEE Transactions on Communications*, vol. 57, no. 1, pp. 64-68, January 2009. [PDF]

[J30] T.C. Aysal and M. E. Yildiz and A. D. Sarwate and A. Scaglione, "Broadcast Gossip Algorithms for Consensus," *IEEE Transactions on Signal Processing (To Appear)*, 2009. [PDF]

[J29] M. E. Yildiz and A. Scaglione, "Coding with Side Information for Rate-Constrained Consensus," *IEEE Transactions on Signal Processing*, vol. 56, no. 8, pp. 3753-3764, August 2008. [PDF]

[J28] Y. W. Hong and A. Scaglione, "Group Testing for Binary Markov Sources: Data-Driven Group Queries for Cooperative Sensor Networks," *IEEE Transactions on Information Theory*, vol. 54, no. 8, pp. 3538-3551, August 2008. [PDF]

- [J27] B. Sirkeci-Mergen and A. Scaglione, "Randomized Space-Time Coding for Distributed Cooperative Communication," *IEEE Transactions on Signal Processing*, vol. 55, no. 10, pp. 5003-5017, October 2007. [[PDF](#)]
- [J26] A. Vosoughi and A. Scaglione, "Precoding and Decoding Paradigms for Distributed Data Compression," *IEEE Transactions on Signal Processing*, vol. 55, no. 4, pp. 1445-1460, April 2007. [[PDF](#)]
- [J25] B. Sirkeci-Mergen and A. Scaglione, "On the Power Efficiency of Cooperative Broadcast in Dense Wireless Networks," *IEEE Journal on Selected Areas in Communications*, vol. 25, no. 2, pp. 497-507, February 2007. [[PDF](#)]
- [J24] Y. W. Hong and A. Scaglione, "Energy-Efficient Broadcasting with Cooperative Transmission in Wireless Sensor Networks," *IEEE Transactions on Wireless Communications*, vol. 5, no. 10, pp. 2844-2855, October 2006. [[PDF](#)]
- [J23] B. Sirkeci-Mergen, A. Scaglione and G. Mergen, "Asymptotic Analysis of Multistage Cooperative Broadcast in Wireless Networks," *IEEE Transactions on Information Theory*, vol. 52, no. 6, pp. 2531-2550, June 2006. [[PDF](#)]
- [J22] A. Vosoughi and A. Scaglione, "Everything You Always Wanted to Know About Training: Guidelines Derived Using the Affine Precoding Framework," *IEEE Transactions on Signal Processing*, vol. 54, no. 3, pp. 940-954, March 2006. [[PDF](#)]
- [J21] A. Vosoughi and A. Scaglione, "On the Effect of Receiver Estimation Error Upon the Channel Mutual Information," *IEEE Transactions on Signal Processing*, vol. 54, no. 2, pp. 459-472, February 2006. [[PDF](#)]
- [J20] Y. W. Hong and A. Scaglione, "A Scalable Synchronization Protocol for Large Scale Sensor Networks and Its Applications," *IEEE Journal of Selected Areas in Communications, Special Issue on Advances in Military Wireless Communications*, vol. 23, no. 5, pp. 1085-1099, May 2005. [[PDF](#)]
- [J19] A. Scaglione and S. Servetto, "On the Interdependence of Routing and Data Compression in Multi-Hop Sensor Networks," *ACM/Kluwer Mobile Networks and Applications (MONET) Journal of Special Issue on Mobility of Systems, Users, Data and Computing*, pp. 149-160, 2005. [[PDF](#)]
- [J18] A. Scaglione and Y. W. Hong, "Opportunistic Large Arrays: Cooperative Transmissions in Wireless Multihop Ad Hoc Networks to Reach Far Distances," *IEEE Transactions on Signal Processing*, vol. 51, no. 8, pp. 2082-2092, August 2003. [[PDF](#)]
- [J17] L. Tong, A. Swami, A. Ephremides, D. Goeckel, A. Scaglione and S. Servetto, "Future Challenges of Signal Processing and Communications in Wireless Networks," *ACM Mobile Computing and Communications Review*, vol. 7, no. 3, pp. 10-16, July 2003. [[DOC](#)]
- [J16] A. Scaglione, P. Stoica, S. Barbarossa, G. B. Giannakis and H. Sampath, "Optimal Designs for Space-Time Linear Precoders and Decoders," *IEEE Transactions on Signal Processing*, vol. 50, no. 5, pp. 1051-1064, May 2002. [[PDF](#)]

[J15] S. Barbarossa, A. Scaglione and G. B. Giannakis, "Performance Analysis of a Deterministic Channel Estimator for Block Transmission Systems with Null Guard Intervals," *IEEE Transactions on Signal Processing*, vol. 50, no. 3, pp. 684-695, March 2002. [[PDF](#)]

[J14] Z. Liu, G. B. Giannakis, S. Barbarossa and A. Scaglione, "Transmit Antennae Space-Time Block Coding for Generalized OFDM in the Presence of Unknown Multipath," *IEEE Journal of Selected Areas in Communications*, vol. 19, no. 7, pp. 1352-1364, July 2001. [[PDF](#)]

[J13] S. Zhou, G. B. Giannakis and A. Scaglione, "Long Codes for Generalized FH-OFDMA through Unknown Multipath Channels," *IEEE Transactions on Communications*, vol. 49, no. 4, pp. 721-723, April 2001. [[PDF](#)]

[J12] A. Stamoulis, G. B. Giannakis and A. Scaglione, "Block FIR Decision-Feedback Equalizers for Filterbank Precoded Transmissions with Blind Channel Estimation Capabilities," *IEEE Transactions on Communications*, vol. 49, no. 1, pp. 69-83, January 2001. [[PDF](#)]

[J11] G. B. Giannakis, Z. Wang, A. Scaglione and S. Barbarossa, "AMOUR - Generalized Multicarrier Transceivers for Blind CDMA Regardless of Multipath," *IEEE Transactions on Communications*, vol. 48, no. 12, pp. 2064-2076, December 2000. [[PDF](#)]

[J10] A. Scaglione, G. B. Giannakis and S. Barbarossa, "Langrange/Vandermonde MUI Eliminating User Codes for Quasi-Synchronous CDMA in Unknown Multipath," *IEEE Transactions on Signal Processing*, vol. 48, no. 7, pp. 2057-2073, July 2000. [[PDF](#)]

[J9] **(SPS Best Paper Award 2000)** A. Scaglione, G. B. Giannakis and S. Barbarossa, "Redundant Filterbank Precoders and Equalizers Part 1: Unification and Optimal Design," *IEEE Transactions on Signal Processing*, vol. 47, no. 7, pp. 1988-2006, July 1999. [[PDF](#)]

[J8] **(SPS Best Paper Award 2000)** A. Scaglione, G. B. Giannakis and S. Barbarossa, "Redundant Filterbank Precoders and Equalizers Part II: Blind Channel Estimation, Synchronization and Direct Equalization," *IEEE Transactions on Signal Processing*, vol. 47, no. 7, pp. 2007-2022, July 1999. [[PDF](#)]

[J7] A. Scaglione, S. Barbarossa and G. B. Giannakis, "Filterbank Transceivers Optimizing Information Rate in Block Transmissions over Dispersive Channels," *IEEE Transactions on Information Theory*, vol. 45, no. 3, pp. 1019-1032, April 1999. [[PDF](#)]

[J6] S. Barbarossa and A. Scaglione, "Adaptive Time Varying Cancellation of Wideband Interferences in Spread Spectrum Communications Based on Time-Frequency Distributions," *IEEE Transactions on Signal Processing*, vol. 47, no. 4, pp. 957-965, April 1999. [[PDF](#)]

[J5] A. Scaglione and G. B. Giannakis, "Design of User Codes in QS-CDMA Systems for MUI Elimination in Unknown Multipath," *IEEE Communication Letters*, vol. 3, no. 2, pp. 25-27, February 1999. [[PDF](#)]

[J4] A. Scaglione and S. Barbarossa, "Statistical Analysis of the Product High-Order Ambiguity Function," *IEEE Transactions on Information Theory*, vol. 45, no. 1, pp. 343-356, January 1999. [[PDF](#)]

[J3] S. Barbarossa and A. Scaglione, "Autofocusing of SAR Images Based on the Product of High-Order Ambiguity Function," *IEEE Proceedings of Radar, Sonar, and Navigation*, vol. 145, no. 5, pp. 269-273, October 1998. [PDF]

[J2] A. Scaglione and S. Barbarossa, "On the Spectral Properties of Polynomial-Phase Signals," *IEEE Signal Processing Letters*, vol. 5, no. 9, pp. 237-240, September 1998. [PDF]

[J1] S. Barbarossa, A. Scaglione, and G. B. Giannakis, "Product High-Order Ambiguity Function for Multicomponent Polynomial-Phase Signal Modeling," *IEEE Transactions on Signal Processing*, vol. 46, no. 3, pp. 691-708, March 1998. [PDF]

### Refereed Conference Papers

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[C111] S. Kirti and A. Scaglione, "Cooperative Broadcast in Dense Networks with Multiple Sources," (to appear) *10th IEEE Intl. Workshop on Signal Processing Advances for Wireless Communications (SPAWC)*, Perugia, Italy, June 21-24 2009.

[C110] Y. W. Hong, A. Scaglione and R. Pagliari, "Pulse Coupled Oscillators' Primitives for Low Complexity Scheduling," *IEEE ICASSP 2009*, April 2009.

[C109] M. E. Yildiz, F. Ciaramello, A. Scaglione, "Distributed Distance Estimation For Manifold Learning and Dimensionality Reduction," *IEEE ICASSP 2009*, April 2009.

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