

# Curriculum Vitae for Dr. Hans Kruse, Ohio University

## Academic Preparation

### Degrees Earned

- 1979            Ph.D., Theoretical Nuclear Physics, Vanderbilt University, Nashville, TN
- 1978            M.S., Physics, Vanderbilt University, Nashville, TN  
(minor in Electrical Engineering)
- 1976            Vordiplom, Christian Albrechts Universität, Kiel, West Germany

### Post-Graduate Work

- 1981-            *Research Associate*
- 1984            *National Superconducting Cyclotron Lab, East Lansing, MI.*
- 1979-            *Visiting Scientist*
- 1981            *University of Frankfurt, Frankfurt am Main, West Germany*  
*Gesellschaft für Schwerionenforschung, Darmstadt, West Germany.*

## **Professional Experience**

2006-present      *Professor (tenured)*  
*J. Warren McClure School of Information and Telecommunication Systems*  
*(formerly Communication Systems Management)*  
*Ohio University*

1996-present      *Associate Professor (tenured)*  
*J. Warren McClure School of Communication Systems Management*  
*Ohio University*

2002-present      *Adjunct Associate Professor*  
*School of Electrical Engineering and Computer Science,*  
*Ohio University*

2003-present      *Associate Director*  
*Center for Excellence in Telecommunications and Space*  
*Ohio University and Morehouse College, Atlanta*

2001-2004          *Managing Executive*  
*Ohio Consortium for Advanced Communications Technology, the operator of*  
*the NASA ACTS Satellite System*

1996-2000          *Director*  
*J. Warren McClure School of Communication Systems Management*

1991-1996          *Assistant Professor*  
*J. Warren McClure School of Communication Systems Management*

1989-1991          *General Manager, Support and Services Division*  
*Telco Research Corporation, Nashville, TN*

1989                  *General Manager, Network Design Division*  
*Telco Research Corporation, Nashville, TN*

1988-1989          *Manager, Network Design Software*  
*Telco Research Corporation, Nashville, TN*

1986-1988          *Manager, Voice Networking Software*  
*Telco Research Corporation, Nashville, TN*

1984-1986          *Programmer/Analyst*  
*Telco Research Corporation, Nashville, TN*

1981-1984          *Research Associate*  
*National Superconducting Cyclotron Lab, East Lansing, MI*

1979-1981          *Visiting Scientist*  
*University of Frankfurt, Frankfurt am Main, West Germany*  
*Gesellschaft für Schwerionenforschung, Darmstadt, West Germany*

1984-1989          *Physics Teacher (Part-Time)*  
*University School of Nashville, Nashville, TN*

## **Scholarly Accomplishments**

### **Articles in Professional Journals**

B. Hollowell and H. Kruse, "Using eye tracking to assess auditory and reading comprehension: Results with language-normal adults and adults with aphasia." Submitted, 2005

H. Kruse, A. Baer, R. Lewis, R. Krawczyk and F. Gargione, "Satellite Communications Requirements for a Dual Use Disaster Management Ka Band Network," in Proceedings of the 22nd AIAA International Communications Satellite Systems Conference, 2004

Bauer R., Krawczyk R., Irwin D. and Kruse H., "Extending ACTS operations through a university-based consortium," *SPACE COMMUNICATIONS*, vol. 18, pp. 7-7-12, 2002.

R. Bauer, R. Krawczyk, F. Gargione and H. Kruse, "ACTS of Education," in Proceedings of the 8th Ka-band Utilization Conference, 2002

R. Chinchilla, J. Hoag, D. Koonce, H. Kruse, S. Ostermann and Y. Wang, "Characterization of Internet Traffic and User Classification: Foundations for the Next Generation of Network Emulation," in Proceedings of the Tenth International Conference on Telecommunication Systems, 2002

B. Hollowell, R.T. Wertz and H. Kruse, "Using eye movement responses to index auditory comprehension: An adaptation of the Revised Token Test. ," *Aphasiology*, vol. 16, pp. 587--594, 2002.

H. Kruse, "End-to-End Internet Transparency and Internet Security Solutions," in Proceedings of the Tenth International Conference on Telecommunication Systems, 2002

H. Kruse, R. Bauer, R. Krawczyk, J. Cheng, R. Lewis and F. Gargione, "A New Life in Education for ACTS," in Proceedings of the International Conference on Satellite and Space Communications, 2002

R. Bauer, R. Krawczyk, D. Irwin and H. Kruse, "Extending Acts Operations Through a University-Based Consortium," in 7th Ka-Band Utilization Conference, 2001

Kruse H., Allman M., Griner J. and Tran D., "Experimentation and modelling of HTTP over satellite channels," *INTERNATIONAL JOURNAL OF SATELLITE COMMUNICATIONS*, vol. 19, pp. 51-51-68, 2001.

H. Kruse, "Is The Lack of End-to-End Transparency Helping or Hurting Internet Stability? ," in Proceedings of the Ninth International Conference on Telecommunications Systems, 2001

H. Kruse and P. Campbell, "An Experimental Investigation of the Interaction Between Voice-Over-IP and Rate-Adaptive (TCP) Traffic," in Proceedings of the Ninth International Conference on Telecommunications Systems, 2001

M. Allman, S. Dawkins, D. Glover, J. Griner, D. Trand, T. Henderson, J. Heidemann, Touch J., H. Kruse, S. Ostermann, K. Scott and S. Semke, (2000, Ongoing TCP Research Related to Satellites. *IETF* [Online]. RFC 2760 Available: <http://www.ietf.org/rfc/rfc2760.txt>

- H. Kruse, "The Pitfalls of Distributed Protocol Development: Unintentional Interactions between Network Operations and Applications Protocols," in Proceedings of the 8th International Conference on Telecommunication Systems Design, 2000
- H. Kruse and Yurcik, W., Lessig, L., "The InterNAT: Policy Implications of the Internet Architecture Debate," in Proceedings of the 28th Research Conference on Communication, Information and Internet Policy, 2000
- W. Yurcik, D. Doss and H. Kruse, "Survivability-Over-Security: Providing Whole System Assurance," in Proceedings of the Third Information Survivability Workshop (ISW-2000, 2000
- H. Kruse, "Protocol Interactions and Their Effects on Internet-Based E-Commerce. ," in Proceedings of the Second International Conference on Telecommunicati, 1999
- H. Kruse, M. Allman, J. Griner, S. Ostermann and E. Helvey, "Satellite Network Performance Measurements Using Simulated Multi-User Internet Traffic. ," in Proceedings of the Seventh International Conference on Telecommunications Systems, 1999
- D. Glover and H. Kruse, "TCP Performance in a Geostationary Satellite Environment," *Annual Review of Communications*, vol. 51, pp. 877, 1998.
- H. Kruse, M. Allman, J. Griner and D. Tran, "HTTP Page Transfer Rates over Geo-Stationary Satellite Links." in Proceedings of the Sixth International Conference on Telecommunications Systems, 1998
- H. Kruse, M. Allman and P. Mallasch, "Network and User-Perceived Performance of Web Page Retrievals." in Proceedings of the First International Conference on Telecommunication and Electronic Commerce, 1998
- Allman M., Hayes C., Kruse H. and S. Ostermann, "TCP Performance over Satellite Links." in Proceedings of the Fifth International Conference on Telecommunications Systems, 1997
- H. Kruse, "Network Management Systems from LANs to WANs," in *The Network Manager's Handbook*, J. Lusa Ed. Auerbach Publications, 1997,
- M. Allman, H. Kruse and S. Ostermann, "An Application-Level Solution to TCP's Satellite Inefficiencies ," in Proceedings of the First International Workshop on Satellite-Based Information Services (WOSBIS), 1996
- H. Kruse, "Optimizing Data Transmission Capacity on Satellite Links with Non-Zero Bit Error Rates," in Proceedings of the 4th International Conference on Telecommunication Systems, 1996
- H. Kruse, "Data Communications Protocol Performance on Geostationary Satellite Links -- Lessons Learned Using ACTS," in Proceedings of the 16th International Satellite Systems Conference, 1996
- H. Kruse and D. Flournoy, "NASA ACTS Satellite: Demonstration of Capabilities," *Annual Review of Communications*, vol. 49, pp. 1045, 1996.

## **Other Publications**

P. Narasimhan, H. Kruse, S. Ostermann and M. Allman, "On the Impact of BER on Realistic TCP Traffic in Satellite Networks," International Computer Science Institute., Tech. Rep. 04-005, November, 2004.

## **Supported Research and Grants**

2006-present Improving Undergraduate Participation in Math, Science, and Technology Research, NASA HQ, \$196,000 including \$35,000 in graduate stipends for OU students.

2004-present Center for Excellence in Telecommunications and Space, Morehouse College/NASA HQ - \$800,000 total, \$167,298 for Ohio University portion.

2001-2004 Contracts towards operation of OCACT – Ohio Consortium for Advanced Communications Technology, for operation of the NASA ACTS Satellite System (amounts are not shown since many accounts have not yet been closed/settled.).

Air Force Research Lab

Navy SPAWAR

Texas A&M

Naval Postgraduate School

SchoolTone Alliance

Andrew Corp

Federal Emergency Management Agency (FEMA)

NASA Glenn Research Center

Lockheed Martin

NASA Headquarters

2002 “Network Emulation Test Bed for Quality of Service Protocol Studies”; joint proposal with John Hoag (CSM), David Koonce (ISME), and Shawn Ostermann (EECS), \$76,500, funded by ITEC-Ohio.

1999-2000 “A Study of Multi-User TCP/IP Traffic over ACTS”; joint project with the Department of Electrical Engineering and Computer Science; funded by the NASA Glenn Research Center, \$88,000.

1998 “Scaling TCP/IP Satellite Networks”. This “Usage Proposal” for the NASA Advanced Communications Technology Satellite was accepted resulting in the delivery of a second ACTS ground station to OU in September. The acceptance of this proposal provided cost-free research access to the ACTS satellite for 12 months.

1995-1998 “High Performance TCP/IP Applications over Fast Satellite Channels” joint project with the Department of Electrical Engineering and Computer Science; funded by the NASA Lewis Research Center (\$190,000).

## **Papers Presented**

B. Hollowell, H. Kruse, S.V. Markovich, M. Ivanova and E. Emelivanova, "New Russian language version of an eye movement adaptation of the Revised Token Test for individuals with aphasia," in Second Biennial Conference on Cognitive Science, 2006 (submitted)

B. Hollowell, S. Heuer, N. Douglas and H. Kruse, "Eye tracking evaluation of clipart versus carefully designed images in multiple-choice image displays for comprehension assessment. ," in Clinical Aphasiology Conference, 2005

S. Heuer, B. Hallowell, N. Franko and H. Kruse, "Comparison of eye movement indices of multiple-choice images for aphasia assessment, clipart images and images designed to control for physical and semantic image characteristics. ," in Clinical Aphasiology Conference. , 2005

S. Heuer, B. Hallowell and H. Kruse, "Effects of verbal stimuli and image characteristics on visual attention," in Annual Convention of the American Speech-Language-Hearing Association. , 2005

S. Heuer, B. Hallowell, N. Douglas, H. Kruse and S. Kim, "Pop-out effect in controlled and uncontrolled images in multiple-choice displays. ," in Annual Convention of the American Speech-Language-Hearing Association, 2004

B. Hallowell, K. Carr and H. Kruse, " Using eye movements to study reading comprehension in children." in Annual Convention of the American Speech-Language-Hearing Association. 2002

H. Kruse, "Effective Deployment, Operation, and Management of Remote, Unattended Satellite Ground Stations – Tradeoffs between Manageability and Cost," in Workshop for Accelerating Trustworthy Internetworking (Testbeds For Critical And Pervasive Applications), 2002

R. Bauer, R. Krawczyk, D. Irwin and H. Kruse, "Extending Acts Operations Through a University-Based Consortium," in 7th Ka-Band Utilization Conference, 2001

B. Hallowell, K. Carr, L. Vaughan, H. Kruse and A.J. Reid, "Using eye movements to study auditory comprehension in children. ," in Annual Convention of the American Speech-Language-Hearing Association, 2001

H. Kruse, "Managing the Satellite Communications Service of the Future - Reinventing the Satellite Communications Engineer," in Windows on the Future Conference held by ITEC-Ohio, 2001

M. Allman, H. Kruse and S. Ostermann, "A History of the Improvement of Internet Protocols Over Satellites Using ACTS," in ACTS 2000 Conference, 2000

B. Hallowell, B. Basilio, M. Courtney and H. Kruse, "Using eye movements to index responses in an adapted version of the Revised Token Test." in Annual Convention of the Ohio Speech and Hearing Association, 2000

H. Kruse, "The Policy Implications of End-to-End," in Stanford Program in Law, Science, and Technology, 2000

H. Kruse, S. Ostermann and Allman. M., "On The Performance of TCP-Based Data Transfers on a Faded Ka-Band Link," in 6th Ka-Band Utilization Conference, 2000

W. Yurcik, D. Doss and H. Kruse, "Challenges to the End-to-End Internet Model," in American Conference on Information Systems, 2000

B. Hallowell, R.T. Wertz, M. Courtney, C. Basilio and H. Kruse, "An eye movement adaptation of a standardized test of auditory comprehension for adults." in European Conference on Eye Movements, 1999

## **Professional Associations**

Dr. Kruse is a member of the following professional organizations:

- IEEE Computer Society,
- IEEE Communications Society
- ACM (Association of Computing Machinery).