



# Biographical Sketch

**Steve F. Russell, Ph.D., P.E.**

Steve is a retired Emeritus Associate Professor in the Department of Electrical and Computer Engineering at Iowa State University, Ames, Iowa. His career has spanned 43 years in both Industry and Academia. Through the years, he has also managed to indulge in his favorite pastimes – Historic Trail Research, Western History, Jazz Trumpet, Amateur Radio, camping, hiking, long distance biking, and Amateur (ham) Radio. Dr. Russell graduated from Montana State University in 1966 with a B.S. degree, from Iowa State University with an M.S. degree in 1973, and from Iowa State with a Ph.D. in 1978.

## **Engineering Career**

During his professional engineering career he has worked for Collins Radio Corporation, Rockwell-Collins Avionics, and King Radio Corporation. He has also been a private consulting engineer since 1973. In Academia, he taught and did research as a member of the Electrical and Computer Engineering faculty at Iowa State University.

His professional interests in Electrical Engineering are communication systems design, communications and computer systems security, communications theory, frequency-hopping and direct-sequence spread spectrum systems, digital radio, digital signal processing (DSP), Global Positioning System (GPS), and radio frequency (RF) design.

## **Historic Trails Research**

Since 1985, he has done academic research on historic emigrant and aboriginal trails in the western United States. His professional interests in Historic Trails Research are the Lewis and Clark Trail 1805-1806, Lolo National Historic Trail, Nez Perce National Historic Trail, Oregon-California Emigrant Trails, Ice Age Trail, Mullan Military Wagon Road, Lolo Trail National Historic Landmark, Nez Perce National Historic Trail, and many more.

Dr. Russell specializes in the accurate location of historic trail tread, campsites, and landmarks. He has an extensive GIS database of dozens of historic western trails – obtained using historical maps, satellite photos, and GPS data logging. His research approach is to ground truth actual trail tread when possible.

**Dr. Russell's professional books, papers, and research documents can be found on the following internet websites:**

[Archive.org](https://archive.org/search.php?query=%22steve+f+russell%22&sort=titleSorter) <https://archive.org/search.php?query=%22steve+f+russell%22&sort=titleSorter>

[ResearchGate](https://www.researchgate.net/profile/Steve_Russell3) [https://www.researchgate.net/profile/Steve\\_Russell3](https://www.researchgate.net/profile/Steve_Russell3)

[Google Scholar](https://scholar.google.com/citations?hl=en&user=avpap9cAAAAJ) <https://scholar.google.com/citations?hl=en&user=avpap9cAAAAJ>

[Steve Russell Web](http://www.steverussellweb.com/) <http://www.steverussellweb.com/>

[Historic Trail Research](https://www.trailresearch.org/) <https://www.trailresearch.org/>

## **Contact Information**

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## Accomplishments

- \*Senior Life Member, Institute of Electrical and Electronic Engineers
- \* Five Patents in Engineering: US Patent Office, #7639806 ; #6,865,215; #6,377,116; #5,461,921; #5,327,496
- \*First manufacturable design of helical resonator filters, TACSATCOM satellite program, DoD, 1968
- \*First design of radio-based emergency callbox, Fire, Police, Ambulance, Harrington Signal, Moline, IL, 1973
- \*Signal processing system engineer on the NAVSTAR GPS high-antijam program, DoD, 1977
- \*Held DOD Secret Clearance for 20 years
- \*117 books, papers, and research reports available on the ResearchGate website
- \*Ranked in the top 25% of researchers worldwide on ResearchGate
- \*28 research grants and contracts totaling \$2,481,987
- \*Graduated 37 graduate students as research advisor (Major Professor)
- \*Warren Boast Undergraduate Teaching Excellence Award 2003
- \*Registered Professional Engineer, Iowa #8194
- \*Private Engineering Consultant, Ruscom

## Engineering

- \*Past President of the Nez Perce National Historic Trail Foundation
- \*Licensed Amateur Radio Operator, Extra Class, KØNJ (WAØQMU), FCC Official Observer Coordinator
- \*Iowa State University Faculty Senator, 2000-2005
- \*Miller Faculty Fellow, Center for Teaching Excellence, Iowa State University 2000-2001
- \*Corporate Distinguished Lecturer, Telecordia Technologies, Inc. (Bell Labs), Morris Corporate Center, Morristown, New Jersey, 2000
- \*Featured in Emmy winning documentary on Lewis and Clark in Idaho, *Echos of a Bitter Crossing*, Idaho Public Television, 1999
- \*Member: Phi Kappa Phi - National Honor Society
- \*Member: Eta Kappa Nu - National Electrical Engineering Honor Society
- \*Member: Sigma Xi - Scientific Research Society
- \*Fellowship Award, Graduate College NDEA Predoctorial Fellowship Competition, Iowa State University