

Short-Form Resume for Neil F. Chamberlain, Ph.D.

Current Position:	Manager, Flight Communications Systems Section Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109	
Background:	Telecommunications Systems Engineering; Relay Operations Antenna Analysis, Design & Testing; Antenna Arrays; Microwave Engineering Signal Processing; Polarimetry; Target Classification; Ground Penetrating Radar	
Education:		
<i>M.S., Ph.D. (E.E.)</i>	The Ohio State University ElectroScience Laboratory (ESL), Columbus, OH	1984, 1989
<i>B.Sc. (E.E. with honors)</i>	King's College, London University, UK	1981
Experience:	<i>33 years post-PhD work in communications systems, antennas, and radar:</i> <i>19 years as an engineer and manager with JPL's Flight Communications Systems Section</i> <i>14 years as an educator at the South Dakota School of Mines & Technology (SDSM&T)</i>	
<i>Manager</i>	Flight Communications Systems Section, JPL, Pasadena, CA	2004 – present
<i>& Senior Engineer</i>	JPL Chief Telecom Engineer	4/22 – present
	EM Analyst: Europa REASON HF Antenna	2016 – 2022
	Project Manager: Deep Space Network RF-Optical Ground Station	2019 – 2021
	Task Manager: Trace Gas Orbiter Electra Relay Operations	2016 – 2021
	Task Manager: FINDER Heartbeat Detecting Radar	2015 – 2018
	Task Manager: MAVEN Electra Relay Operations	2011 – 2021
	Task Lead: DESDynI / NISAR Synthetic Aperture Radar Antenna	2009 – 2015
	Cognizant Engineer: Juno Microwave Radiometer Antennas	2007 – 2010
	Cognizant Engineer & Contract Technical Manager: UAVSAR Radar Antenna	2004 – 2008
	Cognizant Engineer: JPL / AFRL Space-Based Radar Antenna	2003 – 2005
<i>NASA Faculty Fellow</i>	Jet Propulsion Laboratory, Pasadena, CA	2002, 2003
<i>Professor</i>	Electrical and Computer Engineering Dept., SDSM&T, Rapid City, SD	1990 – 2003
<i>President</i>	Chamberlain Thompson Engineering Systems (ChTES) Inc.	1996 – 2000
<i>Graduate & Post-Doctoral</i>	The Ohio State University ElectroScience Laboratory, Columbus, OH	1983 – 1989
<i>Researcher</i>	Research in radar polarimetry, RCS measurements, radar target classification	
<i>Graduate Engineer</i>	Marconi Space and Defence Systems, Portsmouth, UK	1981 – 1982
Selected Publications:		
<i>N. Chamberlain et al</i>	“Implementing Low-Density Parity-Check Codes in the Mars Relay Network”, IEEE Aerospace Conference, Big Sky, MT	2022
<i>with M. Mohageg et al</i>	“Telescope Metrology and Active Alignment for RF-Optical Hybrid Receiver”, Proc. SPIE 11678, Free-Space Laser Communications XXXIII	2021
<i>with N. Lay et al</i>	“On-board Wireless Communications for Spacecraft Test and Operations”, IEEE Aerospace Conference, Big Sky, MT	2019
<i>with Y. Rahmat-Samii et al</i>	“Enhancing Communications for Future Mars Rovers: Using high-performance circularly polarized patch subarrays for a dual-band direct-to-Earth link”, IEEE APS Magazine	2018
<i>N. Chamberlain et al</i>	A Dual-Polarized W-band Metal Patch Antenna Element for Phased Array Applications”, IEEE APS Conference, Memphis, TN	2014
<i>N. Chamberlain</i>	“Transient Polarization” Proceedings of NATO Advanced Workshop on Direct and Inverse EM Imaging (invited monograph)	1992
Selected Funded Research:		
<i>JPL SURP</i>	“Broadband Circularly Polarized Antenna Array for Mars Rover DTE” (PI)	2013
<i>JPL Center Innovation</i>	“All-Metal Dual-Polarized W-band Patch Element” (PI)	2012
<i>JPL R&TD</i>	“Compact 94-GHz Multi-beam Lens Antenna for Landing Radars” (PI)	2009
<i>NSF SBIR Phase II</i>	“Electronic Beam Steering for Ground Probing Radar” (under ChTES)	1997
Selected Awards:		
<i>NASA Honor</i>	“For development and flight implementation of low-density parity check during adaptive data rate relay sessions enabling a factor of 2 increase in Mars relay performance”	2022
<i>NASA Honor</i>	“For outstanding, innovative effort during the investigation of the MRO Relay Throughput Anomaly, resulting in a successful resolution”	2019
<i>Major Space Act Award</i>	“A Single-Layer, All-Metal Patch Antenna Element”	2012
<i>Ohio State ESL</i>	“Outstanding Dissertation”	1989
Patents:		
<i>Principal Inventor</i>	Metal Patch Antenna, US Patent Number 8,169,371	2012
Professional:		
<i>Senior Member</i>	Institute of Electrical and Electronic Engineers (member since 1986)	