# Brad R. Jackson


CONTACT INFORMATION

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EDUCATION

**Ph.D., Electrical Engineering** *2009*
Queen's University, Canada

**M.Sc.(Eng.), Electrical Engineering** *2005*
Queen's University, Canada

**B.Sc.(Eng.), Electrical Engineering** *2002*
Queen's University, Canada

PROFESSIONAL EXPERIENCE

**Associate Professor** *2023 – Present*
Department of Electrical and Computer Engineering
College of Engineering and Computer Science
California State University, Northridge, California, USA

**Assistant Professor** *2017 – 2023*
Department of Electrical and Computer Engineering
College of Engineering and Computer Science
California State University, Northridge, California, USA

**Defence Scientist** *2010 – 2017*
Communications Electronic Warfare
Defence Research & Development Canada
Department of National Defence, Government of Canada
Ottawa, Ontario, Canada

**Visiting Researcher** *Jan.–Apr. 2015, 2016, 2017*
Electronic Countermeasures
Defence Science & Technology Laboratory
Ministry of Defence, Government of the United Kingdom
Fort Halstead, Kent, United Kingdom

**Postdoctoral Fellow** *2009 – 2010*
Department of Electrical and Computer Engineering
Royal Military College of Canada
Kingston, Ontario, Canada

AWARDS

- Outstanding New Researcher Award (2022)
  *College of Engineering and Computer Science, California State University, Northridge*
- CECS Research Fellow (2019-2020)
  *College of Engineering and Computer Science, California State University, Northridge*
- Outstanding Engineering Achievement Merit Award (2018)
  *The Engineers' Council*
- Outstanding Performance Award (2017)
  *Defence Research & Development Canada, Government of Canada*

- NSERC Postdoctoral Fellowship (2010) *(declined)*
- Best Student Paper Award – *IEEE Topical Meeting on Silicon Monolithic RF Systems (SiRF)*, San Diego, California (2009)
- Ontario Graduate Scholarship (2007–2009)
- Queen's Graduate Award (2006–2009)

## Grants

**Grant:** University Collaboration Grant (2018-2023)
**Agency:** The Aerospace Corporation
**Title:** Antennas for Small Satellites
**Role:** Principle Investigator
**Total Funding:** $210,000

**Grant:** Research Fellows Program (2019-2020)
**Agency:** CSUN College of Engineering and Computer Science
**Title:** Next Generation Smart Antennas
**Role:** Principle Investigator
**Total Funding:** 12-units release time and $5,000 over 1 year

**Grant:** Keysight Technologies Equipment Grant (2020)
**Agency:** Keysight Technologies
**Equipment:** P9371A Vector Network Analyzer (300 kHz to 6.5 GHz)
**Total Funding:** $29,264

**Grant:** Instructionally Related Activities (2019-2021)
**Agency:** CSUN
**Title:** Smart Antenna Senior Design Project
**Role:** Principle Investigator
**Total Funding:** $3,600

**Grant:** Summer Grant Program (2019)
**Agency:** CSUN Research & Graduate Studies (RGS)
**Title:** Development of Non-Invasive Crop Phenotyping Technologies using Radio frequency (RF)/Microwave Electromagnetic Waves
**Role:** Co-Principle Investigator
**Total Funding:** $3,000

**Grant:** Canadian Air Force Grant (2013)
**Agency:** Department of National Defence, Canada
**Title:** Future Electronic Warfare Capabilities
**Role:** Principle Investigator
**Total Funding:** $50,000

**Grant:** Canadian Air Force Grant (2012)
**Agency:** Department of National Defence, Canada
**Title:** Advanced Antennas for UAVs
**Role:** Principle Investigator
**Total Funding:** $50,000

## Courses Taught

- **ECE 340** – Electronics I
  Fall 2017, Fall 2018, Fall 2022
- **ECE 370** – Electromagnetic Fields and Waves I
  Fall 2018, Spring 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023
- **ECE 370L** – Electromagnetic Fields and Waves I Laboratory
  Spring 2020, Fall 2020, Spring 2021, Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023
- **ECE 442** – Digital Electronics
  Fall 2017, Spring 2018, Spring 2019, Spring 2023, Fall 2023
- **ECE 442L** – Digital Electronics Laboratory
  Fall 2017
- **ECE 443** – Pulse and Waveshaping Circuit Design
  Spring 2018
- **ECE 443L** – Pulse and Waveshaping Circuit Design Laboratory
  Spring 2018, Spring 2020
- **ECE 571** – Electromagnetic Fields and Waves II
  Spring 2019, Spring 2020, Spring 2021, Spring 2023
- **ECE 572** – RF and Microwave Active Circuit Design
  Fall 2018, Fall 2023

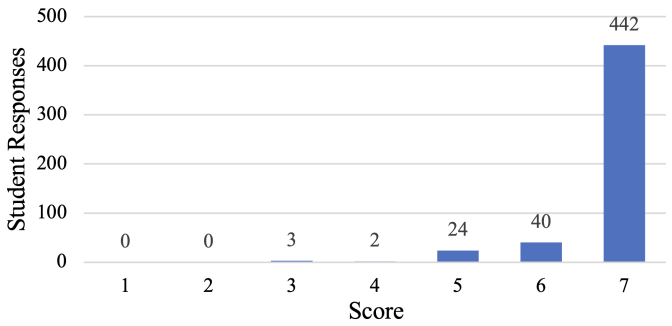
## Summary of Student Evaluations

Average student evaluation scores for all courses taught at CSUN:
(511 total student responses from 33 courses taught between 2017-2022)

***Scores range from 1–7 (1 is Poor and 7 is Excellent)***

| **Semester** | ***"Overall, this instructor is:"*** |
|---|---|
| Fall 2017 | 6.28 |
| Spring 2018 | 6.76 |
| Fall 2018 | 6.76 |
| Spring 2019 | 6.93 |
| Fall 2019 | Did Not Teach (Research Fellowship) |
| Spring 2020 | 6.71 |
| Fall 2020 | 6.97 |
| Spring 2021 | 6.96 |
| Fall 2021 | 6.98 |
| Spring 2022 | 6.87 |
| **Overall Average** | **6.79/7** |

Histogram of responses to *"Overall, this instructor is:" (1 is Poor and 7 is Excellent)*:



MASTERS PROJECTS SUPERVISED

1. **Student:** Adrian Contreras
   **Project Topic:** Reflectarrays
   **Expected Graduation Date:** Fall 2023 (In Progress)

2. **Student:** Christian Cavalier
   **Project Topic:** Reconfigurable Antennas for Digital Beamforming
   **Expected Graduation Date:** Fall 2023 (In Progress)

3. **Student:** Vanessa Quintero
   **Project Topic:** Wideband CubeSat Antenna Arrays
   **Expected Graduation Date:** Fall 2023 (In Progress)

4. **Student:** David Allen
   **Project Topic:** Broadband Phased Array Antennas
   **Expected Graduation Date:** Fall 2023 (In Progress)

5. **Student:** Christian Nicolas Bermudez
   **Project Topic:** Refelctarrays
   **Expected Graduation Date:** Summer 2023 (In Progress)

6. **Student:** Varsha Shankar
   **Project Title:** Design of a Dual Band 8-element MIMO Antenna for Smartphone Applications
   **Graduation Date:** Fall 2022

7. **Student:** Hareth Abdalkarim
   **Project Title:** Design of Frequency and Radiation Pattern Reconfigurable Antennas
   **Graduation Date:** Summer 2021

8. **Student:** Robin Bochen
   **Project Title:** Design and Integration of a General-Purpose Communication and Control Board with Custom Software Controlled Serial Peripheral Interface
   **Graduation Date:** Summer 2021

9. **Student:** Bhagesh Jain
   **Project Title:** Design of a Low Noise Amplifier at 3 GHz
   **Graduation Date:** Spring 2020

10. **Student:** Yashika Parwath
    **Project Title:** Design of a 5.8 GHz Two-Stage Low Noise Amplifier
    **Graduation Date:** Spring 2020

11. **Student:** Mahya ShahmohammadiMehrjardi
    **Project Title:** Non-Invasive Blood Glucose Measurement using Microwave Resonators
    **Graduation Date:** Spring 2020

12. **Student:** Ionatana Sipili
    **Project Title:** A Circularly Polarized Microstrip Antenna using an Open Stub Coupled-Line Phase Shifter
    **Graduation Date:** Spring 2020

13. **Student:** Izabel Khalili
    **Project Title:** Proximity-Coupled Circularly Polarized Patch Antenna
    **Graduation Date:** Fall 2019

Senior Design Projects Supervised

1. **Title:** Broadband Circularly Polarized Antennas for a Satellite Communication System
   **Courses:** ECE 492 (Fall 2022) and ECE 493 (Spring 2023)
   **Number of Students:** 3
   **Sponsor:** The Aerospace Corporation
   **CSUN IEEE Paper Competition Results:** 1st Place

2. **Title:** Broadband Antennas for a CubeSat Antenna System
   **Courses:** ECE 492 (Spring 2022) and ECE 493 (Fall 2022)
   **Number of Students:** 4
   **Sponsor:** The Aerospace Corporation
   **CSUN IEEE Paper Competition Results:** 1st Place

3. **Title:** Circularly Polarized and Reconfigurable Antennas for Small Satellites
   **Courses:** ECE 492 (Fall 2021) and ECE 493 (Spring 2022)
   **Number of Students:** 3
   **Sponsor:** The Aerospace Corporation
   **CSUN IEEE Paper Competition Results:** 2nd Place

4. **Title:** Design and Measurement of an X-Band Reflactarray Antenna
   **Courses:** ECE 492 (Fall 2021) and ECE 493 (Spring 2022)
   **Number of Students:** 1
   **Sponsor:** The Aerospace Corporation
   **CSUN IEEE Paper Competition Results:** 3rd Place

5. **Title:** Circularly Polarized Antenna Design and Adaptive Array Signal Processing Techniques
   **Courses:** ECE 492 (Spring 2021) and ECE 493 (Fall 2021)
   **Number of Students:** 2
   **Sponsor:** The Aerospace Corporation
   **CSUN IEEE Paper Competition Results:** 3rd Place

6. **Title:** Antenna Design and Digital Signal Processing for a 2 GHz Smart Antenna System
   **Courses:** ECE 492 (Fall 2020) and ECE 493 (Spring 2021)
   **Number of Students:** 3
   **Sponsor:** The Aerospace Corporation
   **CSUN IEEE Paper Competition Results:** 2nd Place

7. **Title:** Low Noise Amplifier and Circularly Polarized Antenna for a Smart Antenna System
   **Courses:** ECE 492 (Spring 2020) and ECE 493 (Fall 2020)
   **Number of Students:** 2
   **Sponsor:** The Aerospace Corporation
   **CSUN IEEE Paper Competition Results:** 1st Place

8. **Title:** A Circularly Polarized Adaptive Antenna Array for CubeSat Applications
   **Courses:** ECE 492 (Fall 2019) and ECE 493 (Spring 2020)
   **Number of Students:** 5
   **Sponsor:** The Aerospace Corporation
   **CSUN IEEE Paper Competition Results:** 1st Place

9. **Title:** Digital Beamforming for Small Satellites
   **Courses:** ECE 492 (Spring 2019) and ECE 493 (Fall 2019)
   **Number of Students:** 3
   **Sponsor:** The Aerospace Corporation
   **CSUN IEEE Paper Competition Results:** 1st Place

10. **Title:** Reconfigurable CubeSat Antenna System
    **Courses:** ECE 492 (Fall 2018) and ECE 493 (Spring 2019)
    **Number of Students:** 3
    **Sponsor:** The Aerospace Corporation
    **CSUN IEEE Paper Competition Results:** 1st Place

11. **Title:** 3D Printed Luneburg Lens Antenna
    **Courses:** ECE 492 (Fall 2018) and ECE 493 (Spring 2019)
    **Number of Students:** 5
    **Sponsor:** L3 Datron Advanced Technologies
    **CSUN IEEE Paper Competition Results:** 2nd Place

12. **Title:** Microwave Wireless Power Transfer
    **Courses:** ECE 492 (Spring 2018) and ECE 493 (Fall 2018)
    **Number of Students:** 5
    **CSUN IEEE Paper Competition Results:** 1st Place

Service to the Department

- ECE Department Faculty Search and Screen Committee Member (2019-2020)
- ECE Department Faculty Search and Screen Committee Member (2020-2021)
- Chair of the ECE Department Lecturer Review Committee (2022)
- ABET Rubric Creation and Data Collection:
  - ECE 440 – Electronics II
  - ECE 440/L – Electronics II Laboratory
  - ECE 442 – Digital Electronics
  - ECE 442/L – Digital Electronics Laboratory
  - ECE 443 – Pulse and Waveshaping Circuit Design
  - ECE 443/L – Pulse and Waveshaping Circuit Design Laboratory
  - ECE 571 – Electromagnetic Fields and Waves II
  - ECE 572 – RF and Microwave Active Circuit Design
- Executive Order 1071 Department Committee Member (Core Courses)
- Senior Design Project Judge (Fall 2017, Spring 2018, Fall 2018)
- ECE Department International Education Council Representative (2019-2023)
- ECE Department Equity and Diversity Representative (2021)
- Course Coordinator:
  - ECE 370 – Electromagnetic Fields and Waves I
  - ECE 370L – Electromagnetic Fields and Waves I Laboratory
  - ECE 440 – Electronics II
  - ECE 440/L – Electronics II Laboratory
  - ECE 442 – Digital Electronics
  - ECE 442/L – Digital Electronics Laboratory
  - ECE 571 – Electromagnetic Fields and Waves II
- Guest Lectures in ECE 101 on RF/Microwave Engineering (2019 and 2022)

Service to the College and University

- CECS Strategic Plan Committee Member (Research Team)
- CECS Research Fellow Proposal Review Committee (2020, 2021, 2022)
- Revised CECS Research Fellow Proposal Application Form and Selection Criteria
- CECS Student Affairs Committee (Temporary Replacement for Scholarship Selection) (2022)
- Academic Technology Committee (2018-2021)

- NSF MRI Preproposal Review Committee Member (2019)
- New Faculty Orientation Technology Tutor (2018)
- College Commencement Mace Bearer (2018)

## Student Advisement and Mentoring

- Supervised 8 masters student projects to completion
- Currently supervising 3 masters student projects
- Masters Project Committee Member for 17 graduate students
- Supervisor of 11 ECE 492/493 senior design groups (36 students in total)
- Wrote 37 letters of recommendation for students
- Senior Electives Course Advisor for 14 students

## Community Outreach Activities

- Summer 2018 AIMS$^2$ Research Mentor (6 students total; 3 from local community colleges)
- IEEE Report Writing Workshop for CSUN IEEE Student Branch (2018)
- CSUN IEEE Student Branch Presentation on Research Area (2019)

## Service to the Professional Community

- Conference session chair for the *Circularly Polarized Antennas* session at the 2020 IEEE International Symposium on Antennas and Propagation, July 2020
- Conference session chair for *Ultrawideband Antennas II* at the 2018 IEEE International Symposium on Antennas and Propagation, Boston, MA, July 2018
- Conference session chair for *Emerging Technologies for Communications and Sensing* at the 2016 IEEE International Symposium on Antennas and Propagation/USNC-URSI National Radio Science Meeting, July 2018
- Discovery Grant Proposal Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC), 2013 & 2014.
- Conference session chair for *Antenna and Location Based Applications* at the 2011 IASTED Wireless Communications Conference, 2011

**Journal Paper Reviewer:**

- IEEE Transactions on Antennas and Propagation
- IEEE Transactions on Microwave Theory and Techniques
- IEEE Antennas and Wireless Propagation Letters
- IET Electronics Letters

**Conference Paper Reviewer:**

- IEEE International Symposium on Antennas and Propagation (AP-S)
- European Conference on Antennas and Propagation (EuCAP)
- IEEE International Microwave & RF Conference (IMaRC)
- IEEE Asia-Pacific Conference on Applied Electromagnetics (APACE)
- IEEE Canadian Conference on Electrical and Computer Engineering (CCECE)
- IEEE Symposium on Wireless Technology and Applications (ISWTA)
- IEEE International RF and Microwave Conference (RFM)
- IEEE International Midwest Symposium on Circuits and Systems (MWSCAS)

## Workshops Attended

- *Show Me the Money!*, Research and Graduate Studies, September 18, 2018
- *Faculty Hiring Workshop*, Faculty Affairs, September, 2018
- *Get Up to Speed with Online Teaching*, Faculty Development, July 2020
- *Summer eLearning Institute*, Faculty Development, August 2020
- *Machining Workshop*, College of Engineering and Computer Science, Fall 2022

## Publications

**Journal Papers:**

1. **B. R. Jackson**, "2D Direction of Arrival Estimation using Uniform Circular Arrays with Radiation Pattern Reconfigurable Antennas," *IEEE Access*, Volume 10, pp. 11909-11923, 2022.
2. **B. R. Jackson** and E. Merkley, "A Broadband Body-Worn Antenna using a Top-Loaded Pyramidal Radiator," accepted for publication in *IET Microwaves, Antennas & Propagation*, vol. 14, No. 4, pp. 329–334, March 2020.
3. **B. R. Jackson** and S. J. Boyes, "Radiation Pattern-Agile Dual Planar Inverted-F Antenna," *IEEE Antennas and Wireless Propagation Letters*, vol. 16, pp. 2090–2093, May 2017.
4. **B. R. Jackson**, S. Rajan, B. Liao and S. Wang, "Direction of Arrival Estimation using Directive Antennas in Uniform Circular Arrays," *IEEE Transactions on Antennas and Propagation*, Vol. 63, No. 2, pp. 736–747, February 2015.
5. C. Saavedra, **B. R. Jackson** and S. K. Ho, "Self-Oscillating Mixers," *IEEE Microwave Magazine*, Vol. 14, No. 6, pp. 40–49, September-October 2013.
6. S. Henault, **B. R. Jackson** and Y.M.M. Antar, "Compensation of Time-Division Multiplexing Distortion in Switched Antenna Arrays with a Single RF Front-End and Digitizer," *IEEE Transactions on Antennas and Propagation*, Vol. 61, No. 8, pp. 4383–4388, August 2013.
7. **B. R. Jackson** and C. E. Saavedra, "A Dual-Band Mixer/Oscillator for C-Band and X-Band Applications," *IEEE Transactions on Microwave Theory and Techniques*, Vol. 58, No. 2, pp. 318–323, February 2010.
8. **B. R. Jackson** and C E. Saavedra, "A Frequency Tripler Using a Subharmonic Mixer and Fundamental Cancellation," *IEEE Transactions on Microwave Theory and Techniques*, Vol. 57, No. 5, pp. 1083–1090, May 2009.
9. **B. R. Jackson** and C E. Saavedra, "A CMOS Ku-Band 4× Subharmonic Mixer," *IEEE Journal of Solid-State Circuits*, Vol. 43, No. 6, pp. 1351–1359, June 2008.
10. **B. R. Jackson** and C. E. Saavedra, "A CMOS Subharmonic Mixer with Input and Output Active Baluns," *Microwave and Optical Technology Letters (Wiley InterScience)*, Vol. 48, No. 12, pp. 2472–2478, December 2006.
11. C. E. Saavedra and **B. R. Jackson**, "Voltage-Variable Attenuator MMIC using Phase Cancellation," *IEE Proceedings Circuits, Devices, and Systems*, Vol. 153, No. 5, pp. 442–446, October 2006.
12. **B. R. Jackson** and C. E. Saavedra, "2.4 GHz Direct-Digital Binary Phase Shift Keying Modulator using a MEMS Switch," *IEE Electronics Letters*, Vol. 40, No. 24, pp. 1539–1540, November 2004.

**Conference Papers:**

12. T. MacDonald and **B. R. Jackson**, "A Ku-Band Deployable Broadband Reflectarray for CubeSat Applications," *2023 IEEE International Symposium on Antennas and Propagation and North American Radio Science Meeting*, Portland, OR, USA, July 2023.

13. H. Abdalkarim and **B. R. Jackson**, "Radiation Pattern Reconfigurable Antenna using a Proximity-Coupled Sunflower-Shaped Patch," *2022 National Radio Science Meeting (NRSM)*, Colorado, USA, January 2022.

14. C. Cavalier and **B. R. Jackson**, "Wideband Proximity-Fed Low Profile Circularly Polarized Patch Antenna," *2021 United States National Committee of URSI National Radio Science Meeting (USNC-URSI NRSM)*, Boulder, CO, USA, 2021.

15. I. Sipili and **B. R. Jackson**, "A Circularly Polarized Microstrip Antenna using an Open Stub Coupled-Line Phase Shifter," *2020 IEEE International Symposium on Antennas and Propagation and North American Radio Science Meeting*, Montreal, QC, Canada, 2020.

16. G. Dragos, **B. R. Jackson** and C. E. Saavedra, "Millimeter-Wave Metallic Bull's-Eye Antenna with Wideband Broadside Radiation Characteristics," *IEEE Int. Symposium on Antennas and Prop.*, Atlanta, GA, USA, 2019.

17. **B. R. Jackson** and E. Merkley, "A Wide Bandwidth Low-Profile Top-Loaded Pyramidal Antenna," *2018 IEEE International Symposium on Antennas and Propagation & USNC/URSI National Radio Science Meeting*, Boston, MA, USA, July 2018.

18. E. Merkley, **B. R. Jackson**, C. Saavedra and Y. Antar, "A Compact Cavity-Backed Monopole Antenna for UWB Applications," *2017 IEEE International Symposium on Antennas and Propagation & USNC/URSI National Radio Science Meeting*, San Diego, CA, USA, July 2017.

19. E. Merkley, **B. R. Jackson**, C. E. Saavedra and Y. M. M. Antar, "Wideband Switched Beam Antenna Array using Cavity-Backed Monopole Elements", *URSI General Assembly and Scientific Symposium*, Montreal, QC, Canada, Aug. 2017.

20. **B. R. Jackson**, "Covert and Broadband Direction Finding using Low-Profile Slot Spiral Antennas," *2016 IEEE International Symposium on Antennas and Propagation/USNC-URSI National Radio Science Meeting*, Fajardo, Puerto Rico, USA, July 2016.

21. Y.T. Chan, F. Chan, W. Read, R. Inkol, **B. R. Jackson**, and B.H. Lee, "Probable Regions for Emitter Localization," *IEEE Military Communications Conference (MILCOM 2015)*, Tampa, Florida, USA, October 2015.

22. **B. R. Jackson**, and B. Liao, "Uniform Circular Array with Integrated Microstrip Tapered Baluns," *2015 IEEE International Symposium on Antennas and Propagation*, Vancouver, BC, Canada, July 2015.

23. Y.T. Chan, F. Chan, W. Read, **B. R. Jackson**, and B.H. Lee, "Hybrid Localization of an Emitter by Combining Angle-of-Arrival and Received Signal Strength Measurements," *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2014)*, Toronto, ON, Canada, May 2014.

24. S. Wang, **B. R. Jackson**, S. Rajan, and F. Patenaude, "Received Signal Strength-Based Emitter Geolocation Using an Iterative Maximum Likelihood Approach," *IEEE Military Communications Conference (MILCOM 2013)*, San Diego, CA, USA, November 2013.

25. L. Zhang, S. Watson, Z. Hong, R. Boudreau, and **B. R. Jackson**, "Improved Doppler Mitigation Techniques for LTE Uplink Transmission," *IEEE Military Communications Conference (MILCOM 2013)*, San Diego, CA, USA, November 2013.

26. Y.T. Chan, H.C. So, B.H. Lee, F. Chan, **B. R. Jackson**, and W. Read, "Angle-of-Arrival of an Emitter from Air Platforms," *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2013)*, Regina, SK, Canada, May 2013.

27. S. Wang, R. Inkol, **B. R. Jackson**, and S. Guo, "Ambiguity Resolution in RSS-Based Emitter Geolocation," *IEEE International Conference on Computing, Networking and Communications (ICNC 2013)*, San Diego, CA, USA, January 2013.

28. S. Wang, **B. R. Jackson**, and R. Inkol, "Performance Characterization of AOA Geolocations Systems using the von Mises Distribution," *IEEE Vehicular Technology Conference*, Quebec City, QC, Canada, September 2012.

29. S. Wang, **B. R. Jackson**, and R. Inkol, "Hybrid RSS/AOA Emitter Location Estimation Based on the Least Squares and the Maximum Likelihood Criteria," *IEEE Queen's Biennial Symposium on Communications*, Kingston, ON, Canada, May 2012.

30. S. Wang, R. Inkol, and **B. R. Jackson**, "Relationship Between the Maximum Likelihood Emitter Location Estimators Based on Received Signal Strength (RSS)," *IEEE Queen's Biennial Symposium on Communications*, Kingston, ON, Canada, May 2012.

31. **B. R. Jackson** and C. E. Saavedra, "A Divide-by-Three Regenerative Frequency Divider using a Subharmonic Mixer," *NORCHIP Conference*, Lund, Sweden, November 2011.

32. S. Wang, **B. R. Jackson**, and R. Inkol, "Impact of Emitter-Sensor Geometry on Accuracy of Received Signal Strength Based Geolocation," *IEEE 74th Vehicular Technology Conference*, San Francisco, CA, USA, September 2011.

33. **B. R. Jackson**, "Emitter Geolocation using Received Signal Strength Difference with Randomly Distributed Sensors," *IASTED International Conference on Wireless Communications*, Vancouver, BC, Canada, June 2011.

34. **B. R. Jackson**, S. Wang, and R. Inkol, "Received Signal Strength Difference Emitter Geolocation Least Squares Algorithm Comparison," *IEEE Canadian Conference on Electrical and Computer Engineering (CCECE)*, Niagara Falls, ON, Canada, May 2011.

35. S. Guo, **B. R. Jackson**, S. Wang, W. Arnold, and R. Inkol, "A Novel Density-Based Geolocation Algorithm for a Non-cooperative Radio Emitters Using Power Difference of Arrival," *SPIE Defense, Security, and Sensing*, Orlando, FL, USA, April 2011.

36. **B. R. Jackson** and C. E. Saavedra, "Variable MEMS Capacitors for Millimeter-Wave Filtering Applications," *2009 XV IBERCHIP Workshop*, pp. 477–480, Buenos Aires, Argentina, March 2009.

37. **B. R. Jackson** and C. E. Saavedra, "A CMOS Amplifier with Third-Order Nonlinear Distortion Cancellation," *IEEE Topical Meeting on Silicon Monolithic Integrated Circuits in RF Systems*, pp. 217–220, San Diego, CA, USA, January 2009. **Best Student Paper Award**.

38. **B. R. Jackson** and C. E. Saavedra, "A 3 GHz CMOS Quadrature Oscillator Using Active Superharmonic Coupling," *IEEE European Microwave Integrated Circuits Conference*, pp. 1109–1112, Munich, Germany, October 2007.

39. G. F. Perez Sanchez, A. Morales-Acevedo, **B. R. Jackson**, and C. E. Saavedra "Thin Film Bulk Acoustic Wave Resonators for their Application in Microwave Filters," *International Conference on Electrical and Electronics Engineering (ICEEE)*, pp. 353–356, Mexico City, Mexico, September 2007.

40. A. M. El-Gabaly, **B. R. Jackson**, and C. E. Saavedra, "An L-Band Direct-Digital QPSK Modulator in CMOS," *URSI International Symposium on Signals, Systems, and Electronics (ISSSE)*, pp. 563–566, Montreal, QC, Canada, July 2007.

41. **B. R. Jackson**, Y. Zheng and C. E. Saavedra, "A CMOS Direct-Digital BPSK Modulator using an Active Balun and Common-Gate Switches," *IEEE International Symposium on Circuits and Systems (ISCAS)*, pp. 2534–2537, New Orleans, USA, May 2007.

42. **B. R. Jackson** and C. E. Saavedra, "Frequency Shift Keying (FSK) Modulator using a MEMS Switch," *XII IBERCHIP Workshop*, pp. 234–237, San Jose, Costa Rica, March 2006.

43. **B. R. Jackson** and C. E. Saavedra, "An L-Band Frequency Doubler using a Time-Delay Technique," *IEEE Topical Meeting on Silicon Monolithic Integrated Circuits in RF Systems*, pp. 131–134, San Diego, CA, USA, January 2006.

44. C. E. Saavedra, A. Morales-Acevedo, **B. R. Jackson**,"Microwave Bandpass Filters using Zinc Oxide Resonator Membranes," *XIV International Materials Research Congress*, Cancun, Mexico, August 2005.

**Peer-Reviewed Technical Reports:**

43. **B. R. Jackson**, "Dismounted Force Protection ECM Antenna Performance," Defence R&D Canada – Ottawa Scientific Report, 2017.

44. **B. R. Jackson**, "Advanced Communications C2EA Performance Assessment," Defence R&D Canada – Ottawa Scientific Report, 2017.

45. **B. R. Jackson**, "Improved Force Protection ECM through Antenna Optimization," Defence R&D Canada – Ottawa Scientific Report, 2016.

46. **B. R. Jackson**, "Dismounted ECM Simulations on Manpack Antennas and ECM Deployment Level," Defence Science & Technology Laboratory (Dstl), United Kingdom, 2015.

47. **B. R. Jackson**, and B. Liao, "Direction Finding for Modern Communications," Defence R&D Canada – Ottawa Scientific Report, 2015.

48. **B. R. Jackson**, B. Liao, S. Rajan, and S. Wang "Theory, Design, and Measurement of Novel Uniform Circular Antenna Arrays for Direction of Arrival Estimation," Defence R&D Canada – Ottawa Scientific Report, 2015.

49. **B. R. Jackson**, and B. Liao, "Geolocation Experiments for Modern Communications," Defence R&D Canada – Ottawa Scientific Report, 2013.

50. **B. R. Jackson** and B. Liao, "Experiments with Synchronization in Modern Communications," Defence R&D Canada – Ottawa Technical Memorandum, 2012.

51. S. Watson and **B. R. Jackson**, "Geolocation Strategies for Modern Communications," Defence R&D Canada – Ottawa Technical Report, 2012.
52. S. Henault, **B. R. Jackson**, and Y. Antar, "Design and Integration of a Low-Cost Multi-Purpose Switched Antenna Array EW Payload for Small UAVs," Defence R&D Canada – Ottawa Technical Report, 2012.
53. **B. R. Jackson**, "The Effects of Mutual Coupling and Antenna Vehicle Installations on Two-Channel Phase Interferometry for Emitter Geolocation," *Defence R&D Canada – Ottawa Technical Memorandum*, 2011.
54. **B. R. Jackson**, "The Effect of Practical Antenna Vehicle Installations on Radiation Patterns and the Implications for Received Signal Strength Emitter Geolocation," *Defence R&D Canada – Ottawa Technical Memorandum*, December 2011.
55. S. Wang, **B. R. Jackson**, and R. Inkol, "Maximum Likelihood Geolocation Using a Mixed Combination of Sensors: Theoretical Foundations," *Defence R&D Canada – Ottawa Technical Memorandum*, December 2011.
56. **B. R. Jackson**, "GeoLAB: A Geolocation Algorithm Testbed and Benchmarking Tool," *Defence R&D Canada – Ottawa Technical Memorandum*, June 2011.
57. **B. R. Jackson**, S. Wang, and R. Inkol, "Emitter Geolocation Estimation using Power Difference of Arrival: An Algorithm Comparison for Non-Cooperative Emitters," *Defence R&D Canada – Ottawa Technical Report*, May 2011.
58. **B. R. Jackson** and D. S. Elsaesser, "Automated Radio Emitter Geolocation: A Klondike Experiment at DRDC Ottawa in August 2010," *Defence R&D Canada – Ottawa Technical Memorandum*, April 2011.

## Invited Presentations

1. **B. R. Jackson**, Improved ECM Performance through Antenna Pattern Optimization, Oral presentation to Defence Science & Technology Laboratory, London, United Kingdom, March 17, 2016.
2. **B. R. Jackson**, Advanced Antenna ECM Performance for Future Dismounted Soldiers, Oral presentation to Defence Science & Technology Laboratory, London, United Kingdom, April 1, 2015.
3. **B. R. Jackson**, Modern Communications Electronic Warfare, Oral presentation to the Royal Military College of Canada Department of Applied Military Science, Ottawa, Canada, November 21, 2014.
4. **B. R. Jackson**, Electromagnetic Spectrum Operations Research in Canada, Oral presentation to Defence Science & Technology Laboratory, London, United Kingdom, November 6, 2014.
5. **B. R. Jackson**, Applications of Unmanned Surface Vehicles to Naval Electronic Warfare, Oral presentation to the NATO SCI Electronic Warfare Specialists Workshop, Portsmouth, United Kingdom, March 4, 2014.
6. **B. R. Jackson**, Communications Electronic Warfare for Contemporary Wireless Systems, Oral presentation to the Royal Military College of Canada Department of Applied Military Science, Ottawa, Canada, November 13, 2013.
7. **B. R. Jackson** and B. Liao, Modern Communications Geolocation Techniques and Test Results (U), Oral presentation to Royal Canadian Mounted Police (RCMP) Technical Investigation Services, Ottawa, Canada, September 12, 2013.

8. **B. R. Jackson** and B. Liao, Update on Canada's Modern Communications Geolocation Research, Oral presentation to Canadian Forces Information Operations Group (CFIOG), Ottawa, Canada, June 11, 2013.