

Curriculum Vitae

Neil E. Anderson

C: (780) 842-9471 neil4@ualberta.ca

Linkedin: <https://www.linkedin.com/in/neil-ernest-anderson>

Temporary
8022 109 St. NW
Edmonton, AB T6G 2X9

Permanent
Box 3445
Wainwright, AB T9W 1T4

EDUCATION

M. Sc. In Materials Engineering September 2016 - Present
University of Alberta, Edmonton, AB

Supervisor: Dr. Leijun Li
Research areas: Physical metallurgy, microstructure-mechanical property correlation, and failure analysis of microalloyed steels, stainless steels, and advanced alloy systems.
Research Topic: Improving Low-Temperature Weld Seam Toughness of Electric Resistance Welded X70 Linepipe
Key Courses: Advanced Materials Thermodynamics, Advanced Processing of Microalloyed Steels, Business Contracts, Welding Metallurgy

B Sc. Materials Engineering Cooperative Program* September 2011 – May 2016
University of Alberta, Edmonton, AB
With Distinction
Program Engineering Work Experience - 20 months

4th Year Design Projects: Processing Petroleum Coke to High Grade Activated Carbon for Supercapacitor Materials, Additive Manufacturing of Inconel 625
Key Electives: Fundamentals of Welding, Ceramics, Natural Resource and Env. Law, Eng. Safety and Risk Management, Special Projects
Special Projects Topic: Investigating Ni-YSZ SOFC Anodes by Refining Pore Size and Distribution

ACADEMIC/PROFESSIONAL ACTIVITIES

- Education Course Coordinator for ASM Edmonton May 2017 - Present
 - o Liason with ASM Edmonton, ASM International, and the Education Course Chair
 - o Organize logistics, advertising, registrations, and course materials for upcoming (January 2108) ASM Edmonton Education Course: Corrosion
 - o University of Alberta Graduate Student Representative for ASM Edmonton September 2016 - Present
 - o Liason between ASM Edmonton Executive and U of A graduate students
 - o Plan and communicate opportunities and events through ASM Edmonton to graduate students.
- University of Alberta AWS-CWA Student Association Social Event Coordinator August 2016 - Present
 - o Plan and run social events for members of the U of A AWS-CWA Student Association
 - o Assist with running AWS-CWA informational events

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PUBLICATIONS

- Anderson, N., Cocchio, J., Watson, E., Lefsrud, L., & Li, L. (2017, in press). Employing multifaceted teaching and learning components to foster CEAB graduate attribute development. *Proceedings of the 2017 Canadian Engineering Education Association 8th Annual Conference*, Toronto, Ontario: University of Toronto. More information at: <https://ceea.ca/en/publications/> - Main author

Forthcoming Invited Publication Submittal

- Anderson, N., Cocchio, J., Watson, E., Lefsrud, L., & Li, L. (2017, under revision). Employing multifaceted teaching and learning components to foster CEAB graduate attribute development. *Canadian Journal of Science, Mathematics, and Technology Education: Special Issue on Innovation and Diversity in Engineering Education* - Main author

PRESENTATIONS

- Anderson, N., Cocchio, J., Watson, E., Lefsrud, L., & Li, L. (2017, June). Employing multifaceted teaching and learning components to foster CEAB graduate attribute development. Paper presented at the *Canadian Engineering Education Association Conference*, Toronto, ON. – Main author and Presenter
- Cocchio, J., Watson, E., Anderson, N. & Lefsrud, L. (2017, June). CEAB graduate attributes into a mandatory course “Leadership in Risk Management”. Workshop presented at the *Canadian Engineering Education Association Conference*, Toronto, ON. – Co-presenter
- Anderson, N., Cocchio, J., Watson, E., Lefsrud, L., & Li, L. (2017, June). Employing multifaceted teaching and learning components to foster CEAB graduate attribute development. Poster presented at the *Faculty of Engineering Graduate Research Symposium*, Edmonton, AB. – Main Author and Presenter

Forthcoming

- Anderson, N., Cocchio, J., Watson, E., Lefsrud, L., & Li, L. (2017, October). Employing multifaceted teaching and learning components to foster CEAB graduate attribute development. Paper presented at the *67th Canadian Chemical Engineering Conference*, Edmonton, AB. – Main author and Presenter
- Kannan, R., Wang, Y., Anderson, N., Li, L. (2107, October). Instrumented indentation characterization of bainite/martensire duplex microstructure on mechanical properties. Paper presented at *Materials Science & Technology 2017*, Pittsburgh, PA. – Reviewer and Assistant Author

Forthcoming Invited Presentations

- Cocchio, J., Anderson, N., & Winkel, G. (2017, October). Laying the foundation: ten elements of an effective laboratory safety management program. Presentation at *Materials Science & Technology 2017*, Pittsburgh, PA. – Co-author and Presenter

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CONFERENCES

- Faculty of Engineering Graduate Research Symposium (FEGRS) – June, 2017
- Canadian Engineering Education Association Conference (CEEA) – June, 2017
- CanWeld Conference (CWC) – October, 2016
- The Minerals, Metals, and Materials Society Conference (TMS) – February, 2016

Forthcoming

- 67th Canadian Chemical Engineering Conference (CSCChE) – October, 2017
 - o Volunteered with the Process Safety and Risk Management symposium
- Materials Science & Technology (MS&T) – October, 2017

RESEARCH INTERESTS

- Failure of materials, specifically metals and alloys
- Physical metallurgy and microstructure
- Mechanical properties of metals and alloys
- Welding of metals and alloys
- Microstructure – mechanical properties correlation and behaviour modeling

ACADEMIC AWARDS

- AIST Foundation's Steel Scholarship – Smith Graduate (AIME), 2017
- 2016 Centre for Teaching and Learning Summer Student Employment Award, Apr, 2016
- Evraz North America R&D Best Student Presentation (Twice), Aug. and Dec., 2015
- Jason Lang Scholarship, 2012-2014
- Materials Engineering Entrance Scholarship, 2012
- Chancellor's Entrance Citation Award, 2011, renewed 2012-2014 (Full Amount)
- Craighton Twa Engineering Academic Excellence Scholarship, 2011
- University of Alberta Academic Excellence Scholarship, 2011

SKILLS

- Steel pipe related manufacturing, testing, and integrity
- Small scale project management
- Conducting research trials on steel and solid oxide fuel cell materials
- Preparation of samples from steel plate and pipe for mechanical property and metallographic testing
- Heat treatment of research samples
- Metallography
- Optical microscopy
- Scanning electron microscopy
- Tension Testing
- Charpy V-Notch Impact testing
- Hardness testing
- Plasma torch operation

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- Oxy-acetylene torch operation
- Limited Welding; GMAW, SAW, SMAW
- Effective communication of technical data to both internal and external parties
- Teamwork, including leadership of small working groups of peers
- Educational content creation and delivery in the areas of risk management and organizational leadership principles, and their application
- Risk based analysis and selection for prioritization of pipeline cracking concerns based on in-line inspection information and integrity dig reports
- Proficient in Microsoft Excel, Outlook, PowerPoint, and Word
- Familiar with MATLAB and LaTeX

WORK EXPERIENCE

RESEARCH ASSISTANT, DR. LEIJUN LI, CHEMICAL AND MATERIALS
ENGINEERING, FACULTY OF ENGINEERING, UNIVERSITY OF ALBERTA

Edmonton, AB

September 2016, - Present

- Research activities in the area of physical metallurgy and welding metallurgy of microalloyed steels, stainless steels, and advanced alloy systems including wear resistant materials
 - o Sample preparation and characterization using optical microscopy and scanning electron microscopy.
 - o Mechanical property testing including hardness, tensile, and impact testing.
 - o Mechanical property – microstructure correlation
 - o Project management activities including reporting on research activities and results to stakeholders and sponsors
- Laboratory management including inventory management, arranging and leading meetings, recruiting of sponsors and personnel.
- Supervision of undergraduate students conducting research activities.

TEACHING ASSISTANT, ENGINEERING SAFETY AND RISK MANAGEMENT
PROGRAM, FACULTY OF ENGINEERING, UNIVERSITY OF ALBERTA

Edmonton, AB

September 2016 – Present

- Collaborating with course instructors and Educational Developers in the University's Centre for Teaching and Learning to develop course content and structure.
- Responsible for providing guidance on student team projects and instructing in ENGG 404: Engineering Safety and Risk Management – Leadership in Risk Management content for ~230 students and ENGG406: Engineering Safety and Risk Management – Methodologies and Tools content for ~60 student. Duties included:
 - o Instructing students
 - o Providing guidance on student team project components, facilitating collaboration within student teams, and organizing content to supplement lecture material.
 - o Converting current traditional teaching resources to a blended learning format.
 - o Developing theoretical and supplemental online material for course components.
 - o Assisting with ENGG 404 re-structuring and scheduling to facilitate delivery to an increased student load.

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RESEARCH ASSISTANT, ENGINEERING SAFETY AND RISK MANAGEMENT PROGRAM, FACULTY OF ENGINEERING, UNIVERSITY OF ALBERTA

Edmonton, AB

May 2016 –May 2017

- Collaborating with course instructors and Educational Developers in the University's Centre for Teaching and Learning to develop course content and structure.
- Responsible for various duties in support of expanding ENGG 404: Engineering safety and Risk Management from ~200 to ~1000 students per year, including the following:
 - o Converting current traditional teaching resources to a blended learning format.
 - o Developing theoretical and supplemental online material for course components.
 - o Assisting with ENGG 404 re-structuring and scheduling to facilitate delivery to an increased student load.
 - o Analyzing past exams and exam performance to identify areas of course content and assessment improvement.
 - o Creating a database for past team projects to minimize cases of undetected plagiarism.

CO-OP STUDENT, RESEARCH AND DEVELOPMENT,

EVRAZ NORTH AMERICA, Regina, SK

May –December 2016

- Conducted welding research project on rust inhibitor coatings
- Conducted research to develop heat treatment procedures for new LNG service products
- Conducted mechanical property, optical and scanning electron microscopy, and chemical composition testing in support of various research, QA/QC, and failure analysis projects
- Prepared samples from plate and pipe for metallography and mechanical property testing
- Responsible for managing, reporting, and communicating results to stakeholders

LP PL INTEGRITY CRACK GROUP CO-OP STUDENT,

ENBRIDGE PIPELINES INC., Edmonton, AB

January – August 2014

- Designed and managed research to improve current understanding and further crack assessment processes using inline technologies
- Assessed inline-inspection data for pipeline integrity and preventative maintenance programs
- Developed procedures for the prioritization of safety critical repair activities
- Reviewed and performed QA of internal documentation in support of federal regulatory audit requirements
- Created assessment processes for situations that deviated from normal practice
- Developed improved fitness-for-purpose assessment methodologies to increase pipeline excavation and repair program efficiencies

MUNICIPAL ENGINEERING CO-OP STUDENT,

CITY OF CAMROSE, Camrose, AB

May - August, 2013

- Developed and administered various water conservation programs
- Inspected and reviewed storm sewer infrastructure, and school and playground signage
- Completed and submitted environmental approvals for creek crossing project

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- Created a first draft spreadsheet model to estimate raw water volume availability for city

ASSISTANT PROJECT MANAGER, CONSTRUCTION ENGINEERING,
CFB/ASU WAINWRIGHT, DEPARTMENT OF NATIONAL DEFENSE,
Denwood, AB

May – August, 2012

- Managed and was involved in the design of small projects and assisted on larger projects
- Liaised with other departments to determine operational requirements
- Researched products and solutions to meet operational requirements
- Completed scopes/statements of work and estimates for variety of projects

Other Employment:

- Farm Labourer: Eileen and E. Gordon Anderson, Wainwright, AB - Presently Employed
- Evening Shift Supervisor, East-Alta Co-op Gas Bar, Wainwright, AB – March, 2011 – August, 2012

PROFESSIONAL MEMBERSHIPS

- Materials Advantage (TMS, ACerS, AIST, and ASM Int.)
- APEGA
- AWS
- CWA
- CEEA

CERTIFICATIONS

- University of Alberta Laboratory Safety - 2016
- University of Alberta Chemical Safety – 2016
- WHMIS - 2017
- Standard First Aid – AED & CPR C - 2016
- CSTS-09, Alberta Safety Construction Association - 2014
- Valid Class 5 Driver's License (GDL removed) with a clean driver's abstract.

RECREATIONAL INTERESTS

In my spare time, I enjoy various sports (volleyball, soccer, hockey, badminton, curling, swimming, boxing), woodworking, cooking, and outdoor activities such as camping.