



## SKILLSETS

Environmental Health Physics – Ionising Radiation



Compliance and Auditing



Contaminated Land & Remediation



Expert Witness



Strategic Advisory



## MARKET SECTORS



Property



Waste Management



Construction



Government



Resource



Industrial

## CONTACT

### Email

enquiries@epicenvironmental.com.au

### Phone

1800 779 363

# ROSS KLEINSCHMIDT (PhD)

## Senior Principal Physicist

Ross has a PhD in the field of environmental health physics. He has worked in the field of ionising radiation in an academic environment, as a regulator with Queensland Health's radiation legislation administrator, and more recently as head of a scientific team of health physicists and radiochemists with Queensland Health. Ross has also consulted for the IAEA, Laboratory's Seiborsdorf. He has accumulated a broad spectrum of applied knowledge in areas including radioactive waste disposal and waste store design & operation, decontamination and decommissioning of radiation facilities, contaminated land survey, assessment & remediation, radiation dose reconstruction, and the identification, assessment and management of the impact of naturally occurring radioactive materials (NORM).

## QUALIFICATIONS

- 2011** QUT / Doctor of Philosophy (Environmental Health Physics)
  - 2001** QUT / Master of Applied Science (Research)
  - 1991** QUT / Bachelor of Applied Science (Physics)
  - 1985** QIT / Assoc. Diploma App. Physics
  - 1999** QH / Accredited person (*under the radiation Safety Act 1999*)
  - 1999** QH / Radiation Safety Officer (*under the radiation Safety Act 1999*)
  - 1999** QH / Licence to Use & Licence to Transport Radiation Sources (*under the radiation Safety Act 1999*)
- NATA / Technical Assessor (Radiation Measurement)

## MAJOR PROJECTS

- DES – Radiological Baseline Reconstruction for Minjerribah (Nth Stradbroke Island)
- IAEA ALMERA – Development of radiation incident and emergency radioanalytical response capabilities to meet membership eligibility requirements to the international ALMERA community.
- ADF Bulimba Barracks - GTLS facility radiological decommissioning and decontamination (D&D).
- ENERGEX – Assessment, program development, implementation and waste management of electrical systems replacement project for consumer metering devices containing radium-226 and tritium
- DNRME – Assessment, program development, implementation and monitoring of legacy mineral sands processing plant, Rainbow beach.
- University of Queensland - D&D, radiological waste consolidation and disposal of UQ Radiation Store, St Lucia campus
- Queensland Health - D&D, radiological waste consolidation and disposal, Qld Radium Institute Laboratory, Herston
- Veolia – Investigation, risk assessment and monitoring program development for Qld wastewater recycling project
- HLA Envirosiences – Ben Lomond Uranium Project – Radiological Characterisation Report
- Northern Territory Power & Water Corp. – Radiological Characterisation Report: Kings Canyon Potable Water Resources
- Queensland Health – Commissioning and Systems Development for the Queensland Radioactive Waste Store

## AFFILIATIONS

---

- Adjunct Associate Professor, QUT
- Member, Australasian Radiation Protection Society
- Member, International Union of Radioecology
- Member, South Pacific Environmental Radioactivity Association
- Member, European Radon Association

## EXPERIENCE

### ENVIRONMENTAL HEALTH PHYSICS – IONISING RADIATION

---

Scientific management, supervision and participation in numerous Queensland Government and private sector programs and projects relating to:

- Environmental Radioactivity Baseline Studies and Exposure Pathway Assessments
- Remediation of Naturally Occurring Radioactive Material (NORM) Impacted Sites and Practices
- Development and Implementation of Regulatory Compliance and Surveillance Monitoring
- Radiation Investigations of Contaminated Lands
- Radiation Safety / Workplace Design and Auditing
- CBRE (Radiological Component) Training, Response Planning and Testing Services
- Radiation Incident Dose Reconstruction and Assessment
- Radioactive Waste Consolidation and Disposal
- Transport of Radioactive Materials
- Radiobiology and the Impact of Radioactivity on Non-human Species
- NORM Hazard Mitigation
- Radioanalytical Method Development, Validation and Application
- Research and Development Projects Relating to the Use of Nuclear Techniques and Radiation Safety

### EXPERT WITNESS, STRATEGIC ADVISORY, COMPLIANCE and AUDITING

---

- **Development and Program Liaison Officer, Australian Member Laboratory, IAEA Analytical Laboratories for Measurement of Environmental Radioactivity (ALMERA) Network.** Initiated development and application for membership of Qld Health as an international member radioanalytical laboratory in collaboration with DFAT, ANSTO and ARPANSA.
- **Program Liaison Officer, Queensland Laboratory, Australian Radiation Laboratory Network.** Collaborated with ARPANSA to develop and maintain an Australian network of radiological emergency response radioanalytical and measurement facilities.
- **State Radiation Analyst.** Provided statutory services as a State Radiation Analyst under the Queensland Radiation Safety Act 1999.
- **Expert Consultant (& Committee Chair) IAEA Program.** Scientific committee chair for the program 'Measurement & Assessment of Radionuclides and Non-Radioactive Pollutants in the Terrestrial Environment' in Austria (IAEA Laboratories, Seibersdorf).
- **Expert Advisor, Australian Parliament Senate Estimates Committee.** Provision of professional advice to the review of Defence Policy and Procedures for the management of equipment containing tritium-based light sources in Australia.
- **Expert Witness, Australian Parliament Senate Select Committee on the Dangers of Radioactive Waste.** Expert witness providing professional advice on the safety, design, construction and commissioning of Queensland's radioactive waste store as a possible model for Australian state and territory radiation safety regulators.
- **Technical Assessor, NATA.** Technical expert and auditor for accreditation of radioanalytical laboratories.
- **Drafting Panel Conveyor, Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).** Panel conveyor for development of Safety Guide RPS 16, Pre-Disposal Management of Radioactive Waste.
- **Accredited Person – Certification, Queensland Health.** Certification of Queensland radiation facilities, devices and sources to the Queensland Radiation Safety Standards under the Radiation Safety Act 1999.
- **Journal / Research Peer Reviewer.** Provision of peer reviewer services to international scientific journals and research committees relating to environmental radioactivity including: Radiation Protection Dosimetry, Journal of Environmental Radioactivity, Journal of the Total Environment, Applied Radiation and Isotopes, Isotopes in Environmental and Health Studies, Journal of Hazardous Materials, Chemosphere, International Journal of the Physical Sciences, Radiation Protection in Australasia, University of Wisconsin Sea Grant Institute (Research grant assessment), and Qld Health Forensic & Scientific Services - Research Advisory Committee

## CONTAMINATED LAND & REMEDIATION / NORM IMPACTED SITES

---

- **Project Manager (Radiation), Legacy Heavy Mineral Sand Processing Sites / Product.** Developed, initiated, supervised and reported on radiological investigations, radiation safety operational & remediation plans and preparation of CLIDs for multiple legacy sites across Queensland and New South Wales including Brisbane, Rainbow Beach, Minjerribah, Noosa, Southport, Maryborough (Qld) and Byron Bay, Lismore and Casuarina Beach / Kingscliff (NSW).
- **Lead Investigator, Radiation Dose Assessment, Mining and Mineral Processing Operations – Wolfram Camp Tungsten Mine.** Developed and implemented a dose assessment for a NORM impacted open-cut / underground mine, including assessment of background levels, dose via direct exposure, inhalation of dust and radon / radon progeny.
- **Project Manager / Lead Investigator, Radiological Survey and Dose Assessment for Operations – Kincora Oil and Gas Terminal, Oil Company of Australia.** Developed and implemented a dose assessment for a NORM impacted LPG plant, including assessment of background levels, dose via direct exposure, inhalation of dust and radon / radon progeny.
- **Lecturer / Trainer, Measurement and Monitoring of NORM – SIMTARS NORM and OHS Training Program.** Developed and presented NORM information in collaboration with DNRM Mines Inspectorate to resource sector stakeholders.

## PUBLICATIONS, PRESENTATIONS & RESEARCH

---

### PUBLICATIONS

---

- Kleinschmidt R., Watson D., Janik M., Gillmore G. (2018). **The Presence and dosimetry of radon and thoron in an historical, underground metalliferous mine.** Journal of Sustainable Mining. 17(3): 120-130
- Kleinschmidt R. (2017). **Reference Natural Radionuclide Concentrations in Australian Soils and Derived Terrestrial Air Kerma Rate.** Journal of Environmental Radioactivity. doi: 10.1016/j.jenvrad.2017.03.021
- Kleinschmidt R., Watson D. (2015). **Terrestrial Gamma Radiation Baseline Mapping using Ultra Low Density Sampling Methods.** Journal of Environmental Radioactivity. doi:10.1016/j.jenvrad.2015.05.008
- Watson D., Kleinschmidt R., Finlayson S. (2014). **Gamma Spectrometry and ICP-MS Assessment of NORM in Queensland Major Drainage Catchments.** Proceedings of the 4<sup>th</sup> Asian and Oceanic Congress on Radiation Protection, AOCRP-4. Kuala Lumpur, Malaysia.
- IAEA/AQ/33. (2013). **National and Regional Surveys of Radon Concentration in Dwellings: Review of Methodology and Measurement Techniques.** IAEA Analytical Quality in Nuclear Applications Series. Bochicchio F, Chalupnik S, Hampe D, Kleinschmidt R, Vajda N, Kim CK, Martin P, Sansone U, Gondin da Fonseca AM. International Atomic Energy Agency, Vienna.
- Kleinschmidt R. (2011) **Radioactive Residues Associated with Water Treatment, Use and Disposal in Australia.** Thesis – Doctor of Philosophy. Queensland University of Technology.
- Cook M, Kleinschmidt R. (2011). **Simultaneous Determination of <sup>226</sup>Ra and <sup>228</sup>Ra in Water by Liquid Scintillation Spectrometry.** Australian Journal of Chemistry. 64. 880-884.
- IAEA. (2011) **A Procedure for the Rapid Determination of Ra-226 and Ra-228 in Water by Liquid Scintillation Counting.** IAEA Analytical Quality in Nuclear Applications Series. Drafting & review panel: Cook M, Gaigl SF, Chmielewska I, Kleinschmidt R, Kim CK, Kim YJ, Kis-Benedek G, Kozar logar J, Martin P, Maurizio F, Rusconi R, Sansone U, Sanada T, Tarjan S. International Atomic Energy Agency
- IAEA/AQ/19. (2010) **A Review of Analytical Methodology for the Determination of radium Isotopes in Environmental Samples.** IAEA Analytical Quality in Nuclear Applications Series No. 19. Drafting & review panel: Chalupnik S, Hampe D, Kim CK, Kleinschmidt R, Martin P, Sansone U, Vajda N. International Atomic Energy Agency. Vienna.
- Kleinschmidt R, Black J and Akber R. (2010). **Mapping radioactivity in groundwater to identify elevated exposure in remote and rural communities.** Journal of Environmental Radioactivity. 102. 235-243.
- IAEA/AQ/11. (2009) **A Procedure for the Rapid Determination of Pu Isotopes and Am-241 in Soil and Sediment Samples by Alpha Spectrometry.** IAEA Analytical Quality in Nuclear Applications Series No. 11. Drafting & Review panel: Bochicchio F, Chalupnik S, Hampe D, Kim CK, Kis-Benedek G, Kleinschmidt R, Sansone U, Torvenyi A, Vajda N. International Atomic Energy Agency. Vienna.
- IAEA/AQ/12. (2009) **A Procedure for the Rapid Determination of Po-210 in Water Samples by Alpha Spectrometry.** IAEA Analytical Quality in Nuclear Applications Series No. 12. Drafting & review panel:

Bohicchio F, Chalupnik S, Hampe D, Kim CK, Kis-Benedek G, [Kleinschmidt R](#), Lee MH, Martin P, Matthews KM, Sansone U, Torvenyi A, Vajda N. International Atomic Energy Agency. Vienna.

- [Kleinschmidt R](#). (2009). **Uptake and depuration of <sup>131</sup>I by the macroalgae *Catenella nipae* – potential use as an environmental monitor for radiopharmaceutical waste.** Marine Pollution Bulletin. 58. 1539-1543
- [Kleinschmidt R](#). (2009) **Environmental Tritium Contamination from a Gaseous Tritium Light Device Maintenance Facility.** Radioprotection 44(5). 359-363
- Pham MK, Sanchez-Cabeza JA, Povinec PP, Andor K, Arnold D, Benmansour M, Bikit I, Carvalho F, Dimistov K, Edrev ZH, Engeler C, Fouche FJ, Garcia-Orellana J, Gasco C, Gastaud J, Gudelis A, Hancock G, Holm E, Ibanez FL, Ikaheimonen TK, Ilchmann C, Jenkinson AW, Kanisch G, Kis-Benedek G, [Kleinschmidt R](#), Koukoulidou V, Kuhar B, LaRosa J, Lee S-H, LePetit G, Levy-Palomo I, Liong Wee Kwong L, Llauro M, Maringer FJ, Meyer M, Michalik B, Michel H, Nies H, Nour S, Oh J-S, Oregioni B, Palomares J, Pantelic G, Pfitzner J, Pilvio R, Puskeiler L, Satake H, Schikowski J, Vitorovic G, Woodhead D, Wyse E. (2008). **A New Certified Reference Material for Radionuclides in Irish Sea Sediment (IAEA-385).** Applied Radiation and Isotopes. 66(11). 1711-1717
- [Kleinschmidt R](#) and Akber R. (2008). **The impact of naturally occurring radioactive materials derived from urban water treatment plants in southeast Queensland, Australia.** Journal of Environmental Radioactivity. 99 607-620
- Golding G.M., Mattner R., King G., Peter T., Sadler R., [Kleinschmidt R](#)., White G., and Bates J. (2006). **Terrorism response: Issues involved in the development of a chemical weapons analysis capacity within state public health and forensic laboratories.** In: Proceedings of 6th Annual Health and Medical Research Conference of Queensland, Towards a Healthier Queensland through Research and Innovation. 6th Annual Health and Medical Research Conference of Queensland: Translating Innovation and Research into Better Health, Hilton Hotel, Brisbane, Queensland, (). 23rd - 24th November.
- [Kleinschmidt R](#). (2006). **Residual radioactivity from the treatment of water for urban domestic applications.** Environmental Health Risk III. Transactions on Biomedicine and Health. 9. 373-382
- [Kleinschmidt R](#). (2004). **Gross alpha and beta activity analysis in water – A routine laboratory method using liquid scintillation analysis.** Applied Radiation and Isotopes. 61. 333-338
- Noller BN, Moore MR, [Kleinschmidt R](#). (2003). **An evaluation of atomic radiation exposure in Australian service personnel from consumption of seafood at Hiroshima following the bomb explosion on 6 August 1945.** Report for Commonwealth Department of Veterans' Affairs, Canberra. National Research Centre for Environmental Toxicology & Queensland Health Scientific Services. Australia.
- [Kleinschmidt R](#). (2001) **An Investigation of Fluorometry Techniques for *in-vivo* Bone Mineral Determination.** Thesis – Master of Applied Science. Queensland University of Technology. Brisbane.
- [Kleinschmidt R](#). (2000) **Radionuclides.** Chapter 3.4, Wastewater recycling health effects scoping study, Queensland Health Scientific Services, National Research Centre for Environmental Toxicology and Envirotest Pty Ltd. Qld Dept. of Natural Resources. State of Queensland. Brisbane
- [Kleinschmidt R](#)., Wallace B. (1996). **The investigation, assessment, remediation and management of a tin mineral processing site contaminated with technically enhanced concentrations of naturally occurring uranium and thorium.** Radioactivity in the Environment, Proceedings of the SPERA96 4<sup>th</sup> Biennial Workshop. Darwin
- Wallace JD, [Kleinschmidt R](#), Veevers P. (1995) **The planning, construction and operation of a radioactive waste storage facility for an Australian state radiation regulatory authority.** Proceedings of the 17<sup>th</sup> Annual U.S. Department of Energy Low Level Radioactive Waste Management Conference, Arizona USA.

## CONFERENCE PRESENTATIONS & PROFESSIONAL COMMUNICATIONS

---

- [Kleinschmidt R](#). (2019). **Measurement of External Radiation: Contaminated Land Assessments.** Presentation to the Australian Contaminated Land Consultant Association (ACALCA), 14 March. Brisbane, Australia.
- Hoffman, M., Johansen, M., Cook, M., Howell, N., [Kleinschmidt R](#)., Clegg, J. (2018). **Assessment of radioactive 'hot particles' and marine sediment plutonium and americium levels from the Montebello Islands, Western Australia.** South Pacific Environmental Radioactivity Association SPERA 2018 Conference, 6-9 November, Perth, Australia.
- Cook M., Wong V., Brugger J., [Kleinschmidt R](#). (2018). **Migration and transport of plutonium in Australian climates.** XXII Meeting of the International Mineralogical Association, 13-17 August 2018. Melbourne, Australia.
- [Kleinschmidt R](#). (2018). **Uranium Mining in Queensland – Medium and Long Term Monitoring and Surveillance.** Presentation to the Delegation from the Ministry of Mines of Niger for the UQ Sustainable Mines Institute. August. Brisbane. Australia.

- [Kleinschmidt R.](#) (2018). **Vehicle mounted radiation monitoring system – MONA.** Radiation Safety Officer Users Group meeting, 23 February 2018. Brisbane, Australia.
- [Kleinschmidt R.](#) (2017). **Overview of Radiation and Nuclear Science General Facilities & Capabilities, Current Research Areas.** Radiation Safety Officers User Group meeting, 5 May 2017. Brisbane, Australia.
- [Kleinschmidt R.](#) (2015). **Preliminary radon survey results from a historical (metalliferous) mine: Implications for workers and the public.** Invited speaker, Clean Air Society of Australia and New Zealand. 25 November 2015. Brisbane, Australia.
- [Kleinschmidt R.](#) (2015). **A calibration facility for environmental radiation survey instruments.** Radiation Safety Officers User Group meeting, 17 November 2015. Mt Isa, Australia.
- [Kleinschmidt R.](#) (2015). **Preliminary radon survey results from a historical mine in North Queensland: Implications for workers and the public.** Invited speaker, Australian Society of Exploration Geophysicists. 05 March 2015. Brisbane, Australia.
- Cook M., [Kleinschmidt R.](#) (2014). **The analysis of plutonium isotopes in Queensland soils.** RACI National Congress. 07 – 12 December 2014. Adelaide, Australia.
- [Kleinschmidt R.](#) (2014). **QRBP – Queensland Radiation Baseline Project, Marine Biota.** Health & Food Sciences Precinct Seminar Series. 28 November, Coopers Plains. Australia.
- [Kleinschmidt R.](#), Watson D. (2014). **Ultra-low density sampling methods and applications in baseline radiometric mapping.** South Pacific Environmental Radioactivity Association conference, SPERA2014. 01 – 04 September 2014. Darwin, Australia.
- [Kleinschmidt R.](#), Wallace J. (2014). **The design, fabrication and characterisation of an environmental radiation calibration facility for NORM measurements.** South Pacific Environmental Radioactivity Association conference (poster), SPERA2014. 01 – 04 September 2014. Darwin, Australia.
- [Kleinschmidt R.](#) (2014). **Validation of baseline (background) terrestrial gamma radiation levels for Queensland as derived from drainage sediment geochemistry mapping data.** Health & Food Sciences Precinct, National Science Week, 18 – 22 August. Coopers Plains. Brisbane.
- Watson D., [Kleinschmidt R.](#), Finlayson S. (2014). **Gamma Spectrometry and ICP-MS Assessment of NORM in Queensland Major Drainage Catchments.** IRPA Regional Congress – Proceedings of The Fourth Asian and Oceanic Congress on Radiation Protection, AOCR-4. 12-16 May 2104. Kuala Lumpur, Malaysia.
- Watson D, [Kleinschmidt R.](#) **Accuracy & Portability of Background Gamma Radiation Survey Data.** Australasian Radiation Protection Society ARPS2013 Conference, 13-17 October 2013. Cairns. Australia.
- [Kleinschmidt R.](#) **Radiation Awareness in Mining, Mineral Processing and Industry.** *Invited speaker* – Australian Institute of Occupational Hygienists seminar series. Brisbane, Melbourne, Adelaide, Perth. July 2013.
- [Kleinschmidt R.](#), Wallace JD. **Radiation Awareness in Mining and Mineral Processing.** *Invited speaker* – Safety in Mines Testing and Research Station (SIMTARS). Redbank, Queensland. 22 February 2013.
- [Kleinschmidt R.](#) **Medical Laboratory Sciences and Environmental Health Physics – What’s the connection?** *Invited speaker* - Australian Institute of Medical Scientists and New Zealand Institute of Medical Laboratory Science South Pacific Congress 2011 (AIMS/NZIMLS SPC2011). Gold Coast Convention Centre, Gold Coast, Queensland from 8 - 12 August, 2011.
- [Kleinschmidt R.](#) **Use of Digital Phosphor Plate Imaging (Autoradiography) In The Investigation Of Radioactive Contamination Events.** *Accepted for presentation* - International Conference on Radioecology and Environmental Radioactivity, ICRER 2011. 19-24 June 2011. Hamilton. Canada.
- [Kleinschmidt R.](#) **Radioactive Residues Associated with Water Treatment, Use and Disposal in Australia.** PhD Final Seminar. Queensland University of Technology. 29 November 2010. Brisbane. Australia
- [Kleinschmidt R.](#) **Liquid scintillation analysis methods in water quality and water treatment residue assessments.** *Accepted for presentation* - International Conference on Advances in Liquid Scintillation Spectrometry, LSC2010. September 2010. Paris. France.
- [Kleinschmidt R.](#) **Identification and Impact of Radioactive Residues Associated with Water Treatment, Use and Disposal in Australia.** South Pacific Environmental Radiation Association Conference SPERA2010. 30 August – 3 September 2010, Gold Coast. Australia
- Cook ML, Maguire GL, [Kleinschmidt R.](#) **Gross beta activity analysis with retention of volatile iodine-131 in various aqueous matrices.** South Pacific Environmental Radiation Association Conference SPERA2010. 30 Aug – 3 Sep 2010, Gold Coast. Australia
- Coles K, Cook ML, Maguire GL, [Kleinschmidt R.](#) **Water sampling methods for measurement of radioactivity in wastewater and recycled water treatment plants.** South Pacific Environmental Radiation Association Conference SPERA2010. 30 Aug – 3 Sep 2010, Gold Coast. Australia

- [Kleinschmidt R](#), Barr S, Cook M and Watson D. **Environmental Tritium Contamination from a Gaseous Tritium Light Device Maintenance Facility**. International Conference on Radioecology and Environmental Radioactivity, June 2008. Bergen, Norway.
- Watson D and [Kleinschmidt R](#). **The benefits of liquid scintillation analysis in the assessment, decontamination and decommissioning of a gaseous tritium light device maintenance facility**. International Conference on Advances in Liquid Scintillation Spectrometry, May 2008. Davos. Switzerland
- [Kleinschmidt R](#). **Impact of technologically enhanced radioactive wastes derived from water use applications in Australia - an update in 2008**. *Invited speaker* - Australasian Radiation Protection Society – Queensland Branch Special Interest Group Seminar, May 2008. Brisbane.
- [Kleinschmidt R](#). **Contamination of an Instrument Maintenance Facility by Gaseous Tritium Light Source Residues**. Australasian Radiation Protection Society ARPS32 Conference, September 2007. Brisbane.
- Watson D.M., [Kleinschmidt R.](#), Barr S. **Decontamination and Decommissioning of the University of Queensland Radon Laboratory**. Australasian Radiation Protection Society ARPS 32 Conference, September 2007. Brisbane.
- [Kleinschmidt R](#). **Radioactive material at Damascus Barracks, Meeandah – Assessment, Dose Reconstruction and Remediation**. Consultancy communication for Australian Department of Defence, Damascus Barracks. May 2007. Brisbane.
- Barr S and [Kleinschmidt R](#). Disposal of Low Level Radioactive Materials via Incorporation in Cement Matrix. Australasian Radiation Protection Society ARPS31, October, 2006, Sydney.
- [Kleinschmidt R](#). **Environmental Radioactivity – Implications for Environmental Consultants in Queensland**. *Invited speaker* – Australian Contaminated Land Consultants Association – Qld. Seminar. 17 October 2006. Brisbane. Queensland.
- [Kleinschmidt R](#). **Impact of technologically enhanced radioactive wastes derived from water use applications in Australia**. PhD Confirmation of Candidature Seminar, September 2006. Queensland University of Technology. Brisbane.
- [Kleinschmidt R](#). **Point-of-use Water Treatment and NORM (Naturally Occurring Radioactive Material)**. CRC for Water Quality and Treatment Fifth Postgraduate Student Conference 10-13 July 2006. Melbourne. Victoria.
- [Kleinschmidt R](#). **Residual radioactivity derived from the treatment of water for urban applications**. 5<sup>th</sup> Annual Health and Medical Research Conference of Queensland. Brisbane. Queensland. November 2005
- [Kleinschmidt R](#). **Residual radioactivity from the treatment of water for urban domestic applications**. Third International Conference on the Impact of Environmental factors on Health – Environmental Health Risk III. Bologna. Italy, September 2005
- [Kleinschmidt R](#). **Gross alpha and beta activity analysis in water – A routine laboratory method using liquid scintillation analysis**. International Committee for Radionuclide Metrology Conference on Low Level Radioactivity Measurement Techniques. Vienna, Austria. 2003
- [Kleinschmidt R](#). **Will I Glow in the Dark?... A Story about Gaseous Tritium Light Devices**. QARPS Seminar Series. Queensland Health Scientific Services. Brisbane. 2003
- [Kleinschmidt R](#). **Phase 2 – Bulimba, Detailed Facility Characterisation Preliminary Report**. Consultancy communication for Joint Logistics Unit, Australian Department of Defence, Bulimba Barracks. April 2003. Brisbane.
- [Kleinschmidt R](#). **Radioactive Tracers**. Queensland Science Week Seminars. Queensland Health Scientific Services. Brisbane. Australia. 2002
- [Kleinschmidt R](#). **Radioactive Waste Monitoring using Bio-indicators – The impact of sampling and Environmental Conditions**. Environmental Radioactivity: Migration, Measuring and Monitoring in the South Pacific, SPERA2002, Lucas Heights Science and Technology Centre, Sydney. Australia 2002.
- [Kleinschmidt R](#). **Environmental Radioactivity, Investigation and Management**. *Invited speaker* – 2001 Local Symposium, Physical Sciences and Engineering in Medicine – The Local Scene in Queensland XII. Brisbane. August 2001.
- [Kleinschmidt R](#). **Radiopharmaceutical Waste, Friend or Foe?** Queensland Health Scientific Services Seminar Series. Brisbane. May 2001.
- [Kleinschmidt R](#). **Radioactive Iodine 131 and Technetium 99, Sewage Plume Tracers**. Environmental Changes and Radioactive Tracers, SPERA2000, Noumea, New Caledonia. 2000.
- [Kleinschmidt R](#). **Results of a limited gamma spectrometry inter-comparison on mineral sand products & associated issues**. Environmental Changes and Radioactive Tracers, SPERA2000, Noumea, New Caledonia. 2000.

- Kleinschmidt R, Syrmis M. **Tracing of sewage plumes using radioisotopes.** Training Workshop, Commonwealth Science Council, Queensland Health Scientific Services & National Research Centre for Environmental Toxicology, Brisbane. 2000.
- Kleinschmidt R. **Management of incidents involving radioactive materials.** *Invited speaker* - CHEM Unit, Department of Emergency Services Training Workshop, Brisbane. 2000.
- Kleinschmidt R. **Radioactivity in Air.** Environmental impact of air pollution. Commonwealth Science Council Workshop. Brisbane. 1999.
- Kleinschmidt R. **Management of Medical Wastes – Radioactive Waste.** *Invited speaker* – Australian Waste Water Association Workshop, Tweed Heads. 1998.
- Kleinschmidt R, Wallace BW. **Assessment of land contaminated with radioactive material.** Environmental Radioactivity and its application in environmental studies, SPERA98, Christchurch, New Zealand. 1998.
- Kleinschmidt R. **The investigation, assessment, remediation and management of a tin mineral processing site contaminated with technically enhanced concentrations of naturally occurring uranium and thorium.** Radioactivity in the Environment, SPERA96 4<sup>th</sup> Biennial Workshop Proceedings, Darwin 1996.
- Kleinschmidt R. **Commissioning and operation of Queensland Health’s radioactive waste storage facility,** Australian Radiation Protection Society ARPS20, Brisbane. 1995
- Kleinschmidt R. **Incidents involving radioactive substances.** Industrial Radiation Safety – RSO’s User’s Group Proceedings, Dept. of Applied Physics, University of Central Queensland. Rockhampton. 1993.

## MANUALS / TRAINING COURSES

---

- **Field Operations Health & Safety Guidelines.** Health Physics Group, Queensland Health Scientific Services.
- **Radiation Safety and Protection Plan.** Queensland Health Scientific Services.
- **Radiation Protection Course – Unsealed radioactive substances.** Qld. Health Approval/s:  
No. *ED017* Users of unsealed radioactive substances for teaching or research &  
No. *ED026* Licence to use unsealed radioactive substances for pathology & Radiation Safety Officer Certification for unsealed radioactive substances used in a pathology practice. Queensland Health Scientific Services. 1999 – 2013
- **Radiation Safety Officer Course – Industrial Radiation Sources.** Developed for McKavangh Engineering Services Pty Ltd.
- **Tritium Measurement – Persons maintaining Gaseous Tritium Light Devices.** Queensland Health Scientific Services.
- **Management of Radioactive Contamination Associated with LPG Production (Oil Company of Australia).** Health Physics Group, Queensland Health Scientific Services.
- **Procedures & Training. Removal, Consolidation and Disposal of Devices Containing Radioactive Materials (ENERGEX)** Health Physics Group, Queensland Health Scientific Services
- **Technical Reference Manual – Queensland Radioactive Waste Interim Store.**

## RESEARCH and DEVELOPMENT (Grant Summary)

- **2019**                      **Radiological Baseline Reconstruction – Case Study for Standard method Guideline Development**


---

Collaborators: Dr Ross Kleinschmidt, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia.  
Drew Watson, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia  
Peter Medley, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia  
Puspendra Chauhan, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia  
Kathy Coles, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia.

Funding: Grant (FSS, RSS19-005) - \$9230; In-kind - \$37500; TOTAL - \$46 730
- **2018 - 2019**              **Radon (NORM) in Historical Buildings – Scoping Project**

Collaborators: Dr Ross Kleinschmidt, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia.  
Puspendra Chauhan and Kathy Coles, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia.

- Funding: Grant (FSS, RSS18-025) - \$100; In-kind - \$9326; TOTAL - \$9 426
- **2018 - 2019** **Primordial radionuclide disequilibria in sediments – a tool for discrimination between natural and anthropogenic contaminant sources (Mary Kathleen)**

Collaborators: Dr Ross Kleinschmidt, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia.  
Tania Hall, Abandoned Mine Unit (Nth Queensland), DNRM.

Funding: Grant (FSS, RSS18-003) - \$74730; In-kind - \$125622; TOTAL - \$200 352
  - **2017 – 2019** **Naturally Occurring Radioactive Materials (NORM) in mineral processing slag dumps – assessing a possible construction material resource.**

Collaborators: Dr Ross Kleinschmidt, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia.

Funding: Grant (FSS, RSS17-051) - \$4120; In-kind - \$27413; TOTAL - \$31 533
  - **2017 – 2019** **Development of a passive thoron progeny monitor based on the TASL track etch platform**

Collaborators: Dr Ross Kleinschmidt, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia.

Funding: Grant (FSS, RSS17-023) - \$9300; In-kind - \$35078; TOTAL - \$44 378
  - **2016 - 2017** **Predicting high risk NORM environments in the resources sector**

Collaborators: Dr Ross Kleinschmidt, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia.  
Darcy Milburn, Wolfram Camp Mining Pty Ltd, Dimbulah. Australia

Funding: Grant (FSS, RSS16-011) - \$3670; In-kind - \$48500; TOTAL - \$52 170
  - **2015 - 2017** **Radon, Thoron and Gamma Radiation Levels in Historical Metalliferous (Tungsten) Mines: Implications for Existing and New Underground Mine Safety**

Collaborators: Dr Ross Kleinschmidt & Drew Watson, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia.  
Michael Sturman, Wolfram Camp Mining Pty Ltd, Dimbulah. Australia  
Prof. Gavin Gillmore, Kingston University, London. UK

Funding: Grant (FSS, RSS15-008) - \$56000; In-kind - \$123827; TOTAL - \$174 227
  - **2014 - 2016** **Environmental Calibration Pads – Development, Characterisation & Commissioning**

Collaborators: Dr John Wallace, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia.  
Dr Ross Kleinschmidt, Drew Watson & Pushpendra Chauhan, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia

Funding: Grant (FSS RSS14-004) - \$267590; In-kind - \$150000; TOTAL - \$417 590
  - **2013 - 2015** **Terrestrial gamma radiation baseline mapping using ultra low density sampling methods**

Collaborators: Dr Ross Kleinschmidt & Drew Watson, Radiation & Nuclear Science, QHFSS, Coopers Plains. Australia.  
Dr Joseph Tang, Geological Survey Queensland, DNRM. Brisbane. Australia

Funding: Grant (FSS RSS13-03) - \$28000; In-kind - \$79200; TOTAL - \$107 200
  - **2011 - 2013** **Mapping of groundwater radiological water quality as a potential indicator of community exposure to naturally occurring radioactive material in Queensland.**

PhD Candidate: Ross Kleinschmidt (project within PhD research program)  
Supervisors (QUT): Dr Riaz Akber, Prof. Lidia Morowski

Funding: Grant (FSS RSS08-06) - \$34236; In-kind - \$125500; TOTAL - \$159 736



## POSITION SUMMARY

---

● 2019 - Present	Senior Principal Physicist	<b>Epic Environmental</b>
● 2007 - 2019	Principal Health Physicist, Radiation and Nuclear Sciences Forensic and Scientific Services	<b>Queensland Health</b>
● 1997 – 2007	Advanced Senior Health Physicist, Queensland Health Scientific Services	<b>Queensland Health</b>
● 1996 – 1997	Senior Health Physicist, Biomedical & Health Technology Services	<b>Queensland Health</b>
● 1995 – 1996	Senior Physicist (Health Physics Services), Radiation Health	<b>Queensland Health</b>
● 1991 – 1995	Senior Physicist (Industry & Research), Radiation Health	<b>Queensland Health</b>
● 1987 – 1997	Technical Officer, Radioisotope Laboratory, School of Physics	<b>QUT</b>
● 1985 – 1987	Technical Officer, Division of Health & Medical Physics	<b>Queensland Health</b>
● 1983 – 1985	Laboratory Attendant, Department of Physics	<b>QIT</b>
● 1980 – 1983	Laboratory Technician / Information Technology Officer	<b>Connellan &amp; Son Iron and Iron and Steel Founders</b>