

LYDIA-MARIÉ JOUBERT

CURRICULUM VITAE

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BIOGRAPHY

Last Name	Joubert
First Name	Lydia-Marié
Residency	Legal Permanent Resident of the USA (Green Card), eligible for citizenship 2010
Languages	English and Afrikaans (fluent), German (read & write)
Contact Details	139 Fremont Ave Los Altos 94022 CA (650) 823 1293 lydiaj@stanford.edu
Current Position	Research Scientist and Electron Microscopy Specialist Cell Sciences Imaging Facility (CSIF) Beckman Center, Stanford University Medical School Stanford, CA 94305 (http://taltos.stanford.edu/)

EDUCATION

PhD (cum laude)	PhD dissertation: A study of secretion by the glandular hairs of <i>Pelargonium radens</i> (1986)
MPhil (cum laude)	Enhancing the quality of Biology Teaching (2002)
MSc (cum laude)	Ultrastructure and initiation factors of trichomes of <i>Pelargonium scabrum</i> (1983)
Hons BSc (cum laude)	Taxonomic value of trichomes of <i>Pelargonium</i> . (1980)
BSc (cum laude)	Majoring in Mathematics & Plant Sciences (1979)
Gr 12 (Valedictorian)	Outeniqua High School, George, South Africa (1976)

RESEARCH

Synchrotron based analytical imaging	Technology development to identify elements needed for successful colonization of <i>Helicobacter pylori</i> on human gastric mucosal cells. X-ray Fluorescence Microscopy at SLAC (SSRL) and Argonne(APS) are integrated with nanogold-immunolocalization and SEM visualization.
Electron Microscopy	Hydrogel visualization: Exploration of various approaches to visualize unprocessed hydrated specimens including protein scaffolds, biomaterials with stem cells, nanoparticles, DNA origami and bacterial biofilms with Variable Pressure SEM. WetSEM technology development: Explore Quantomix WetSEM technologies as alternative approach to visualization with Electron Microscopy.
Biofilms	Fundamental Focus: The emergence of multicellularity from single cells in biofilms, complexity from cooperation of individuals, and games theory as competitive evolutionary principle Image Analysis and Biofilm Modeling: Mathematical analysis of growth patterns in biofilms, applying fractal analysis. Modeling of biofilm dynamics under conditions of flow, applying FEMLAB and cellular automaton-based software Morphogenesis: Bacterial, yeast and complex biofilms, including protists, from natural and engineered systems. Application of GFP and FISH for microscopic evaluation using image analysis software (ImageJ).
Spectrophotometric Innovation	Developed a microtitre-plate flowcell and assaying technique to improve quantification of biofilm potential of microbes under conditions of flow.

Optical apparatus **Optical Large Area Photometer (OLAPH)** for Real-time monitoring of microbial biofilm development - see Saftic et al. 2005. German Patent 19947651.

CAREER

2006 - current **Electron Microscopist and Research Scientist at Cell Sciences Imaging Facility (CSIF)**, School of Medicine, Stanford University. Responsible for all SEM focused research projects, training and consultation, Microbiology related TEM projects, and management of an ongoing kidney stereology project involving TEM and LM analysis.

2004 - 2006 **Group leader and Consortium member for BioPAD** (www.biopad.org.za) Biotechnology Project, titled "The production and utilization of bio-energy sources for the reduction of sulphate in industrial and mining waste waters". Three laboratories from the University of Stellenbosch, and the CSIR (Council for Scientific and Industrial Research), were involved in designing an integrated process for biological treatment of acid mine drainage in which carbon and energy requirements of the sulphate removal process are derived by microbial degradation of plant biomass. Fungal pretreatment for improved digestibility of biowaste further degraded by natural microbial consortia were investigated, as well as recombinant yeasts applied to cellulose precursors.

2002 - 2004 **Claude Leon Research Fellow in Environmental Microbiology** with prof. Gideon Wolfaardt, Stellenbosch University, SA (currently Ryerson, Toronto). Application of lignocellulolytic consortia for bioenergy production, and wetlands for biodegradation of winery wastewater. Research involved ecological aspects of antimicrobial resistance in microbial biofilms. Emphasis was on developing assaying techniques and apparatus to determine microbial behaviour in planktonic and attached lifestyles. Explored various visualization techniques (FISH, GFP), image analysis and molecular techniques for community analyses (tRFLP). Responsibilities included all imaging support (light, fluorescence and electron microscopy) in the Microbiology Department.

2001 **Research Leader on SA Innovation Fund Project 42311** : "Production in fungi of enzymes used in Animal Feeds". Research involved application of native and recombinant fungal enzymes with lignocellulolytic activities as food additives in animal feeds, maximizing energy gain from forage cell walls. Responsibilities included lab set-up and management, and troubleshooting various colorimetric and spectrophotometric protocols for quantification of enzyme activity on natural carbon sources.

2001 **Coordinator for new Biology program** at the University of Stellenbosch

1987 **Lecturer in Microscopy Techniques and Plant Sciences**, University of Stellenbosch, SA

1986 - 1987 **Postdoctoral position in Plant Physiology group** of prof. Nathaniel Grobbelaar, University of Pretoria. Research involved EM investigation of symbiotic behaviour of *Cyanobacteria* in collaroid roots of *Encephalartos* spp.

1986 **Obtained PhD (University of Pretoria, South Africa) in Plant Sciences**. Supervisor prof. Jan Coetzee, Director Electron Microscope Unit. Focused on techniques of light microscopy, SEM and TEM, including Autoradiography, for localization of biochemical pathways of monoterpene biosynthesis. Histochemistry of specialized oil producing plant cells were characterized.

AWARDS & SCHOLARSHIPS

2009 **MSA (Microscopy Society of America) Professional Technologist Staff Award** for Visualization of Hydrogels with VP-SEM.

2003 **Honorary Stipendium** after completion of MPhil for highest postgraduate achievement in Life Sciences and Education, University of Stellenbosch, SA

2002 - 2004 **Prestigious Postdoctoral Fellowship** awarded by the Claude Harris Leon Foundation, for Biofilm research at University Stellenbosch, SA.
<http://www.leonfoundation.co.za/>

2001 – 2002 **Merit Award** for MPhil studies, University of Stellenbosch, SA.

1983 – 1986 **CSIR Merit Award and Scholarship** for Doctoral (PhD) studies.

1984 - 1985 **Croll Memorial Stipendium**, University Stellenbosch for Doctoral studies

1978-1980 **Shell Scholarship** for undergraduate BSc studies.

1980-1981	Exchange student (summer intership) at Weizmann Insitute, Rehovot, Israel, lab of prof Dan Atsom, Plant Genetics.
1978 – 1979	Highest Interfaculty Academic Performance for Second-year Student.
1979	Merit Award for Academic, Sport and Cultural performance.
1977-1980	Merit Award Department of Education (Valedictorian Scholar) Merit Scholarship Outeniqua High School, George, SA.
1977-1979	Top performer in Mathematics and Botany, University of Stellenbosch
1976	President's Award for Youth Leadership Finalist in National Mathematics Olympiad

COLLABORATION & CONSULTATION

Drs Barry Lai and Sefan Vogt, APS Argonne, and Dr. Sam Webb, SSRL, SLAC: Exploring microbeam X-ray Fluorescence as appropriate technology to determine micronutrients in *Helicobacter pylori*. Develop immunogold SEM techniques for localization of bacterial microcolonies.

Prof Manuel Amieva and PhD candidate Shumin Tan: Attachment features of *Helicobacter pylori*

Dr Jeffrey Margolis and Prof Denise Monack: *Francisella* biofilm colonization of chitin surfaces

Dr Jay Rajadas and Prof J Gurtner: Biomaterials and hydrogel scaffolds for dermal substitution

Prof. Alfred Spormann and PhD candidates Jana Mueller and Renee Saville, Stanford Biofilm Center: Visualization of stability and dynamics in *Cholera* and *Vibrio* biofilms

Dr Beinn Muir and Prof. Curt Frank: Dept Chemical Engineering, Stanford University: Visualization of Hydrogels applying various hydration and fixation techniques

Dr Ai Leen Koh and Prof R Sinclair: Dept Material Science and Engineering, Stanford University: Visualization of magnetic nanoparticles using SEM and Quantomix WetSEM techniques

Dr Kent McDonald, UC Berkeley: Development of High Pressure Freezing as fixation tool for TEM and SEM

Prof. Paul Weimer, University of Wisconsin, Madison, USA : Microscopical localization and functioning of attached rumen bacteria; collaborating on lignocellulose degradation via microbial enzymes.

Prof. Gideon Wolfaardt, Canadian Research Chairholder, Biology and Applied Chemistry, Ryerson and U Toronto, Canada : Role of EPS in biofilm formation, interaction in microbial communities through biofilm formation and EPS.

Pror Bernard Prior, Dept Microbiology, University Stellenbosch: Enzymatic degradation of lignocellulose

Dr Sanja Saftic, Berna Biotech, Switzerland : Evaluation of Optical Large Area Photometer for biofilm development.

PUBLICATIONS

Bester, E., Wolfaardt, G., **Joubert, L.**, Garny, K. and Saftic, S. 2005. Planktonic cell yield by a pseudomonad biofilm Appl Environ Microbiol 71: 7792-7798.

Du Plessis, K.R., Botha, A., **Joubert, L.**, Bester, R., Conradie, W.J. and Wolfaardt, G.M. 2005. Response of the microbial community to copper oxychloride in acidic sandy loam soil. Jnl Appl Microbiol 98:901-909.

Du Plessis, K.R., Wolfaardt, G., **Joubert, L-M.**, Gardner, M., Smith, V. and Botha, A. Microbiology and COD removal from distillery effluent in experimental constructed wetlands (submitted FEMS Microb Ecol).

Du Plessis, K.R., Wolfaardt, G. and **Joubert, L.M.** 2008. Microbial dynamics in constructed wetlands used for treating distillery wastewater Winelands 2008.

Greben, H., **Joubert, L-M.**, Tjatji, M., Whites, H. and Botha, A. 2007. Biological nitrate removal from synthetic wastewater using a fungal consortium in one stage bioreactors. Water SA 33: 285-290.

Joubert, L. 2010. Visualization of Hydrogels with Variable-Pressure Scanning Electron Microscopy (in preparation)

Joubert, L., M. Amieva, S.Tan, S.Webb and B.Lai. 2010. Correlation of X-ray Microbeam analysis with Scanning Elecron Microscopic observations in *Helicobacter pylori*. (in preparation)

Joubert, L., Botha, A. & Wolfaardt, G.M. 2003. Feeding relationships in yeast- ciliate biofilms. In *Biofilm Communities: Order from Chaos?*, pp. 409-414. McBain AJ, Allison DG, Brading MG, Rickard AH, Verran J, Walker JT (eds). Cardiff: BioLine.

Joubert, L-M., Wolfaardt, G., Botha, A. 2006. Microbial exopolymers link predator and prey in a model yeast biofilm system. *Microbial Ecology* 52(2): 187-197.

Joubert, L-M., Atmodjo, DY and Vose, JG. 2009. Evaluation of the safety and efficacy of the PEAK plasmablade for thoracic artery mobilization in a porcine model compared to standard electrosurgery and harmonic scalpel: an SEM study. Technical report for clinical trials.

Joubert, L-M., Wolfaardt, G.M., Du Plessis, K., Weimer, P.J.W. Variable Pressure Scanning Electron Microscopy: an integrative tool in biofilm studies (in preparation)

Lappas, P, McCartt, AD, Strand, C, Gates, SD, Davidson, DF, Jeffries, JB, Hanson, RK, **Joubert, LM**, Hokama, L, , Mortelmans, K. 2008. Dispersion, activation, and destruction of airborne biological threats: laboratory studies of the interaction of spore-laden aerosols with shock/blast waves. Chemical and Biological Defense Physical Science and Technology Conference. New Orleans Nov17-21.

Margolis, Jeffrey J., Sahar El-Etr, **Lydia-Marie Joubert**, Emily Moore, Richard Robison, Amy Raley, Alfred Spormann and Denise Monack. 2009. *Francisella tularensis subspecies novicida* chitinases and sec secretion system contribute to biofilm formation on chitin. *AEM* 76(2): 596-608.
<http://aem.asm.org/cgi/content/short/76/2/596>

Saftic, S., **Joubert, L-M.**, Bester, E. and Wolfaardt, G.M. 2004. A biofilm apparatus for the teaching lab. *ASM Focus on Microbiology Education* 11:12-14.

Ramachandran, N., **Joubert, L.**, Gundlapalli, S.B., Cordero Otero, R.R and Pretorius I.S. 2008. Effect of flocculation on the efficiency of raw-starch fermentation by *Saccharomyces cerevisiae* expressing *Lipomyces kononenkoae* LKA1 encoded α -amylase. *Annals Microbiology* 58(1): 99-108.

Weimer, P.J., Price, N., Kroukamp, O., **Joubert, L-M.**, Wolfaardt, G.M. and Van Zyl, W.H. 2006. Characterization of the extracellular glycocalyx of the anaerobic cellulolytic bacterium *Ruminococcus albus* 7. *Appl Environ Microbiol* 72(12):7559-7566.

Whites, H.E., **Joubert, L-M.**, Greben, H.A., Van Zyl W.H., Van Heerden C.J., Brown, N., Rose, S.H. and Botha, A. 2008. Environmental variables impacting on yeast populations within anaerobic lignocellulolytic microbial consortia (Submitted to *Journal of Applied Microbiology*)

CONFERENCES

Bester, E., **Joubert, L-M.** and Wolfaardt, G.M. 2003. Response of biofilm and planktonic bacterial populations to antimicrobial treatment. IWA Conference, Cape Town, South Africa.

Bester, E., **Joubert, L-M.** and Wolfaardt, G.M. 2004. The effect of growth rates on the antimicrobial susceptibility of biofilm and planktonic communities. SAMS Conference, Stellenbosch, South Africa.

Botha, A. Rhode, O., Samson, H., **Joubert, L-M.** and Wolfaardt, G.M. 2003. Interactions of *Cryptococcus laurentii* and *Cryptococcus podzolicus* in low nutrient conditions. ISSY Conference, Budapest, Hungary.

Botha, A., Botes, A., **Joubert, L.** & Boekhout, T. 2005. Natural habitats of *Cryptococcus neoformans*. Medical Mycology Conference, Hartenbosch, SA

Garny, K., **Joubert, L-M.** and Wolfaardt, G.M. 2003. Influence of nutrient source and biocide treatment on a mixed species biofilm community. IWA Conference, Cape Town, South Africa.

Garny, K., **Joubert, L-M.** and Wolfaardt, G.M. 2004. Biofilm antimicrobial susceptibility under different nutrient conditions. SAMS Conference, Stellenbosch, South Africa.

Greben H.A., Baloyi J., Botha A. and **Joubert, L-M.** 2005. Sustainable biological mine water treatment utilizing garden biowaste as the carbon and energy source. WISA 2006, Cape Town, SA

Joubert, L-M., Amieva, M., Tan, S., Webb, S., Lai, B. 2010. To Infinity and Beyond: SEM to X-ray Fluorescence Imaging to determine Micronutrients in *Helicobacter pylori*. Submitted for Microscopy and Microanalysis Meeting, Portland OR, Aug 2010.

Joubert, L-M. 2010. Scanning Electron Microscopy: Bridging the Gap from Stem Cells to Hydrogels. Submitted for Microscopy and Microanalysis Meeting, Portland OR, Aug 2010.

Joubert, L-M. 2009. Visualization of Hydrogels with Variable-Pressure SEM. Microscopy and Microanalysis Meeting. Richmond, VA, Aug 2009.

Joubert, L-M. 2003. The rabbits of Sherwood forest, the Coastline of Britain and the Beautiful Mind: Chaos, Fractals and Games theory in Biofilms. Annual Departmental Research Meeting.

Joubert, L-M. 2004. The secret is in the sauce : protistan behaviour in complex biofilms. Annual Departmental Research Meeting.

Joubert, L-M., Botha, A. and Wolfaardt, G.M. 2003. Associations in complex biofilms. IWA, Cape Town, SA

- Joubert, L-M.** 2002. Enhancing first-year biology teaching at the University of Stellenbosch. Dept Education Research Conference, Stellenbosch, SA.
- Joubert, L-M.** and Wolfaardt, G. 2006. Application of VP-SEM for studying biofilms. Podium presentation for session: Electron Microscopy as a 21st Century tool. Experimental Biology Conference, Moscone Centre, San Francisco, USA
- Joubert, L-M.**, Wolfaardt, G. and Botha, A. 2006. In situ fluorescent staining of yeast biofilms. Experimental Biology Conference, Moscone Centre, San Francisco, USA
- Joubert, L-M.** and Wolfaardt, G. 2006. Yeast biofilms: Real-time monitoring and visualization of mono- and dual species biofilms. Biofilms 2006, Leipzig, Germany.
- Joubert, L-M** and Wolfaardt, G.M. 2006. Integration of VP-SEM as experimental approach in studying biofilms. CSM conference, London, Ontario, Canada.
- Joubert, L-M**, Wolfaardt, G.M, Botha, A. and Saftic, S. 2006. Visualization and real-time monitoring of yeast biofilms. CSM Conference, London, Ontario, Canada
- Joubert, L-M**, Wolfaardt, G.M. and Du Plessis, K. 2006. Focusing on environmental biofilms with Variable Pressure SEM. AGU conference, Moscone Centre, San Francisco, Dec 2006
- Joubert, L-M** and Ward, D. 2007. Teaching statistic to freshman Microbiology students: How do we do Biology? ASM Conference, Toronto, Canada, June 2007.
- Joubert, L-M**, Wolfaardt, G.M. and Du Plessis, K. 2007. Wetlands for Wastewater: a visual approach to microbial dynamics. AGU conference, Moscone Centre, San Francisco, Dec 2007.
- Ramachandran, N., **Joubert, L-M.**, Pretorius, I.S. and Cordero Otero R.R. 2004. Effect of flocculation on raw starch fermentation by *Saccharomyces cerevisiae* whole cell biocatalysts expressing LKA1 α -amylase. SAMS, SA,
- Wolfaardt, G.M., **Joubert, L-M.**, Bester, E., Garny, K. and Botha, A. 2004. Interactions and differentiation in complex biofilm communities. SAMS Conference, Stellenbosch, South Africa (opening lecture by GMW).
- Wolfaardt, G.M., Gardner, M., Kroukamp, O., Du Plessis, K., Botha, A., **Joubert, L.** 2007. Plasticity: microbial adaptation that surpasses boundaries of the biofilm model. ASM Conference, Toronto Canada, June 2007.
- Weimer, P.J., Kroukamp, O., **Joubert, L-M.**, Wolfaardt, G.M. and Van Zyl, W.H. 2004. Characterization of the Glycocalyx of Cellulose-Grown *Ruminococcus albus*. ASM Conference, New Orleans, USA.
- Zaitseva, T., G. Martin, L. Teracio, N. Tyhovych, P.Loomer, T.Desai, L.Peng, **L.Joubert**, D.McMurtry, , M. Paukshto. 2009. Behavior of cells on tissue-like collagen matrices. American Society of Cell Biology Conference, San Diego.

ACKNOWLEDGED

- Ahmadov, R, Vanorio, T, Mavko, G. 2008. Confocal Laser Scanning and Atomic Force microscopy in estimation of elastic properties of organic-rich rock. AGU Dec 2008 San Francisco.
- Ahmadov, R. Vanorio, T, Mavko, G. 2009 Confocal Laser Scanning and Atomic Force microscopy in estimation of elastic properties of organic-rich Bahzenov formation The Leading Edge Jan.09: 260-264
- Masaki M, et al 2008. Influence of interfacial layer beten nanoparticles and polymeric matrix on viscoelastic properties of Hydrogel nanocomposites. Macromolecules 2008
- Diensthuber, M., Oshima, K. & Heller, S. 2009. Stem/Progenitor Cells Derived from the cochlear sensory epithelium give rise to sphere with distinct morphologies and features. JARO 10: 173-190. (PDF)
- Tan, Shumin, L.S. Tompkins & M.R.Amieva. 2009. Helicobacter pylori usurps cell polarity to turn the cell surface into a replicative niche. PLOS Pathogenesis 5(5): 1-13

INVITED SPEAKER

- Joubert, L-M.**, Wolfaardt, G.M.. and Botha, A. 2004. Yeast-ciliate interactions in biofilms. SAMS Conference, Stellenbosch, South Africa.
- Joubert, L-M.** 2004. Seeing is believing : Yeast interactions in complex biofilms : a visual approach. WineBiotech Seminar Series, University of Stellenbosch, Stellenbosch.

COVER ILLUSTRATION

Cover illustration for AEM Jan10, 2010, see Margolis, Jeffrey, Sahar El-Etr, **Lydia-Marie Joubert**, Emily Moore, Richard Robison, Amy raley, Alfred Spormann and Denise Monack. 2009. *Francisella tularensis subspecies novicida* chitinases and sec secretion system contribute contribute to biofilm formation on chitin. AEM 76(2): 596-608

Winning entry for Cover illustration of Book : [Biofilm Communities: Order from Chaos?](#). McBain AJ, Allison DG, Brading MG, Rickard AH, Verran J, Walker JT (eds). Cardiff: BioLine, (<http://www.biofilmclub.co.uk/>)

IMAGING COMPETITION

Olympus Bioscapes: Awarded honorable recognition for entry in 2005 Olympus BioScapes international scientific digital imaging competition, San Francisco, Dec 2005

PUBLICATIONS PRE 2002

Oosthuizen, L. 1983. The taxonomic value of trichomes in *Pelargonium L'Herit.* (Geraniaceae). *Jl.S.Afr.Bot.* 49 : 221-242.

Oosthuizen, L. & Coetzee, J. 1983. Morphogenesis of trichomes of *Pelargonium scabrum*. *S. Afr. J. Bot.* 2: 305-310.

Oosthuizen, L. & Coetzee, J. 1984. Trichome initiation during leaf growth in *Pelargonium scabrum*. *S. Afr. J. Bot.* 3: 50-54.

Joubert, L. & Coetzee, J. 1986. Essential oil secretion in *Pelargonium radens*. *Proc. Electron Microsc. Soc. South Afr.* 16: 109-110.

Joubert, L. & Coetzee, J. 1987. Ultrastructure of the glandular hairs of *Pelargonium radens*. *Proc. Electron Microsc. Soc. South Afr.* 17: 117-118.

Joubert, L., Grobbelaar, N. & Coetzee, J. 1989. *In situ* studies of the ultrastructure of the Cyanobacteria in the coralloid roots of *Encephalartos arenius*, *E. transvenosus*, and *E. woodii*. *Phycologia* 28 (2) : 197-205.

SEMINARS AND CONFERENCES PRE 2002

SAAB conference (1982): Trichomes in *Pelargonium*.

SAAB conference (1983): Cell wall composition of trichomes in *Pelargonium scabrum*.

SAAB conference (1984): Ultrastructure of glandular hairs in *Pelargonium scabrum*.

EMSSA conference (1986): Essential oil secretion in *Pelargonium radens*.

EMSSA conference (1987): Ultrastructure of the glandular hairs of *Pelargonium radens*

Departmental Colloquium (1980) : Taxonomic value of trichomes in *Pelargonium*.

Departmental Colloquium (1981) : My summer internship at Weizmann Institute, Israel (as graduate student in lab of prof. Dan Atsmon, Plant Genetics)

Departmental Colloquium (1981) : Initiation factors of trichomes in *Pelargonium scabrum*.

Departmental Colloquium (1982) : Morphogenesis of glandular hairs of *Pelargonium scabrum*: an EM study

Departmental Colloquium (1984) : Report on research period at Indiana University, USA, studying towards a PhD in the lab of prof. Paul Mahlberg, Plant Sciences.

TEACHING

Teached part of 'Advanced Imaging' Graduate course (2007-09) (prof Stephen Smith, Stanford University), lecturing on Principles and Applications of Scanning Electron Microscopy.

Trained and advised 60 graduate students and private users in Electron Microscopy at Stanford University Medical School. (2006 to current). Manage SEM core.

Supervised two MSc students, and co-supervised one PhD student in Microbial Ecology, with peer-reviewed publications following from all research projects (2002-2005).

Responsible for teaching courses in Advanced Microtechnique and Microscopy for Honors Botany and Microbiology class at University Stellenbosch, SA, as well as general undergraduate biology and specialized topics of Microbial Ecology to 3rd year (Junior) students.

Managed the Microscopy and Visualization Facility, University of Stellenbosch, SA (2001 – 2004)

Lecturer in Plant Sciences and Electron Microscopy, Botany Dept, University of Stellenbosch, SA (1983-1984)

ASSOCIATIONS

Microscopy Society of America (MSA)
American Society for Microbiology (ASM)
American Geophysical Union (AGU)
Biofilm Club (previously BBC : British Biofilm Club)
Microscopical Society of Canada (MSC)

PERSONAL

Married to Pierre Joubert (MEng, Hons Journalism, MBA), CEO of Brutesoft, Sunnyvale, CA, USA
Three sons: Niels (23) PhD candidate Stanford (from 2009); EECS, UC Berkeley(2009); Dieter (20) UC San Diego;
Pierre-Henri (16) Los Altos High School
Start company 'TIDE' for Digital Video productions applying Adobe Premiere and Pinnacle System.
Hobbies: Photography using Nikon D200 and Leica R4 SLR cameras, and Panasonic video cameras
Music: closely involved in activities of El Camino and Stellenbosch Youth Orchestras. Pianist in leisure time.
Activities: hiking, camping, and 4x4 trailing. Sports include running, cycling, skiing, hockey and tennis.

REFERENCES

Prof. Stephen Smith

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Prof. Gideon Wolfaardt

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