

1. Full name

Ilkka Sakari Korpela

2. Date and place of birth

May 13, 1968. Vehkalahti, Finland

3. Marital status

Married to Elina Inkeri Puonti, b. 1975; children: Arttu b. 2001, Perttu b. 2001, Viljo b. 2004

4. Current assignments

Academy Research Fellow (9/2011–8/2016). U of Helsinki (UH), Department of Forest Sciences (on leave of absence from lecturer position)

Adjunct Professor (4/2008–). U of Eastern Finland (UEF), Faculty of Sciences and Forestry

5. Earlier assignments

2009–2011 Part-time Project Researcher, UEF.
1/2011– University lecturer (Forest information systems), Dept of Forest Sciences, UH
2004–2010 Post-doc researcher, Department of Forest (Sciences) Res. Management, UH
2001–2004 Project Researcher, Department of Forest Resources Management, UH
1995–2001 Teaching Assistant in Forest Inventory and Management Planning, Department of Forest Resources Management, UH
1993–1995 Amanuensis, Hyytiälä Forest Station, Faculty of Agriculture and Forestry, UH
1991–1992 Research assistant, Dept. of Forest Mensuration and Management, UH
1990–1991 Mapper, Finnmap Oy.
1989–1990 Research assistant, Forest Growth and Yield, Finnish Forest Research Institute

5B. Short term teaching assignments (Responsible teacher)

2012 UEF, Advanced Remote Sensing course (Dr. Lauri Korhonen)
2012 UH, Object-oriented Programming, MARV216.
2010 Evo Forest School, Photogrammetry and LiDAR –course for forest professionals (Lecturer Risto Viitala)
2010 UEF, Advanced Remote Sensing course (Lecturer Petteri Packalén)
2009-2010 UH, Skogsbruk runt om Östersjön -kurs (Prof. Bo Dahlin)
2009 UEF, NOVA PhD-course in 3D remote sensing of forests (Prof. Matti Maltamo)
2008 UH, Cross-Border-University course in forestry (Prof. Bo Dahlin)
2007-2011 UH, MARV1 and MARV4 courses in Forest mensuration and inventory (Prof. Markus Holopainen, Prof. Pauline Stenberg)
2006 UH, Field course in tree ecophysiology (Prof. Pertti Hari)
2006 UH, PhD course MINV12 in 3D Remote Sensing of Forests (Principal teacher with Prof. Juha Hyyppä, Prof. Markku Poutanen)
2000–03, 05 UH, GIS12 and Y196B courses in Advanced Remote Sensing and GIS (Lecturer Stuart Fish, Markus Holopainen, Prof. Timo Tokola)

- 1997, 99, 01 HUT, course Maa20.335* in Forest evaluation
(Principal teacher with Simo Hannelius)
- 1996-2000 UH, Courses MARV3 and MARV4 in Forest management planning
(Prof. Simo Poso)
- 1991-95 UH, Field courses in Silviculture (Prof. Pentti Räsänen), Peatland Ecology and Forestry (Prof. Juhani Päivänen), Forest Pathology and Entomology (Prof. Matti Nuorteva, Lalli Laine, Kari Heliövaara), and Forest Mensuration (Prof. Jouko Laasasenaho). 10 weeks each year.
- 1991-2005 Shorter 1-5 day field courses/visits. Forest Mensuration, Botany, Site Type Classification and Forest Management Planning. UPM-Kymmene, HUT, UH.

6. Education

- 2004 Dr. Sc with distinction. UH, Faculty of Agriculture and Forestry
Individual tree measurements by means of digital aerial photogrammetry
- 2002 Lic. Sc. UH, Faculty of Agriculture and Forestry
3-D Matching of tree tops using digitized panchromatic aerial photographs
- 1993 M.Sc. UH, Faculty of Agriculture and Forestry
Forest growth study in the vicinity of a petrochemical complex
- 1987- Undergraduate in electrical engineering, HUT
Studies in mathematics, computer science, and photogrammetry

7. Distinctions

- 2008 Hansa LuftBild Award
For practically focused research
German Society of Photogrammetry and Remote Sensing, 1500 €.
- 2004 Yrjö Ilvessalo Award
Best PhD-thesis in forest sciences in 1999-2004
Finnish Society of Forest Science, 4000 €
- 1995 Medal of Honor
For teaching merits
Forestry students' association at UH
- 1993 A. G. Blomqvist Award
For the M.Sc. thesis
UH, Faculty of Agriculture and Forestry, 4000 FIM.

8. Funding and projects

Since 2001, I have acquired financing for my research activities and since 2008 the funding has enabled engaging a research assistant. Below are listed all major projects.

“Free and timestamped photons - Radiometrically quantitative remote sensing”. 2011–2016. Academy of Finland Research Fellow - grant. ~600.000€.

“Social Forest Inventory”. With VTT, StoraEnso, MosaicMill, and SimoSol. 2010–2011. TEKES 50.000€ (400.000€ total).

“Solving the tree species identification with airborne laser scanning and invariant directional reflectance signatures in radiometrically calibrated images.” 2009–2011. UH 120.000€

“ADS40 in Finnish Forests”. With UEF, FGI, and Leica Geosystems. 20.000€. Leading a consortium testing the radiometrically calibrated pushbroom sensor in Finland.

“Bottleneck and black hole in forest remote sensing: reliable estimation of tree species and seedling stand properties in combined optical LiDAR and multispectral image data”. 2008–2010. Suomen Luonnonvarojen Tutkimussäätiö -foundation 120.000€

“3D maasto – Automatic reconstruction of built environment for visualization using aerial and satellite images”. With VTT, HUT, and business partners. 2006. TEKES 16.000 €

“Automated mapping and measurement of trees – 3D image interpretation in surveillance UAV video imagery”. 2005–2006. MATINE 114.000€. With Professor Timo Tokola

“3D analysis of aerial images and laser data for tree measurements“. 2005–2008. Academy of Finland 150.000 €. With Professor Timo Tokola and Arbonaut ltd

“3D positioning of trees in digital aerial images”. 2002–2003. Ministry of Agriculture and Forestry 57.000 €. With Professor Timo Tokola

“Forest growth study in the vicinity of Sköldvik oil refinery”. 1991–1992. City of Porvoo, Porvoo municipality, Sipoo municipality and Neste Oy 250.000 FIM. With Professor Simo Poso

Other direct and indirect (e.g. student labor) funding 1996–2009, a total of ~180,000 € from forest companies, Metsähallitus, universities, foundations, remote sensing companies, and research institutes I have invested in a remote sensing test site in Hyytiälä:

- *Aerial image acquisitions*: 1997, 2002, 04, 06, 07, 08, 09, 10 + time series 1946–
- *Laser scanning campaigns*: 2004, 06, 07, 08, 10, 11a and 11b.
- *Field measurement campaigns*: 1996, 1997, 2000, 02, 03, 2005–2011
- *Time-travelling in Hyytiälä forests 1946–2004*, WWW-site. 2006.

9. Other scientific activity

Memberships

Finnish Society of Forest Science, member 2004–
Taksaattoriklubi (Association of forest inventory experts), member, 1991–
Finnish Forest Research Institute, External researcher, 2006–2009

Administration

UH, Department Board, Member, 1996–1998, 2007–2009, 2010–2012
UH, Faculty of Agriculture and Forestry, Board, Member, 2007–2009, 2010–2012
UH, Faculty Strategic Planning Group, Vice Member 2007–2009
UH, Hyytiälä Forest Station 100-yr Jubilee, Organizing Committee, Member,
2008–2010

Peer reviewer and expert activity 2005–

Forest Ecology and Management × 2
Remote Sensing of Environment × 6
ISPRS Journal of Photogrammetry and Remote Sensing × 4
IEEE Transactions on Geoscience and Remote Sensing × 2
International Journal of Remote Sensing × 11
Canadian Journal of Remote Sensing × 3
European Journal of Forest Research × 1
Scandinavian Journal of Forest Research × 4
Metsätalouden aikakauskirja × 1
Photogrammetric Journal of Finland × 3
Remote Sensing × 1
Forestry × 1
Photogrammetric Record × 1
Area × 1
Biomass and bioenergy × 1

“MEKAME -2004” Evaluation of the candidate remote sensing methods for forest management planning in Finland. Funded by TEKES and Ministry of Agriculture and Forestry, Invited Specialist.

ISPRS Laserscanning 2007 Workshop, Member of the Scientific Board

Research program (12 MSEK) in "Digital imaging technology and laser scanning for environmental monitoring and inventory" by the Swedish Environmental Protection Agency, Evaluator in an international group of scientists, 10/2008.

UH – 3-year Post-Doc Grants. Evaluator, 8/2009

Project Proposal Evaluator for the National Science Foundation, 10/2009

Supervision of academic thesis

I have officially participated in the supervision of 5 completed MSc theses and 2 PhD theses. I collaborate(d) with forestry PhD-students Mikko Vastaranta (UH), Sanna Härkönen (UEF), Anne Seppänen (UEF), Lauri Korhonen (UEF), Hans-Ole Ørka (UMB, Norway), Mathematician Ville Heikkinen (UEF/Computer Sc), and Photogrammetrist Lauri Markelin at the Finnish Geodetic Institute.

2003–2004	Antti Mäkinen, MSc, UH (Antti became PhD in Feb 2010)
2005–2006	Tuukka Tuomola, MSc, UH
2004–2006	Perttu Anttila, PhD, U Joensuu
2008–2010	Liisi Koivisto, MSc, UH
2008–	Eduardo La Torre, MSc, UH
2008–2010	Jari Vauhkonen, PhD, UEF
2009–2011	Aarne Hovi, MSc, UH
2012–	Aarne Hovi, PhD, UH
2010	Felix Rohrbach, MSc, ETH Zurich, Switzerland

Publications

Since 2004, I have been an author in

21	International peer-reviewed scientific journal articles (first author in 14)
4	International peer-reviewed conference articles (2)
2	Finnish peer-reviewed scientific journal articles (1)
3	Monographs
10	Articles in conferences, lacking review (6)

The peer-reviewed articles list 33 co-authors of which 21 have been MSc- or PhD-students at the time of writing.

Since 2005 I have annually participated in 1(–2) international conferences giving poster or oral presentation. I would travel more if the research I do would save lives.

In Finland, I have once a year contributed to 1–3 scientific meetings or in conventions for practical professionals, usually in forestry or natural resource management to present results or to give an invited talk.

Since 1991, I have written course instructions, labs, lecture slides, computer programs, demos, and web pages for different courses at UH, UEF, and HUT. The courses have been about remote sensing, photogrammetry, forest inventory, evaluation, management planning, silviculture, mire ecology and botany and have ranged from introductory to PhD courses. The material is in English, Finnish, and Swedish and it has been accessible through the internet since 1997. (<http://www.helsinki.fi/~korpela>)