

Curriculum vitae

I. Personal data

Name: Leonhard Johannes Blesius
San Francisco State University
Department of Geography & Environment
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Website: <http://online.sfsu.edu/lblesius/>

II. Education

1993 - 2002 : University of Iowa, Iowa City PhD in Geoscience
1980 - 1987 : Philipps University Marburg, Germany Diplom (~ MSc) in Geography

III. Summary of relevant work experience

July 2013 – current:

Employer: San Francisco State University, Department of Geography
Title: Associate Professor

July 2007 – June 2013:

Employer: San Francisco State University, Department of Geography
Title: Assistant Professor

June 2002 – July 2007:

Employer: University of Iowa, IIHR, Hydrosience & Engineering
Title: Post-doctoral researcher

August 2003 – December 2003:

Employer: University of Iowa, Department of Geoscience
Title: Visiting Assistant Professor in Geoscience

August 2002 – December 2002:

Employer: University of Iowa, Department of Geography
Title: Adjunct Visiting Assistant Professor in Geography

Aug. 1993 – May 2002:

Employer: University of Iowa
Title: Research & teaching assistant in Geography and Geoscience

November 1987 – June 1993:

Employer: International Institute for Aerospace Survey and Earth Sciences (ITC) in Enschede, The Netherlands.

Title: Praktijk docent

October 1984 – May 1987:

Employer: Philipps Universität Marburg
Title: Research assistant

IV. Summary of professional skills and/or expertise

International consulting:

P.R. China: Institute of Remote Sensing Application at Chinese Academy of Sciences in Beijing: Installation of hard- and software for remote sensing; training of operators, 15. May – 27. May 1990

Nigeria: Geography Department at Ibadan University: Installation of hard- and software for remote sensing; training of students and faculty, 14. July – 13. Aug. 1996

Selected consulting and applied research:

GIS and remote sensing analysis for geomorphic and hydrologic processes at several locations on US West Coast locations

- Evaluation of flood causes due to landscape change in Santa Barbara, CA
- Evaluation of flood causes in Mission Fields, CA
 - Development of a rapid method to determine Manning's n based on BW air photos
 - Historical analysis of river changes based on air photos
- Evaluation of flood damage in Simi Valley, CA
- Evaluation of flood causes in Canoga Park, CA
- Evaluation of Lowden Fire landscape change, CA
- Evaluation of landslide hazard in Malibu, CA
- Evaluation of debris flows in Pena Canyon, CA
 - Influence of culvert design to debris flow patterns
- Assessment of landslide hazard in Las Flores Canyon, CA
 - Historical analysis of crack maps to evaluate infiltration over time
- Assessment of temporal irrigation patterns for Edwards Aquifer, TX
 - Satellite remote sensing to determine historical water use
- Evaluation of dust storm causes in Fernley, NV
 - Finding and validating dust sources that caused car accident

V. Scholarships and awards

Jörg-Keller Stiftung (Stifterverband für die Deutsche Wissenschaft): 1993-1997

VI. Publications

1. Peer-reviewed articles

Ballanti, L., L. Blesius, E. Hines, and B. Kruse (2016): Tree Species Classification Using Hyperspectral Imagery: A Comparison of Two Classifiers. *Remote Sensing*, Vol.8, No. 6, 445; [doi:10.3390/rs8060445](https://doi.org/10.3390/rs8060445)

Davis, J. and L. Blesius (2015): A Hybrid Physical and Maximum-Entropy Landslide Susceptibility Model. In: *Entropy*, Vol. 17, No. 6, pp. 4271-4292.
doi: [10.3390/e17064271](https://doi.org/10.3390/e17064271)

Sherba, J., L. Blesius, and J. Davis (2014): Object-Based Classification of Abandoned Logging Roads under Heavy Canopy Using LiDAR. *Remote Sensing*, Vol. 6, No.5.
doi:[10.3390/rs6054043](https://doi.org/10.3390/rs6054043)

Parker, O. and L. Blesius (2012): Object-based segmentation of multi-temporal Quickbird imagery for landslide detection. In: Menezes, G.B., H.K.Moo-Young, C. Khachikian and T.C. de Brito Galvao (eds.): *Proceeding of the XII International Symposium on Environmental Geotechnology, Energy and Global Sustainable Development. Vol. I Environmental Geotechnology*. Los Angeles, pp. 291-299.

Powell, C., L. Blesius, J. Davis, and F. Schuetzenmeister (2011): Using MODIS snow cover and precipitation data to model water runoff for the Mokelumne River Basin in the

Sierra Nevada, California (2000–2009). In: *Global and Planetary Change*, Vol. 77, No.1-2, pp. 77-84.

Blesius, L. and F. Weirich (2010): Shallow landslide susceptibility mapping using stereo air photos and thematic maps. In: *Cartography and Geographic Information Science*, Vol. 37, No. 2, pp. 105-118.

Weirich, F. and **L. Blesius** (2007): Comparison of satellite and air photo based landslide susceptibility maps. In: *Geomorphology*, Vol. 87, No.4, pp. 352-364.

Blesius, L. and F. Weirich (2005): The use of the Minnaert correction for land-cover classification in mountainous terrain. In: *International Journal of Remote Sensing*, Vol. 26, No. 17, pp. 3831-3851.

Edwards, G.J., C.H. Blazques, K.O. Cuillinn, J.C. McKinnon, C.O. Youtsey, and **L. Blesius** (1984): Comparison of aerial color infrared video and 70mm color infrared photography of citrus trees. In: *Proc. Fla. State Hort. Soc.* 97, pp. 14-16.

2. Conference proceedings

Blesius, L. and F. Weirich (2009): The use of high-resolution satellite imagery for deriving geotechnical parameters applied to landslide susceptibility. In: Heipke, C., K. Jacobsen, S. Müller, and U. Sörgel (eds.): *International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences Vol. XXXVIII-1-4-7/W5 International Society for Photogrammetry and Remote Sensing Hannover Workshop 2009 on High-resolution Earth Imaging for Geospatial Information*. Hannover, Germany.

Blesius, L. (1992): Recent developments in remote sensing education: RISC-ing a view through the Windows. *Proceedings of the 6th Australasian Remote Sensing Conference*, Wellington.

Leason, A.N., R.A. Vaughan, and **L. Blesius** (1992): Software to manipulate DTMs within the Alexander package. In: Cracknell, A.P. and R.A. Vaughan (eds.): *Remote Sensing: From Research to Operation. Proc. 18th Annual Conference of the Remote Sensing Society*, Dundee.

Mulder, N.J., H.R. Kostwinder, and **L.J. Blesius** (1990): A low-cost image processing system on a 32-bit RISC microcomputer. In: *Proc. of the ISPRS Com. II Symposium on Progress in Data Processing and Analysis*, pp. 63-70, Dresden.

Blesius, L.J., H.R. Kostwinder, and N.J. Mulder (1989): Alexander - An educational software package for teaching remote sensing and geo information systems techniques based on a network of Personal Computers. In: *Contents of the 15th Annual Conference of the Remote Sensing Society*, pp. 55-61, Bristol.

Blesius, L., S.A. Hempenius, and N.J. Mulder (1988): Recent experiences in low-cost image processing at ITC. In: *Proc. Of the 3rd. Hungarian Conference on Satellite Remote Sensing*. Budapest.

Blesius, L. (1987): A microcomputer based digital image analysis system. In: *Proc. of the Workshop on Image Processing on small Computers for Education*, pp. 21-29, Nottingham.

3. Book chapters, technical reports, field trip guides, newsletters

Burgett, D., M. Benedetti, and **L. Blesius** (2012): Measuring river geometry for automatic discharge estimation using geographic object-based image analysis (GEOBIA). *Geospatial Review*, Vol. 10, Spring 2012

Davis J. and **L. Blesius** (2011): Coastal erosion. *Field trip guide for the Association of Pacific Coast Geographers, San Francisco.*

Beck, R., P.J. van den Boogaard, N.J. Mulder, H.R. Kostwinder, and **L.J. Blesius** (1992): Produktontwikkeling van een “user-interface” voor GIS en remote sensing voor opleidingsdoeleinden. *BCRS rapport no. 90-32*, Den Haag.

Ehlers, M. and **L. Blesius** (1991): Progress in Image Processing Workstations for Remote Sensing. In: Ebner, H., D. Fritsch, and C. Heipke (eds.): *Digital Photogrammetric Systems*, pp. 291-294, Karlsruhe.

Blesius, L. and H.R. Kostwinder (1991): Alexander. User Guide Version 1.0. BCRS Report no. 90-38, Den Haag.

4. Abstracts, Presentations, Posters

Lorenz, A., **L. Blesius**, & J Davis (2017): Object based Image Analysis of Meadow Hydrogeomorphic Types Using LiDAR and Multispectral Imagery. *Abstracts of the Association of American Geographers 113th Annual Meeting*, Boston, MA

Lorenz, A., **L. Blesius**, & J Davis (2016): Detecting Montane Meadows in the Tahoe National Forest Using LiDAR and ASTER Imagery. *American Geophysical Union, Fall Meet.*

Mengisteab, B., **L. Blesius**, and L. Hennessy (2014): Application of Object Based Image Analysis (OBIA) in detecting and quantifying forest loss caused by artisanal gold mining activities in Upper Mazaruni River Basin, Guyana. *American Geophysical Union, Fall Meet.*

Mengisteab, B., **L. Blesius**, and L. Hennessy (2014): Artisanal Gold Mining activities and forest loss in Upper Mazaruni Territory, Guyana between 1986 and 2013. *Abstracts of the Association of American Geographers 110th Annual Meeting*, Tampa, FL

Weirich, F. and **L. Blesius** (2013): The Role of Cracks in Accelerating the Rate of Landslide Movement. *American Geophysical Union, Fall Meet.*

Christian, P., Davis, J.D., and **L. Blesius** (2013): Application of a Very-Low-Cost Unmanned Aerial Vehicle (UAV) and Consumer Grade Camera for the Collection of Research Grade Data: Preliminary Findings. *American Geophysical Union, Fall Meet.*

Blesius, L. and F. Weirich (2011): Deriving geotechnical parameters from high-resolution satellite imagery for landslide susceptibility mapping. In: *Abstracts of the Association of American Geographers 107th Annual Meeting*, Seattle, WA.

Burgett, D.A., **L. Blesius**, and J.D. Davis (2010): An Object-Based Method for Estimation of River Discharge from Remotely-Sensed Imagery. In: *American Geophysical Union, Fall Meeting 2010, abstract H43G-1347.*

Horn, J.F., J. Davis, **L. Blesius**, M. Kramer (2009): Sediment Dynamics of an Invasive Species: Stream Channel Response to Tamarisk Infestation. In: *Abstracts of the Association of American Geographers 105th Annual Meeting*, Las Vegas, NV.

Brant, G., A.J. Oliphant and **L. Blesius** (2008): Impacts of coastal advection fog on the surface radiation regime. *EOS Trans. American Geophysical Union, Fall Meet. Suppl., Abstract A51H-0206*

Blesius, L. and F. Weirich (2008): Remote sensing based geotechnical landslide susceptibility mapping and the influence of root cohesion: an example from the Santa Monica Mountains. In: *Abstracts of the Association of American Geographers 104th Annual Meeting*, Boston, MA.

Blesius, L. and F. Weirich (2006): Estimation of geotechnical slope stability parameters for landslide susceptibility mapping using satellite imagery. In: *Abstracts of the Association of American Geographers 102th Annual Meeting*, Chicago, IL.

Carpenter, S.J., J.M. Erickson, J.W. Hoganson, **L. Blesius**, and F. Weirich (2005): From ugly stepsister to ugly duckling – $\delta^{13}\text{C}$ values of freshwater mollusk shells – A swan's story. In: *Geological Society of America Abstracts with program*, Vol. 37, No. 5, p. 86.

Blesius, L. and F. Weirich (2004): Comparison of satellite and air-photo derived landslide susceptibility maps. In: *Abstracts of the Association of American Geographers 100th Annual Meeting*, Philadelphia, PA.

Blesius, L. and F. Weirich (2002): Landslide hazard mapping using stereo SPOT satellite images and thematic maps. In: *Abstracts of the Association of American Geographers 98th Annual Meeting*, pp. 50-51, Los Angeles, CA.

Blesius, L., M. Sayeeduzzaman, and F. Weirich (2000): Slope characterization by spatial autocorrelation. In: *Abstracts of the Association of American Geographers 96th Annual Meeting*, pp. 64-65, Pittsburgh, PA.

Weirich, F. and **L. Blesius** (2000): A new look at Manning's n. In: *Abstracts of the Association of American Geographers 96th Annual Meeting*, p. 764, Pittsburgh, PA.

Blesius, L. and F. Weirich (1996): Shallow landslide prediction utilizing GIS & dynamic soil moisture modeling. In: *Abstracts of the Association of American Geographers 92nd Annual Meeting*, p. 26, Charlotte, NC.

Blesius, L. and F. Weirich (1996): Prediction of shallow landslides using GIS, geotechnical slope stability, and soil moisture models. In: *Abstracts with Programs: 1996 Annual Meeting of the Geological Society of America*, Denver, CO.

Blesius, L., F. Weirich, B. Aker, and M. Lata (1995): Integrated thermal-IR and ground-based measurements to assess fire and geomorphic dynamics. In: *Abstracts of the Association of American Geographers 91st Annual Meeting*, p. 25, Chicago, IL.

Weirich, F., **L. Blesius**, and B. Aker (1995): Integrated Space Shuttle and ground instrumentation of pyrogeomorphic/biogeochemical processes. In: *Abstracts of the Association of American Geographers 91st Annual Meeting*, p. 321, Chicago, IL.

5. Presentations

The use of high-resolution satellite imagery for deriving geotechnical parameters applied to landslide susceptibility mapping. Department of Geography, San Francisco State University. 2009

The use of medium-resolution satellite imagery for the derivation of geotechnical slope stability parameters. Department of Geoscience, San Francisco State University. 2008
Mapping sense from above – hydrologic and geomorphic applications of satellite imagery and aerial photography. IIHR – Hydroscience & Engineering, The University of Iowa, IA. 2004

Remote sensing applications for geotechnical investigations. 22nd Annual ASCE Geotechnical Conference, Williamsburg, IA. 1998

Recent developments in remote sensing education: RISC-ing a view through the Windows. 6th Australasian Remote Sensing Conference, Wellington, New Zealand. 1992

Alexander - An educational software package for teaching remote sensing and geo information systems techniques based on a network of Personal Computers. 15th Annual Conference of the Remote Sensing Society, Bristol, United Kingdom. 1989

A microcomputer based digital image analysis system. Workshop on Image Processing on small Computers for Education, Nottingham, United Kingdom. 1987

VII. Professional and civic activities

Professional Membership:

1. Association of American Geographers (AAG)
 - Remote Sensing Specialty Group
 - Geomorphology Specialty Group
 - Hazards Specialty Group
2. American Society for Photogrammetry and Remote Sensing (ASPRS)
3. American Geophysical Union (AGU)

I. Classes taught

VIII. At SFSU

GEOG 101: Our physical environment
GEOG 312: Geography of Landforms
GEOG 317: Geography of soils
GEOG 610: Remote sensing of environment I
GEOG 611(UG) / GEOG 711(G): Remote sensing of environment II
GEOG 810: Seminar Geomorphology
GEOG 815: Seminar Techniques

2. At other institutions

GIS for Environmental Studies: Introduction (University of Iowa)
Fluvial Geomorphology (University of Iowa)
Digital Image Processing for Environmental Science (University of Iowa)
Geocomputing (University of Iowa)

IX. Student thesis advising

PhD committee member (external)

Vipin Markose (Mangalore University, India)

MS and MA Thesis Advisor (23 completed, chaired)

Cynthia Powell, Aariel Rowan, Anna Davenport, Mary Israel, Dara O’Beirne, Paris Good-Swan, **Jose Camarena**, Carlos Jennings, **Bill Goedecke**, **Owen Parker**, Jason Sherba, Eli Waggoner, **Sam Oakley**, Pam van der Leeden, Peter Christian, Garret Bradford, Genevieve Munsey, **Biniam Mengisteab**, Siobhan Lavender, Joe Issel, **Haley Barnes**, **Laurel Ballanti**, Rubaya Pervin

X. Service to University and Community

1. Campus

Department:

Adviser BA Physical Geography
Adviser BS Environmental Science

Adviser MSc in GIScience
Chair Lecturer Review Committee (2016-current)
Member Techniques Committee (2007-current)
Chair Curriculum Committee (2016-current)
Member Forum Committee (expired)
Member Faculty-Students Committee (expired)
Faculty adviser for Geography student club (expired)

College:

Judge at CoSE student poster presentations
BSS Methodology and Techniques (expired)

SFSU:

UAV advisory board (2015-current)
Institute of Geographical Science (IGIS) Advisory Board (2010-current)
Faculty Hearing Panel (expired)

CSU:

Remote Sensing Group (2009-current)

2. Community

Member of John Muir National Park erosion investigation expert advisory panel
Member of SMART (State Mitigation Assessment Review Team) for CalEMA (California Emergency Management Agency)
Reviewer for International Journal of Remote Sensing, World Regional Geography text book, Applied Geography, Land Degradation and Development, Journal of Mountain Science, International Symposium Environmental Geotechnology 2012, Remote Sensing, Geosciences, International Journal of Environmental Research and Public Health, ISPRS ISPRS International Journal of Geo-Information, Journal of Applied Geography, Sustainability

Review of research proposals for COAST and Canada Foundation for Innovation

XI. Grants

Applied, not funded

NSF 2013 (with Jerry Davis, Leonard Sklar, Geology, and Chris Crosby & Glen Mattioli, UNAVCO)

MRI: Acquisition of a Terrestrial Laser Scanner for Geomorphological, Geological, and Environmental Research
\$ 276,465

THE ERDAS IMAGINE-DIGITALGLOBE 2012 GEOSPATIAL CHALLENGE

(with Damon Burgett* and Michael Benedetti**)

Measuring river geometry for automatic discharge estimation using geographic object-based image analysis (GEOBIA)

Funded with 5 free images of an estimated value of \$23,040

Center for Computing for Life Sciences (CCLS)

Development of an unmanned aerial vehicle (UAV) imaging system for rapid response collection of high resolution aerial photography. (with Jerry Davis and Andrew Oliphant)
Funded at \$6,500.

Center for Computing for Life Sciences (CCLS)

Unmanned aerial system (UAS) for coastal erosion studies: 3D modeling of erosion features (with Jerry Davis)

Funded at \$4000

Facilitating Research and Creative Work at San Francisco State University

Interdisciplinary Assessment of the Ecological Impacts and Recovery Regimes of Small-scale Gold Mining (with Logan Hennessy, Liberal Studies)

Funded at \$11,048

Ken Fong Research Fund

Impacts of Gold Mining on Wildlife Disease Transmission and Landscape Dynamics

With Ravinder Sehgal, Biology Logan Hennessy, Liberal Studies

Not funded through Research fund, but funded through College of Science & Engineering
\$ 10,000