

A. Personal Information

LAST NAME	SECOND LAST NAME	FIRST AND MIDDLE NAMES
Sanhueza	Campos	Antonio Isaac

RUT	DATE OF BIRTH (DD/MM/YYYY)	SEX (M OR F)	NATIONALITY
10307095-3	March 09, 1968	M	Chilean

ADDRESS (for correspondence)
Los Profetas 03160

REGION	CITY	PROVINCE
IX	Temuco	Cautin

E-MAIL ADDRESS	TELEPHONE NUMBERS (Indicate area code)
asanhueza@ufro.cl	56-45-325335, 56-45-985331

INSTITUTION AND POSITION (In the case of a University, indicate Faculty, School, Department, etc.)
University of La Frontera, Faculty of Engineering, Science and Administration, Department of Mathematics and Statistics

POSITION AT THE CENTER
Professor

B. Short Biography

This field is only for the responsible researcher of the group.

C. Academic Formation

ACADEMIC DEGREES AND PROFESSIONAL STUDIES	UNIVERSITY	COUNTRY	YEAR
Professional Titles			
Statistician / Math License	Catholic University in Santiago	Chile	1990
Academic Degrees			
Master in Statistics	Catholic University in Santiago	Chile	1993
Master in Biostatistics	University of North Carolina at Chapel Hill	USA	1998
PhD in Biostatistics	University of North Carolina at Chapel Hill	USA	2000

D. Academic and Work Activities

POSITION	INSTITUTION <i>(indicate university, faculty, school, department)</i>	TYPE OF CONTRACT	HOURS PER WEEK
Professor	University of La Frontera, Faculty of Engineering, Science and Administration, Department of Mathematics and Statistics	Full time	44

E. Research lines

1. Observational and longitudinal studies
2. Robust procedures in linear and nonlinear models
3. Distributions theory

F. Investigation projects (during the last 5 years)

YEAR		PROYECT NUMBER AND TITLE	FUNCTION <i>(Principal or secondary investigator)</i>
Start date	Finish date		
2009	2012	FONDECYT 1090265: New Families of Distributions on the Inverse Gaussian Model: Theory, Methodology and Application	Principal Investigator
2008	2011	FONDECYT 1080326: Multivariate Extensions of the Generalized Birnbaum-Saunders Distribution and their Characterization and Applicability	Secondary Investigator
2008	2009	DIUFRO DI08-0061: Models Related to the Inverse Gaussian Distribution	Principal Investigator
2006	2007	DIUFRO 120621: A New Class of Asymmetrical Distributions	Principal Investigator
2006	2009	FONDEF DO5I10021: Productos terapéuticos anticariogénicos, aprovechando de las propiedades antibacterianas de mieles de abeja y propóleos con origen nativo: una nueva alternativa de desarrollo para la industria apícola.	Investigator
2005	2007	FONDECYT 1050603: Estudio del patrón de mutilación génico como factor pronóstico en carcinomas subserosos potencialmente curables (pt2) de la vesícula biliar	Secondary Investigator
2004	2005	Internacional Clinical Epidemiology Network (INCLEN) project: Robust Methods in Nonlinear Models for Repeated Measurements in Epidemiology Studies	Principal Investigator

G. Publications. Indicate the number of ISI, NON-ISI, SCIELO or OTHER publications, written to date. Also provide the main publications written during the last 5 years. In the case of books, indicate whether it was the entire book or one/particular chapters.

ISI LAST 5 YEARS:

Authors	Salazar LA , Medina F, Donoso F, Barrientos L, Sanhueza A .								
Manuscript Title	Acción antimicrobiana <i>in vitro</i> de la miel de abejas sobre los microorganismos cariogénicos estreptococos del grupo <i>mutans</i>								
Journal Name	International Journal of Morphology 27(1): 77-82								
Reference	Year	Issue	Pages	Stage of publication at date					
	2009	27(1)	77-82	Published	X	In press		Accepted	

Authors	Sanhueza A. , Sen P.K., Leiva V.								
Manuscript Title	A robust procedure in nonlinear models for repeated measurements								
Journal Name	Communications in Statistics - Theory and Methods								
Reference	Year	Issue	Pages	Stage of publication at date					
	2009	1	138-155	Published	X	In press		Accepted	

Authors	Kotz, S., Leiva, V., Sanhueza, A .								
Manuscript Title	Two new models related to the inverse Gaussian distribution								
Journal Name	Methodology & Computing in Applied Probability								
Reference	Year	Issue	Pages	Stage of publication at date					
	2009			Published		In press	X	Accepted	

Authors	Folsom, A., Aleksic, N., Sanhueza, A. , Boerwinkle, E.								
Manuscript Title	<u>Risk factor correlates of platelet and leukocyte markers assessed by flow cytometry in a population-based sample.</u>								
Journal Name	Atherosclerosis doi: 10.1016/j.atherosclerosis.2008.11.005								
Reference	Year	Issue	Pages	Stage of publication at date					
	2009			Published		In press	X	Accepted	

Authors	Leiva V., Sanhueza A. , Angulo J.M.								
Manuscript Title	2009. A length-biased version of the Birnbaum-Saunders distribution with application in water quality								
Journal Name	Stochastic Environmental Research and Risk Assessment								
Reference	Year	Issue	Pages	Stage of publication at date					
	2009	23 (3)	299-307	Published	X	In press		Accepted	

Authors	Sanhueza, A. , Leiva, V., Flores, E.								
Manuscript Title	On a length-biased life distribution based on the sinh-normal model								
Journal Name	Journal of the Korean Statistical Society http://dx.doi.org/10.1016/j.jkss.2008.12.003								
Reference	Year	Issue	Pages	Stage of publication at date					
	2009			Published		In press	X	Accepted	

Authors	Leiva V., Sanhueza A. , Kelmansky S. and Martinez, E.								
Manuscript Title	On the Glog-normal Distribution and its Application to the Gene Expression Problem								
Journal Name	Computational Statistics and Data Analysis								
Reference	Year	Issue	Pages	Stage of publication at date					
	2009	53	1613–1621	Published	X	In press		Accepted	

Authors	Torres-Quevedo, R., Manterola, C., Sanhueza, A. , Bustos, L., Pineda, V., Vial, M.								
Manuscript Title	<u>Diagnostic properties of a symptoms scale for diagnosing reflux esophagitis</u>								
Journal Name	Journal of Clinical Epidemiology								
Reference	Year	Issue	Pages	Stage of publication at date					
	2009	62 (1)	97-101	Published	X	In press		Accepted	

Authors	Balakrishnan N., Leiva V., Sanhueza A. , Cabrera, E.								
Manuscript Title	Mixture Inverse Gaussian Distribution and its Transformations, Moments and Applications								
Journal Name	Statistics								
Reference	Year	Issue	Pages	Stage of publication at date					
	2009	43 (1)	91-104	Published	X	In press		Accepted	

Authors	Leiva, V., Vilca, F., Balakrishnan, N., Sanhueza, A.								
Manuscript Title	A skewed version of the non-central sinh-normal distribution and its properties and application								
Journal Name	Communications in Statistics Theory and Methods								
Reference	Year	Issue	Pages	Stage of publication at date					
	2009			Published		In press		Accepted	X

Authors	Salazar LA, Vásquez C, Almuna A, Oporto G, Santana R, Herrera C, Sanhueza A.								
Manuscript Title	Detección molecular de estreptococos cariogénicos en saliva								
Journal Name	Int. J. Morphol. (ISI								
Reference	Year	Issue	Pages	Stage of publication at date					
	2008	26	951-958	Published	x	In press		Accepted	

Authors	Sanhueza A. , Leiva V., Balakrishnan N.								
Manuscript Title	A New Class of Inverse Gaussian Type Distributions								
Journal Name	Metrika								
Reference	Year	Issue	Pages	Stage of publication at date					
	2008	68	31-49	Published	X	In press		Accepted	

Authors	Leiva, V., Hernández, H, Sanhueza, A.								
Manuscript Title	An R package for robust and classical versions of the inverse Gaussian distribution								
Journal Name	Journal of Statistical Software								
Reference	Year	Issue	Pages	Stage of publication at date					
	2008	26 (4)		Published	X	In press		Accepted	

Authors	García, P., Manterola, C., Araya, J.C., Villaseca, M., Guzmán, P., Sanhueza, A. , Thomas, M. Alvarez, H., Roa, J.C. 2008.								
Manuscript Title	Promoter methylation profile in preneoplastic and neoplastic gallbladder lesions.								
Journal Name	Mol Carcinog.								
Reference	Year	Issue	Pages	Stage of publication at date					
	2008	48 (1)	79-89	Published	X	In press		Accepted	

Authors	Leiva V., Sanhueza A. , Sen P.K., Paula G.A.								
Manuscript Title	Random number generators for the generalized Birnbaum-Saunders distribution								
Journal Name	Journal of Statistical Computation and Simulation								
Reference	Year	Issue	Pages	Stage of publication at date					
	2008	78 (11)	1105-1118	Published	X	In press		Accepted	

Authors	Brice J.H., Travers D., Cowden C.S., Young M.D., Sanhueza A. , Dunston Y.								
Manuscript Title	Health Literacy among Spanish-Speaking Patients in the Emergency Department								
Journal Name	Journal of the National Medical Association								
Reference	Year	Issue	Pages	Stage of publication at date					
	2008	100 (11)	1326-1332	Published	X	In press		Accepted	

Authors	Leiva V., Sanhueza A. , Silva A., Galea M.								
Manuscript Title	A new three-parameter extension to the inverse Gaussian distribution								
Journal Name	Statistics and Probability Letters								
Reference	Year	Issue	Pages	Stage of publication at date					
	2008	78	1266-1273	Published	X	In press		Accepted	

Authors	Leiva V., Barros M., Paula G.A., Sanhueza A.								
Manuscript Title	Generalized Birnbaum-Saunders Distribution Applied to Air Pollutant Concentration								
Journal Name	Environmetrics								
Reference	Year	Issue	Pages	Stage of publication at date					
	2008	19	235-249	Published	X	In press		Accepted	

Authors	Sanhueza A. , Leiva V., Balakrishnan N., 2008								
Manuscript Title	The Generalized Birnbaum-Saunders Distribution and Its Theory, Methodology and Application								
Journal Name	Communications in Statistics Theory and Methods								
Reference	Year	Issue	Pages	Stage of publication at date					
	2008	37	645-670	Published	X	In press		Accepted	

Authors	Leiva V., Riquelme A., Balakrishnan N., Sanhueza A.								
Manuscript Title	Lifetime Analysis based on the Generalized Birnbaum-Saunders Distribution								
Journal Name	Computational Statistics and Data Analysis								
Reference	Year	Issue	Pages	Stage of publication at date					
	2008	52	2079-2097	Published	X	In press		Accepted	

Authors	Herrera C. , Pantoja P., de La Maza T., Sanhueza A. y Salazar L.								
Manuscript Title	Diagnóstico microbiológico y molecular de bacterias cariogénicas en mujeres embarazadas de la Región de La Araucanía, Chile								
Journal Name	Revista chilena de infectología								
Reference	Year	Issue	Pages	Stage of publication at date					
	2007	24 (4)	270-275	Published	X	In press		Accepted	

Authors	Roa J.C., García P., Sanhueza A. , Manterola C., Araya J., Villaseca M., Guzmán P , Anabalón L.								
Manuscript Title	Methylation profile as a prognostic factor in advanced gallbladder cancer								
Journal Name	Annals of Oncology								
Reference	Year	Issue	Pages	Stage of publication at date					
	2007	18	VII62-VII63, Suppl. 7	Published	X	In press		Accepted	

Authors	Roa J.C., Anabalón L., Castillo J., Melo A., García P., Carlos M., Sanhueza A. , Roa I., Araya J.C., Villaseca M.								
Manuscript Title	Methylation profile as a prognostic factor in advanced gallbladder cancer								
Journal Name	Gastroenterology								
Reference	Year	Issue	Pages	Stage of publication at date					
	2007	132 (4)	A321-A322.	Published	X	In press		Accepted	

Authors	Manterola C., Astudillo P., Losada H., Pineda V., Sanhueza A. , Vial M.								
Manuscript Title	Analgesia in patients with acute abdominal pain								
Journal Name	Cochrane Database of Systematic Reviews DOI: 10.1002/14651858.CD005660.pub2.								
Reference	Year	Issue	Pages	Stage of publication at date					
	2007	3 Art. No.: CD005660.		Published	X	In press		Accepted	

Authors	Manterola C., Vial M., Pineda V., Sanhueza A. , Barroso M.								
Manuscript Title	Factors Associated with Morbidity in Liver Hydatid Surgery								
Journal Name	ANZ J. Surg.								
Reference	Year	Issue	Pages	Stage of publication at date					
	2005	75	889-892	Published	X	In press		Accepted	

Authors	Manterola C., Cuadra A., Muñoz S., Sanhueza A. , Bustos L., Vial M., Fonseca F.								
Manuscript Title	In a diagnostic test study the validity of three serodiagnostic test was compared in patients with liver echinococcosis								
Journal Name	Journal of Clinical Epidemiology								
Reference	Year	Issue	Pages	Stage of publication at date					
	2005	58	401-406	Published	X	In press		Accepted	

Authors	Sanhueza A. , Sen P. K.								
Manuscript Title	Robust M-procedures in Univariate Nonlinear Regression Models								
Journal Name	Brazilian Journal of Probability and Statistics								
Reference	Year	Issue	Pages	Stage of publication at date					
	2004	18	183-200	Published	X	In press		Accepted	

Authors	Martínez S., Zegers Y., Stockins F., Bustos L., Sanhueza A. , Rivera A., Soto L.								
Manuscript Title	Evaluación de una maniobra nutricional tendiente a reducir los niveles de colesterol en pacientes portadores de enfermedad coronaria en el sistema público de salud chileno								
Journal Name	Revista Médica de Chile								
Reference	Year	Issue	Pages	Stage of publication at date					
	2004	132	1457-1465	Published	X	In press		Accepted	

Non ISI LAST 5 YEARS:

Authors	Manterola C., Vial M., Schneeberger P., Peña J.L., Hinostroza J., Sanhueza A.								
Manuscript Title	Precision of ELISA-IgE and ELISA-IgG determination in the postoperative follow-up of patients with hepatic echinococcosis								
Journal Name	Cirugía española								
Reference	Year	Issue	Pages	Stage of publication at date					
	2007	1 (81)	23-27	Published	X	In press		Accepted	

Authors	Claros N., Manterola C., Vial M., Sanhueza A.								
Manuscript Title	Efectividad de la profilaxis antibiótica en el curso de la colecistectomía laparoscópica electiva. Revisión sistemática de la literatura								
Journal Name	Rev. Chilena de Cirugía								
Reference	Year	Issue	Pages	Stage of publication at date					
	2007	59 (5)	353-359	Published	X	In press		Accepted	

Authors	Solano R., Sanhueza A. , Carter M., Bianchi D., Riedemann P.								
Manuscript Title	Electroanalgesia en Síndrome de Dolor Lumbar Agudo: Efectividad Comparativa de TIF versus TENS								
Journal Name	Reumatología								
Reference	Year	Issue	Pages	Stage of publication at date					
	2006	22 (4)	142-146	Published	X	In press		Accepted	

Authors	Núñez P., Olate S., Sanhueza A. , Núñez G.								
Manuscript Title	Perdida de fluór en piezas dentarias permanentes expuestas a refrescos: estudio comparativo in Vitro								
Journal Name	Avances en Odontoestomatología								
Reference	Year	Issue	Pages	Stage of publication at date					
	2006	22 (2)	141-146	Published	X	In press		Accepted	

Authors	Olate S., Zaror R., Sanhueza A. y Núñez G.								
Manuscript Title	Evaluacion de la capacidad buffer salival en niños y adultos de la IX Región Chile								
Journal Name	Rev. Chi. de Ciencias Médico- Biológica								
Reference	Year	Issue	Pages	Stage of publication at date					
	2004	14(2)	61-66	Published	X	In press		Accepted	

H. Presentations at National/International Congresses

List the presentations made during the last 5 years, indicating Authorship of the presentation, the Title of the paper, Name of the Congress, Location, Date and page of the congress minutes. Also indicate whether the paper was written in conjunction with another member of the Center (Write in Verdana size 10)

- Sanhueza A., Sen P., Leiva V. Procedimientos robustos de tipo M en modelos multivariados no lineales para medidas repetidas. VIII Congreso Latinoamericano de Sociedades Estadísticas. Montevideo, Uruguay, Octubre 2008.
- Leiva V., Marchant C., Sanhueza A. Distribuciones estadísticas utilizadas en polución del aire. VIII Congreso Latinoamericano de Sociedades Estadísticas. Montevideo, Uruguay, Octubre 2008.
- Leiva V., Gonzalez G., Sanhueza A. Modelos de muestreo de largo sesgado aplicados a contaminación del agua. VIII Congreso Latinoamericano de Sociedades Estadísticas. Montevideo, Uruguay, Octubre 2008.
- Leiva V., Vilca F., Balakrishnan N., Sanhueza A. Una distribución logarítmica de desgaste acumulativo y sus propiedades y aplicación a datos de contaminación atmosférica. VIII Congreso Latinoamericano de Sociedades Estadísticas. Montevideo, Uruguay, Octubre 2008. VIII Congreso Latinoamericano de Sociedades Estadísticas. Montevideo, Uruguay, Octubre 2008.
- Sanhueza A., Leiva V., Galea M. La distribución inversa Gaussiana de tres parámetros, Jornadas Nacionales de Bioestadística, Santiago, Chile, Enero 2008.
- Sanhueza A., Leiva V. Una nueva familia del tipo inversa Gaussiana, Jornadas Nacionales de Bioestadística, Santiago, Chile, Enero 2007
- Sanhueza A., Leiva V., Flores E., A new lifetime model based on the sinhhyperbolic length biased inverse Gaussian distribution. Third Brazilian Conference on Statistical Modelling in Insurance and Finance, Maresias, SP, Brasil, Marzo de 2007.
- Riquelme M., Leiva V., Galea M., Sanhueza A. Estimación y Diagnóstico del Coeficiente de Variación de una Población Simétrica en R. XXI Jornada de Matemática de la Zona Sur, Concepcion, Chile, Mayo de 2007.
- Leiva V., Sanhueza A., Sen P.K., Paula G.A. Random number generators for the generalized Birnbaum-Saunders distribution. VII CLATSE, Rosario, Argentina, Octubre de 2006.
- Leiva V., Riquelme M., Balakrishnan N., Sanhueza A. Estimation of the generalized birnbaum-saunders distribution with application to reliability analysis. VII CLATSE, Rosario, Argentina, Octubre de 2006.
- Sanhueza A., Sen P. Robust Procedures in Nonlinear Models. XXIIIrd International Biometric Conference, Montreal, Quebec, Canada, July 2006.
- Sanhueza A., Gómez W., Venegas O. (2006). Un Nuevo Modelo Asimétrico. VI Jornada Nacional de Bioestadística de la Sociedad Chilena de Estadística.
- Solange Martínez O., Yvette Zegers B., Benjamín Stockins F., Luis Bustos M., Antonio Sanhueza C., Adriana Rivera S. (2006) Evaluación de una maniobra nutricional tendiente a reducir los niveles de colesterol en pacientes portadores de enfermedad coronaria en el sistema público de salud chileno. XVII Congreso de la Sociedad Chilena de Nutrición, Bromatología y Toxicología, Iquique, Chile.
- Sanhueza A., Gómez W. (2005). Más Allá de la Distribución Skew-Normal. XIX Jornadas de Matemática de la Zona Sur.

- Sanhueza A., Henríquez C. (2005). Strategies of Statistical Analysis in Clinical Trials. V Jornadas de Bioestadística de la Sociedad Chilena de Estadística, Universidad de Chile.
- Henríquez C. F., Sanhueza A. (2005). Data Management: A Necessity for Making Statistics. V Jornadas de Bioestadística de la Sociedad Chilena de Estadística, Universidad de Chile.
- Sanhueza A., Bangdiwala K. (2004). Handling of Baseline Measurements in Clinical Trials. INCLEN Global Meeting XX, Agra, India.
- Sanhueza A. (2004). Análisis Robusto en Modelos de Regresión No Lineal para Medidas Repetidas. VI Congreso Latinoamericano de Sociedades Estadísticas, Universidad de Concepción.
- Manterola C., Vial M, Sanhueza A., Pineda P., Schneeberger P. (2004). ¿Es el Absceso Hepático de Origen Hidatídico un Factor de Riesgo de Morbilidad Postoperatoria?. LXXVII Congreso Chileno e Internacional de Cirugía, Concepción.
- Manterola C., Schneeberger P, Sanhueza A., Vial M , Peña J.L. (2004). Comportamiento Postoperatorio de Inmunoglobulinas Específicas para Hidatidosis. LXXVII Congreso Chileno e Internacional de Cirugía, Concepción.
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I. Undergraduate teaching

Probability and Statistics courses

J. Dissemination and Transfer

Indicate activities of dissemination, technology transfer and research results transfer and others with impact on Chilean society and/or economy in the last 5 years.

- The following publication has had a great impact to the modeling of environmental contamination data: Sanhueza A., Leiva V., Balakrishnan N. 2008. A New Class of Inverse Gaussian Type Distributions. *Metrika*, 68:31–49.
- The Internacional Clinical Epidemiology Network (INCLEN) project entitled “Robust Methods in Nonlinear Models for Repeated Measurements in Epidemiology Studies” has been very important for the application of new models in epidemiology studies in Chile.
- The project “Productos terapéuticos anticariogénicos, aprovechando de las propiedades antibacterianas de mieles de abeja y propóleos con origen nativo: una nueva alternativa de desarrollo para la industria apícola” (FONDEF DO5I10021) has an impact to the public health of Chilean society.

K. Awards and Distinctions

Indicate any awards or distinctions obtained.

Name: **Visiting scholarship**

Institution: Biometric Consulting Laboratory, Department of Biostatistics, University of North Carolina at Chapel Hill

Year: 2005-2007

Description: Scholarship for doing a postdoc in the topic of distribution theory

Country: USA

Name: **International Clinical Epidemiology Network (INCLEN) scholarship**

Institution: Biostatistics department, University of North Carolina at Chapel Hill

Year: 1998-1999

Description: Scholarship for finishing the doctor degree in biostatistics

Country: USA

Name: **Presidente de la Republica de Chile**

Institution: Biostatistics department, University of North Carolina at Chapel Hill

Year: 1995-1997

Description: Scholarship for doctor degree in biostatistics

Country: USA

Name: **The Max Halperin Scholarship Award**

Institution: Biostatistics department, University of North Carolina at Chapel Hill

Year: 1998

Description: The award was in recognition of academic excellence at Department of Biostatistics, University of North Carolina at Chapel Hill.

Country: USA