

## Scheda curriculum docente

### Dati personali

Docente	Renato Guseo
Qualifica	Professore Ordinario di Statistica (SECS-S/01)
Facoltà / Ateneo	Facoltà di Scienze Politiche, Università degli Studi di Padova
Dipartimento	Dipartimento di Scienze Statistiche
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### Insegnamenti

Statistica (C. int.: Stat.I, Stat.II,6+6cfu, DM270) I. triennale: Economia internazionale, ECI; dal 2008-09
Statistica (avanzato), 4cfu, DM509; I. specialistica: Economia dei sistemi produttivi, ESP; fino al 2008-09
Statistica (progredito), 9cfu, DM270; I. magistrale: Economia internazionale, MEI; dal 2009-10

### Orario di ricevimento

Giorno	Orario	Luogo
Martedì (escluso agosto)	12.00-14.00 e 15.00-16.00	Dipartimento di Scienze Statistiche

### Curriculum

Since November 1997	<i>Professore Ordinario di Statistica</i> Faculty of Political Sciences, University of Padova.
<b>Education:</b>	
March 1978	<i>Laurea</i> in Statistics and Economics <i>summa cum laude</i> at University of Padova. Thesis (in Italian): Optimality problems within the theory of finite population sampling. Dissertation Advisor: prof. Angelo Zanella (full professor in Statistics and Head of Montedison Research Center, Milan) .
<b>Employment:</b>	
November 1994 - October 1997	<i>Professore Ordinario di Statistica</i> , Faculty of Economics, University of Udine
October 1987 – October 1994	<i>Professore Associato di Statistica</i> , Faculty of Statistical Sciences, University of Padova.
November 1981–September 1987	<i>Ricercatore di Statistica</i> , Faculty of Economics, Catholic University S.C. of Milan.
January 1980-October 1981	Research Grant in Statistics, Istitut of Statistics, Catholic University S.C. of Milan.
January 1979 – December 1979	Research Grant in Computational Statistics. Sperry Univac.

April 1978 – December 1978      Research Grant in Geostatistics, Centro Studi di Economia Applicata, CSEA, Milan. Co-investigator. Principal Investigator: Prof. Cesare Saibene.

**Recent research awards and experience:**

Fondazione Cassa di Risparmio di Padova e Rovigo. Progetti di Eccellenza 2007-08.  
Three Years Project: 6/2008-5/2011      “Innovation Diffusion Processes: Differential Models, Agent-Based Frameworks and Forecasting Methods. Principal Investigator: R. Guseo; Co-investigators: C. Mortarino, A. Dalla Valle, C. Furlan, M. Guidolin.

International Centre for Mechanical Sciences, CISM, Udine 17-18 September 2002.  
Work Group of the Department of Statistical Sciences, University of Padova.      Meeting Organizer: R. Guseo  
“Statistica e Gestione del Miglioramento Tecnologico”. (F. Pesarin, G. Celant, C. Mortarino, L. Salmaso, R. Guseo, G. Celant, M. Broniatowski).

Venice, 27-29 September 1999  
S.CO '99 Meeting      Scientific coordinator of a DOE Session:  
“Disegno degli esperimenti, modelli complessi e algoritmi di generazione”. (Chairman: R. Guseo, Discussant: A. Giovagnoli).

From 1998-2000      Scientific coordinator: Padova Unit.  
Progetto MURST Cofin98 “Metodologie per la programmazione degli esperimenti e loro applicazioni”.  
National Coordinator: prof Alessandra Giovagnoli

From 1995 to 1997      Scientific Coordinator: Padova Unit.  
Progetto MURST 40% “ Problemi statistici, metodologici, ed applicative, connessi alla ricerca tecnologica ed al controllo di produzione. National Coordinator: prof.Umberto Magagnoli

Pharmastat '92: “Tecniche statistiche per lo studio e l'analisi dei dati del mercato farmaceutico”, Stresa, 1-5.6.1992, Italy.  
Main sponsor: IMS-Health      Scientific Organizer : R. Guseo (with D. Piccolo and C. M. Porceddu Cilione):  
Personal Technical Report for a Seminar Cycle: Guseo, R. (1992). “Ciclo di vita breve del prodotto: applicazioni al mercato farmaceutico, Padova, pp. 1-134.

**Referee:**

Statistica Applicata, Metron, Biometrika, Journal of the Italian Statistical Society, Statistical Methods and Applications; Energy Economics.

**Recent presentations in Scientific meetings:**

[XLIV Riunione Scientifica; Società Italiana di Statistica, Università della Calabria, Campus di Arcavacata, 25-27/6/2008.](#),      Guseo R. "Natural Gas: Depletion Risks and Supply Security Modelling". (with M. Guidolin)  
Self-Organized Contributed Session 6, Statistical

Problems in Energy Systems, 27/6/2008, 14:30-16:00, Room: EP5.

[XLIV Riunione Scientifica; Società Italiana di Statistica, Università della Calabria, Campus di Arcavacata, 25-27/6/2008](#),

Poster Session, 26/6/2008, 14:30-16:00, Centro Congressi.

S.Co. 2007, Fifth conference, "Complex Models and Computational Intensive Methods for Estimation and Prediction", Venice, 6-8 September 2007.

Intermediate Meeting, Società Italiana di Statistica, "Risk and Prediction", Venice 6-8 June 2007, Session: Contributions to inference.

XLIII Riunione Scientifica; Società Italiana di Statistica, Torino 14-16/6/2006. Sessione Spontanea C3.

Convegno Intermedio Società Italiana di Statistica: "Statistica e Ambiente", Messina, 21-23 September 2005. Sessione Spontanea: Sustainable Development.

XLII Riunione Scientifica; Società Italiana di Statistica, Bari 9-11/6/2004. Sessione Spontanea: Statistical Methods for Technology.

National Meeting: "Le torri solari di Empoli, Energie rinnovabili e partecipazione pubblica"; 30 aprile 2004; Ospedale "San Giuseppe", Empoli (Florence).

#### **Recent Seminars:**

[Seminar: Università Cattolica del S.C. Milano, 23-10-2007](#).

Guseo R. "Competition Modelling in Multi-Innovation Diffusions: Multivariate Cellular Automata and Differential Approaches" (with A. Dalla Valle)

Guseo, R. "Cellular Automata with Network Incubation Period versus Perturbed Riccati Equation Models in Information Technology Innovation Diffusion". (with M. Guidolin)

Guseo, R. "Partial and Ecological Correlation: a Common Three Terms Covariance Decomposition".

Guseo R. "Cellular Automata and Riccati Equation Models for Diffusion of Innovations". (with M. Guidolin)

Guseo, R., "World Oil Depletion Models: Price Effects Compared with Strategic or Technological Interventions". (with A. Dalla Valle, M. Guidolin)

Guseo, R. "Oil and Gas Depletion: Diffusion Models and Forecasting under Strategic Intervention". (with A. Dalla Valle)

Guseo, R. "L'esaurimento del petrolio e del gas: ruolo dei modelli di diffusione in presenza di interventi strategici". Invited presentation.

Guseo, R. "Modelling a Dynamic Market Potential: A Class of Automata Networks for Diffusion of Innovations Driven by Riccati Equations"

#### **Research areas:**

Prof. Guseo's main research areas may be sequentially listed as follows:

- a) statistical inference and inductive logic: R. Carnap's approach;
- b) theory of statistical sampling from finite populations: theory of optimal estimation in a non-dominated measurable space;
- c) statistical inference in non-linear regression models: exact, approximated and asymptotic confidence regions, curvatures, dispersion functions, power functions, D-optimal experimental designs;

d) design of experiments, statistical quality control and process improvement: warning barriers for control charts, D-optimal designs for multiresponse models; robustness, Invariances under statistical dependence among runs within  $2^{(k-p)}$  designs; designs for hierarchical structures of factors and analysis of univariate and multivariate models, split-plot and strip-plot extensions;

e) models for Diffusion of Innovations (Bass and Riccati equations); Competition and substitution models (Guseo-Bonaldo equations, Lotka-Volterra equations); Intervention and control sub-models;

f) statistical models for non renewable resources depletion analysis and forecasting;

g) Cellular automata, network automata, dynamic market potential, adoption processes and network externalities.

**Other academic and professional experience:**

Since 2007	Council member of “Centro Studi G. Levi-Cases di Economia e Tecnica dell’Energia”, Padova
From 1994 to 2006	Member of the Advisory Board of “Dottorato di Ricerca in Statistica Applicata alle Scienze Economiche e Sociali” of Padova;
From 2001 to 2005	President of the Council of Laurea (B.Sc.) in “Economia Territoriale e Reti d’Imprese” (ETR) (Economic Sciences), University of Padova.
From 1999 to 2005	President of the “Council of the Computing Center of the University of Padova”;
2002	Co-founder and scientific member of ASPO-Italia (Association for the Study of Peak Oil and Gas)
From 1994 to 1997	First director of the “Department of Statistical Sciences” at the University of Udine.
Since 1979	Member of Italian Statistical Society (S.I.S)

**Pubblicazioni**

## **Period 2009-2003:**

### **Published refereed papers:**

Guseo, R., Guidolin, M. (2009). Modelling a Dynamic Market Potential: A Class of Automata Networks for Diffusion of Innovations, *Technological Forecasting and Social Change*, 76(6), 806-820, <http://dx.doi.org/10.1016/j.techfore.2008.10.005>

Guseo, R., Guidolin, M. (2008). Cellular Automata and Riccati Equation Models for Diffusion of Innovations. *Statistical Methods and Applications*, 17(3), 291-308, <http://dx.doi.org/10.1007/s10260-007-0059-3>

Guseo, R., Dalla Valle, A., Guidolin, M. (2007). World Oil Depletion Models: Price Effects Compared with Strategic or Technological Interventions, *Technological Forecasting and Social Change*, 74(4), 452 - 469; <http://dx.doi.org/10.1016/j.techfore.2006.01.004>

Guseo, R., Capuzzo, S. (2006). A quando l'ultima stilla? Le serie storiche delle estrazioni alla base di nuovi scenari di previsione sul picco del petrolio, *Ambiente Risorse Salute*, n. 108, Marzo/Aprile, 6-14. ([download](#))

Guseo, R., Dalla Valle, A. (2005). Oil and Gas Depletion: Diffusion Models and Forecasting under Strategic Intervention, *Statistical Methods and Applications*, vol. 14, 3, 375-387; <http://dx.doi.org/10.1007/s10260-005-0118-6> .

Mortarino, C., Guseo, R. (2003). Circular Dependence in a Multiresponse Mixed Model under a Split-Plot Design, *Journal of Italian Statistical Society, SMA*, (2000), 9, 1-3, 127-138.

Guseo, R. (2003). Split and Strip-Plot Configurations of Two-Level Fractional Factorials: a Review; *Journal of Italian Statistical Society, SMA*, (2000), 9, 1-3, 85-96.

### **Forthcoming papers:**

Guseo, R. (2010). Partial and Ecological Correlation: a Common Three Terms Covariance Decomposition. *Statistical Methods and Applications*, (Forthcoming) <http://dx.doi.org/10.1007/s10260-009-0117-0>

### **Other:**

Guseo, R., Guidolin, M. (2007c). Cellular Automata with Network Incubation Period versus Perturbed Riccati Equation Models in Information Technology Innovation Diffusion. S.Co.2007, Fifth Conference, Complex Models and Computational Intensive Methods for Estimation and Prediction, Venice 6-8 september 2007, P. Mantovan, A. Pastore, S. Tonellato, (Eds.) Book of Short Papers, 272-77. ([download](#))

Guseo, R. (2007). Partial and Ecological Correlation: a Common Three Terms Covariance Decomposition. Atti Convegno Intermedio SIS: "Risk and Prediction", Venezia 6-8/6/2007, Cleup Padova, 577-578. (Short paper).

Guseo, R., Guidolin, M. (2006). Cellular Automata and Riccati Equation Models for Diffusion of

Innovations. (Short Paper), Atti della XLIII Riunione Scientifica della Società Italiana di Statistica, Torino 14-16/6/2006, Vol. Sessioni Spontanee, 103-106, Cleup, Padova.

Guseo, R. (2005). Esaurimento mondiale del petrolio: modelli Bass-let per il riconoscimento di generazioni successive del parco automobilistico italiano. Presentato al Convegno S.Co.2005, "Modelli complessi e metodi computazionali intensivi per la stima e la previsione", 15-17 settembre 2005, Bressanone. (Short Paper), Atti del Convegno pp. 437-442; CLEUP, Padova.

Guseo, R., Dalla Valle, A., Guidolin, M. (2005). World Oil Depletion Models: Price Effects Compared with Strategic or Technological Interventions, (short paper): Atti del Convegno Intermedio della Società Italiana di Statistica "Statistics and Environment", Messina 21-23/9/2005, Vol. Contributed Papers, 167-170; CLEUP, Padova.

Guseo, R. (2004). Interventi strategici e aspetti competitivi nel ciclo di vita di innovazioni; Strategic Interventions and Competitive Aspects in Innovation Life Cycle; Working Paper Series, N. 11, Department of Statistical Sciences, University of Padua, Italy; (in Italian) ([download](#))

**Under review:**

Guseo, R. (2007). How much Natural Gas is there? Depletion Risks and Supply Security Modelling.

Guseo, R. (2007). Bass-let Detection of Automobile Successive Generations: Evidence from the Italian Case.

**Books:**

Guseo, R. (2006). Statistica. 3rd ed., ISBN 88-13-26320-1, Cedam, Padova, 1-763.

Guseo, R. (2004). Organizzazione statistica dell'informazione e scelte di gestione: Teoria, tecniche e mini-stage aziendali, 2nd ed., ISBN 88-13-25316-8, Cedam, Padova, 1-309.