

Curriculum Vita
Anna K. Panorska,
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EDUCATION

1988-1992 University of California at Santa Barbara; Ph.D. in Mathematics.
1986-1988 University of Texas at El Paso; M.S. in Statistics.
1982-1986 Department of Mathematics, Mechanics, and Computer Science, University of
Warsaw, Poland (Major in Mathematics).

PROFESSIONAL EXPERIENCE

August 2012 – August 2014

Director of the Graduate Program, Mathematics and Statistics department, UNR.

Position Responsibilities: Full administrative and advising responsibilities for the program. Evaluation of the applicants, admissions, advising for all graduate students in the program. Coordination with department teaching needs. PhD program proposal written, approved by the department faculty and the Chair and submitted to the Dean, CoS in May 2013.

August 2011 – present

Professor with Tenure, Department of Mathematics and Statistics, University of Nevada, Reno.

Position Responsibilities: Teaching, research, and service.

July 2005 – 2011

Associate Professor with Tenure, Department of Mathematics and Statistics, University of Nevada, Reno.

Position Responsibilities: Teaching, research, and service.

Approximately 2003 – present: member of the faculty of the Graduate Program of Hydrologic Sciences.

August 2004 – May 2005

Interim Director, Senator Alan Bible's Center for Applied Research (SABCAR), and Center for Research Development and Statistical Methods (CRDSM), UNR.

Position Responsibilities: Full management, administrative (staffing and personnel) and fiscal responsibility for both centers (about 40-50 employees ranging from PhD faculty statistical consultants, through classified employees, graduate research assistants, and hourly employees). Responsible for all projects of the two centers, including all consulting projects for CRDSM (STATLAB) and all survey projects for SABCAR. This was 50% position. The other 50% was in the Math/Stat dept.

August 2002 – June 2005

Assistant Professor, Department of Mathematics and Statistics, University of Nevada, Reno.

Position Responsibilities: Teaching, research, and service.

January 2004 – May 2004 – Statistical Consultant, CRDSM.

Position Responsibilities: Consulting for numerous faculty (UNR and DRI) and graduate students on the statistical aspects of their research. Supervision and training in consulting for graduate students working in CRDSM.

September 2000 – July 2002

Associate Research Professor, Division of Hydrologic Sciences, Desert Research Institute, University and Community College System of Nevada, Reno.

Position responsibilities: Development of successful research and project funding opportunities, collaboration with interdisciplinary teams across DRI and other institutions.

September 1999 – August 2000

Visiting Assistant Professor, Department of Statistics and Applied Probability, University of California, Santa Barbara.

January 1997 – September 1999

Manager of Biostatistics Department, Health Care Services Division, BlueCross BlueShield of Tennessee (BCBST). Promoted in 1999 from Senior Research Biostatistician.

Position responsibilities: Development, direction and administration of a health care informatics department providing risk, decision, and biostatistics/public health research support for all BCBST managed care plans (four HMOs including Medicaid and Medicare managed care plans and a PPO). Planning, design, and implementation of all biostatistics, epidemiology, disease management, outcome studies, applied statistics, quality improvement, utilization and cost, regulatory reporting, and survey programs and projects.

August 1992 – July 1997

Assistant Professor, Department of Mathematics, University of Tennessee at Chattanooga.

Position Responsibilities: Teaching, research, and service.

June – July 1994

Visiting Assistant Professor, Center for Stochastic Processes, University of North Carolina, Chapel Hill.

Position responsibilities. Development of methods for analysis of highly volatile data.

CONSULTING EXPERIENCE

January -May 2004

Faculty Consultant, Statistical Consulting Service Unit, CRDSM, UNR.

Position Responsibilities: provide statistical consulting to UNR, DRI, and industry clients, oversee and direct student consultants.

1996-1997

Expert Statistical Consultant for BCBST Government Benefits Administrator (Medicare), BlueCross BlueShield of Tennessee.

Position responsibilities: Developed statistical methods and procedures for identification of aberrant providers and overpayment leading to program savings. Guided programmers and analysts in the implementation of a computer system for this process.

1999- present

Expert Statistical Consultant, Health Care Services Division, BlueCross and BlueShield of Tennessee.

Position responsibilities: Statistical design, sampling, and analysis of customer and provider satisfaction surveys. Design and analysis of Health Risk Assessment. Statistical and systems work on the design of a medical management information system. Government programs, evaluation of quality outcomes, managed care, and other projects.

LANGUAGES

English, Polish, Russian (limited by now).

COMPUTER LANGUAGES/PACKAGES/ENVIRONMENTS

Fortran, SPlus, R, Minitab, MS Office tools, DOS, Windows, Unix.

AFFILIATIONS

- American Statistical Association
- The Institute of Mathematical Statistics

TEACHING

AWARDS

- The UNR Student Chapter of the American Water Resources Association awarded Anna Panorska the “**Excellence in Teaching Award**” for the 2002-2003 Academic Year.
- Named **Dean’s Scholar Mentor 2006** by a Dean’s Scholar Fares Qeadan, the best graduating senior of Spring 2006 in Computer Science. Fares was also Mathematics major with Statistics option.
- Named **Westfall Scholar Mentor 2012** by a Dean’s Scholar Jessica Reynolds, the best graduating senior of Spring 2012 in Mathematics.
- One of the top 5 candidates for the 2012 Alan Bible teaching award from UNR.

COURSES TAUGHT AT UNR (graduate courses are 600 and above)

STAT 152, Introduction to Statistics

MATH 126 Precalculus

MATH 176, Business Calculus

MATH/STAT 452/652 Statistics I (Statistics: Continuous Methods)

MATH 461/661 Probability Theory

MATH 793 Independent Study – Statistical Computing in Splus

MATH 352 Probability and Statistics

STAT 467/667 Statistical Theory

MATH 767 Advanced Mathematics for Earth Sciences

STAT 755 Multivariate Statistical Analysis

STAT 757 Applied Regression Analysis

STAT 797 Theses –numerous times

Participated in teaching NRES 701D (Section 744) Interdisciplinary Modeling: Water-Related Issues, July 14-August 1, 2008, and June 2012.

Taught Honors in the Major several times.

Taught Summer Scholars program for UNR, 15 participants. August 22, 2009.

CURRICULAR WORK

Extensive curricular work experience including recent experience with graduate courses and program development. Developed PhD in Mathematics program proposal in 2013 (on CoS Dean’s desk now). Extensive revision and updates to several courses in Mathematics and Statistics department.

GRADUATE STUDENT SUPERVISION

Direct(ed) research (or consulting activities) and provided/organized financial support (as RAs) to six mathematics and statistics graduate students and one undergraduate student:

- Mike Dornoo (Summer and Fall 2003) - via Truckee TMDL Project from the Lahontan Regional Water Quality Control Board (DRI).

- Frank Amankonah (Summer and Fall 2003, Spring 2004) – via NSF grant and *Tahoe TMDL project* from the Lahontan Regional Water Quality Control Board.
- Debbie Rominger, (Fall 2003, Spring and Summer 2004, Fall 2004 and Spring 2005) – via NSF grant and STATLAB Statistical Consulting Lab (Fall and Spring 05).
- Fares Qeadan – (Fall 2005-Spring 2008) – via NSF grant.
- Doug Christensen – via STATLAB Statistical Consulting Lab (Fall and Spring 05)
- Ryan Dotson - via STATLAB Statistical Consulting Lab (Fall and Spring 05)
- Margaret Michalowski (Fall 2013) – via DRI, supervised her statistical work in atmospheric science.

Directed MS thesis work for the following students

- Frank Amakonah (Mathematics, MS in Summer 2005).
- Debbie Rominger (Mathematics, MS in Summer 2005).
- Fares Qeadan (Mathematics, MS in Summer 2008)
- Rachael Peavler (Hydrology, MS, Fall 2008)
- Shakil Shrestha (Mathematics, MS – Spring 2010)
- Osei Akoto (Mathematics, MS – Spring 2010)
- Anton Shevchenko (Finance, MS – Spring 2010)
- Heidi Tan (Mathematics, MS – Spring 2012)

Directed PhD student dissertation research – both starting in Fall 2014:

- Kelly Sterle – hydrology, PhD expected in May 2020
- Sepideh Bahrami- hydrology, PhD expected in May 2020.

Directed post-doc research:

- Marek Arendarczyk, March-June 2014.

Directed undergraduate honors thesis or McNair thesis work for the following students

- Jessica Reynolds (Mathematics, honors thesis, BS Mathematics – May 2012)
- Brandon Koch (Mathematics, McNair scholars thesis, May 2013)
- Elliott Koontz (Mathematical biology, honors thesis, co-advisor with M. Forister, -May 2014)
- Brandon Woudhuysen (Mathematics, McNair scholars thesis and honors thesis, present)
- Emily Gary (Mathematics, honors thesis, present)

Served on the MS thesis or PhD dissertation committees for several mathematics, engineering, science, and education majors.

- Seidu Inusah (Mathematics, MS-Summer 2003)
- Katrina Smollen (Hydrology, MS - Spring 2004)
- Marija Grabasnijak (Hydrology, MS – Spring 2003)
- Christine Kirick (Hydrology, MS - Summer 2002)
- Mike Dornoo (Mathematics, MS – Fall 2003)
- Brian Epstein (Hydrology, MS Fall 2004)
- Alexandra Lutz, (Hydrology, PhD Spring 2006)
- Melissa Gunter, (Hydrology, MS Spring 2005)
- Fran Sandemeier (Biology, PhD Fall 2009)

- Kamrakali Paramguru, (Metallurgical Engineering, MS 2005)
- Wyndand Nell (Electrical Engineering, MS 2005)
- Pradeep Pillai (Metallurgical Engineering, MS Spring 2006)
- Mike Dornoo (Education, PhD – Spring 2009)
- Sara Nasser (Computer Science, PhD – Spring 2008)
- Daron Duke (Anthropology , PhD- Spring 2010)
- Anil Shankar (Computer Science Engineering, PhD Fall 2009)
- Jordan Beamer (Hydrology, MS, May 2012)
- Leandra Copeland (Economics, MS, may 2012)
- Leonardo Hernandez-Espinoza (PhD, Biology, expected May 2015)
- J.D. McAlpine (Atmospheric science, PhD, Dec 2012)
- Amber White (Speech Therapy, MS, 2012-2013)
- Ivy Attah (Civil and environmental Engineering, MS, Dec 2012)
- Ahsan Ahsanuzzaman (Civil Engineering, MS, Dec 2013)
- James, Yadavaia (Psychology, PhD, may 2013)
- Harry, Thompson (MS, Mathematics, Dec 2013)
- Richard Kelley (CS, PhD, May 2013)
- Roshan Suwal (Civil and Environmental Engineering, MS, Dec 2013)
- Rasool Andalibian (Civil and Environmental Engineering, PhD expected May 2015)
- Saeedeh Farivar (Civil and Environmental Engineering, PhD expected May 2015)

MS examining committee chair: numerous graduate students in the Mathematics and Statistics department, and other departments.

Student advising at UNR

Graduate: Advised numerous graduate students in probability, statistics and stochastic models. In Fall 2003, Spring 2004, and during Fall 2012 – present: advised most of the current and prospective graduate mathematics and statistics students as the Chair of their Advisory Committees or Graduate Program Director, or both.

2003-2004 and Fall 2012 – present: Graduate Director for Mathematics and Statistics, advised all graduate students.

Undergraduate: Fall 2009-present. Formal undergraduate advisor in the Mathematics and Statistics department. Advised numerous students formally and informally on their academic path and future career opportunities. Participated in the recruitment events for the College of Science in Reno and Las Vegas (2012-present). Organized recruitment events for the mathematics program at UNR.

RESEARCH AND CREATIVE ACTIVITIES

RESEARCH INTERESTS

Probability and statistics: Probability theory, limit and stable measures, risk modeling in economics, finance and environmental sciences, modeling and forecasting heavy-tailed phenomena and extreme events. Statistical modeling in the sciences.

Climate/its extremes and change: Modeling, predictability, and prediction of weather extremes; modeling the influence of low frequency climate forcings like El Niño on climate variability and extremes; climate change.

Hydrology and Environmental Science: Statistical and probabilistic models for describing and forecasting physical and chemical processes in watersheds. Total Maximum Daily Loads modeling.

Biostatistics: Collaborative work researching the effects of new clinical therapies including joint work with researchers in the Warsaw Lung Cancer Institute and Warsaw School of Medicine – Clinical Imaging (Poland). Collaboration with faculty in Speech Pathology & Audiology, UNR, School of Medicine.

Papers published, accepted for publication. Note that mathematics and statistics publications list authors in the alphabetical order.

1. Cavanaugh, N.R., Gershunov, A., Panorska, A.K., and Kozubowski, T.J. (2015). On the Probability Distribution of Daily Precipitation Extremes. *Geophysical Research Letters*, in press.
2. Forister ML, Novotny V, Panorska AK, Baje L, Basset Y, Butterill PT, Cizek L, Coley PD, Dem F, Diniz IR, Drozd P, Fox M, Glassmire AE, Hazen R, Hrcek J, Jahner JP, Kaman O, Kozubowski TJ, Kursar TA, Lewis OT, Lill J, Marquis RJ, Miller SE, Morais HC, Murakami M, Nickel H, Pardikes N, Ricklefs RE, Singer MS, Smilanich AM, Stireman JO, Villamarin-Cortez S, Vodka S, Volf M, Wagner DL, Walla T, Weiblen GD, Dyer LA (2015). The global distribution of diet breadth in insect herbivores. *Proceedings of the National Academy of Sciences USA*. 112:442-447.
3. Koch, B.L., and Panorska, A. K. (2013). The impact of temperature on major league baseball, *Weather, Climate and Society*, October 2013, 5(4), pp. 359-366.
4. Copeland, L., Panorska, A. K., Edberg, D. T., Wendel, J. (2012). Applying business intelligence concepts to medicaid claim fraud detection. *Journal of Information Systems Applied Research*, 5(1), pp. 51-61.
5. Qeadan, F. Kozubowski, T. J., Panorska, A. K. (2012). The joint distribution of the sum and the maximum of iid exponential random variables. *Communications in Statistics: Theory and Methods*, 41(3), pp. 544-569.
6. Kozubowski, T. J., Panorska, A. K., Qeadan, F. (2011). A new multivariate model involving geometric sums and maxima of exponentials, *Journal of Statistical Planning and Inference*, 141, pp. 2353 – 2367.

7. Kolodziejczak, M., Sudol-Szopinska, I., Stefanski, R., Panorska, A.K., Gardyszewska, A., Krasnodebski, I. (2011). Anal endosonographic findings in women after vaginal delivery. *European Journal of Radiology*, 78(1), pp. 157-159.
8. Kozubowski, T. J., Panorska, A. K., Qeadan, F. (2010). The distributions of the peak to average and peak to sum ratios of exponential variables. Book chapter in: *Advances in Directional and Linear Statistics: A Festschrift for J.S. Rao*, Ashis SenGupta, Martin Wells Editors, Springer, pp. 131 – 143.
9. Lutz, A., Thomas, J., and Panorska, A.K. (2010). Environmental controls on stable isotope precipitation values over Mali and Niger, West Africa. *Environmental Earth Sciences*, SpringerOpen.
10. Clow, D. Peavler, R.S., Roche, J., Panorska, A.K., Thomas, J.M., Smith, S. (2010). Assessing possible visitor-use impacts on water quality in Yosemite National Park, *Environmental Monitoring and Assessment*, 183, pp. 197- 215.
11. Sudol-Szopinska I, Radkiewicz J, Szopinski T, Panorska, A. K, Jakubowski, W, Kawka, J. (2010). Postpartum endoanal ultrasound findings in primiparous women after vaginal delivery. *Acta Radiologica*, 51 (7), pp. 819-824.
12. Kozubowski, T. J. Panorska, A. K., Qeadan, F., with Gershunov, A. and Rominger, D. (2009). Testing exponentiality versus Pareto distribution via likelihood ratio. *Communications in Statistics: Simulation and Computation*. 38 (1), pp. 118-139.
13. Kozubowski, T.J., Panorska, A.K. and Biondi, F. (2009). Mixed multivariate models for random sums and maxima, Special Volume *Multivariate Statistical Methods in the 21st Century* to be released by the Indian Statistical Institute and published by World Scientific, Singapore, pp. 145-171.
14. Panorska, A. K., Kozubowski, T. J., (2009) A note on the joint distribution involving Poissonian sum of exponential variables", *Advances and Applications in Statistical Sciences*. 12, pp. 157-165.
15. Von Berg, S., Panorska, A. K., Uken, D., and Qeadan, F. (2009) Synthesized speech for four listener groups, *Augmentative and Alternative Communication (The Journal of the International Society of the Augmentative and Alternative Communication)*, 25(1), 7-18.
16. Saito, L., Biondi, F., Salas, J. D., Panorska, A. K., and Kozubowski, T. J. (2008) A watershed modeling approach to stream flow reconstruction from tree-ring records. *Environmental Research Letters* 3.
17. Kozubowski, T.J., A.K. Panorska, Podgorski, K. (2008). A bivariate Levy process with negative binomial and gamma marginals, *Journal of Multivariate Analysis*, 99, pp. 1418-1437.
18. Kozubowski, T.J., Panorska, A.K. (2007). A mixed bivariate distribution connected with geometric maxima of exponential variables, *Communications in Statistics-Theory and Methods*, 37, pp. 2903-2923, 2008.

19. Biondi, F., Kozubowski, T.J., Panorska, A.K., and Saito, L. (2007). A new stochastic model of episode peak and duration for eco-hydro-climatic applications. *Ecological Modelling*, 211(3), pp. 383-395.
20. Panorska, A.K., Gershunov, A., Kozubowski, T.J. (2007). From diversity to volatility: Probability of daily precipitation extremes. Book chapter in *Nonlinear dynamics in geophysics*, Springer-New York, pp. 465-484.
21. Sudol-Szopinska, I., Panorska, A. K., Kozinski, P., Blachowiak, K. (2007), Work related chronic venous disease in office and bakery workers, *Occupational Ergonomics*, 7(2), pp. 125-137.
22. Koracin, D., Panorska, A., Isakov, V., Touma, J. S., Swall, J. (2007). A statistical approach for estimating uncertainty in dispersion modeling: An example of application in southwestern USA, *Atmospheric Environment*, 41, pp. 617-628.
23. Aban, I, Meershaert, M. M. and Panorska, A. K. (2006) Parameter estimation for the truncated Pareto distribution, *Journal of the American Statistical Association*, 101, pp. 270-277.
24. Dana, G.L., Panorska, A.K., and Susfalk, R.B. (2006). Suspended sediment loading in the middle reach of the Truckee river, California, 2002-03. *Journal of the Nevada Water Resources Association*, 3(1), pp. 65-80.
25. Kozubowski, T.J. and Panorska, A.K. (2005). A mixed bivariate distribution with exponential and geometric marginals, *Journal of Statistical Planning and Inference*, 134, pp. 501-520.
26. Biondi, F., Kozubowski, T. J. and Panorska, A. K. (2005). A new model for quantifying climate episodes *International Journal of Climatology*, 25, pp. 1253-1264.
27. Kozubowski, T. J., Meershaert, M.M. , Panorska, A. K. and. Sheffler, H. P. (2005). Operator geometric stable laws, *Journal of Multivariate Analysis*, 92, pp. 298-323.
28. I. Sudol-Szopinska, W. Jakubowski, M. Kolodziejczak, Szopinski, T, and Panorska, A. K. (2005). Endosonography in the diagnosis of recurrent anal fistulas, *Radiol. Oncol*, 39(1), pp. 171-175,225.
29. Sudol-Szopinska, I., Cendrowski, K., Sawicki, W., Szopinski, T., and Panorska, A. K., Jakubowski, W. (2004). Anal endosonography in the diagnostics of ano-vaginal fistulas and anterior anal sphincter defects. *Ginekologia Praktyczna 2* (77), pp. 38 - 45. (in Polish with English summary).
30. Sudol-Szopinska, I., Szczepkowski, M., Panorska, A. K., Szopinski, T., and Jakubowski, W. (2004). Comparison of contrast-enhanced with non-contrast endosonography in the diagnostics of anal fistulas. *European Radiology*, 14, pp. 2236- 2241.
31. Kozubowski, T.J. and Panorska, A.K. (2004). Testing symmetry under a skew Laplace model, *Journal of Statistical Planning and Inference*, 120, pp. 41-63.
32. Sudol-Szopinska, I., Szczepkowski, M., Bielecki, K., Kolodziejczak, M., Szopinski, T., and Panorska, A. K. (2004). Evaluation of the usefulness of contrast-enhanced with non-contrast-

- enhanced endosonography in the diagnostics of primary and recurrent anal fistulas. *Polish Journal of Surgery (Polski Przegląd Chirurgiczny)*, 76 (9), pp. 936 - 948. (in Polish with English summary).
33. Sudol-Szopinska, I., Szczepkowski, M., Kolodziejczak, M., Panorska, A. K. and Szopinski, T., (2004). Usefulness of contrast-enhanced anal endosonography in the diagnostics of anal fistulas. *Medycyna Rodzinna*, 3 (29), pp. 113 -117. (in Polish with English abstract).
 34. Hu, B., Wu, Y., Panorska, A., Zhang, D., and He, C. (2003). Stochastic study on groundwater flow and solute transport in porous medium with multiscale heterogeneity, *Advances in Water Resources*, 26, pp. 541-560.
 35. Kozubowski, T., J., Panorska, A. K., and S.T. Rachev (2003). Statistical issues in modeling multivariate stable portfolios, in: *Handbook of Heavy Tailed Distributions in Finance*, S.T. Rachev (Ed.), North Holland, pp. 131-167.
 36. Biondi, F., Kozubowski, T.J. and Panorska, A.K. (2002). Stochastic modeling of regime shifts: Univariate analysis, *Climate Research*, 23, pp. 23-30.
 37. Podnar, D., Koracin, D., and Panorska, A. (2002). Application of artificial neural networks to modeling the transport and dispersion of tracers in complex terrain, *Atmospheric Environment*, 36, pp. 561-570.
 38. Sudol-Szopinska, I., Szczepkowski, M., Jakubowski, W., and Panorska, A. (2002). Endosonographic appearance of the anal sphincters in patients following colostomy. *Radiol. Oncol*, 36(1), pp. 13-22.
 39. Sudol-Szopinska, I., Szczepkowski, M., Jakubowski, W., and Panorska, A. K. (2002). Usefulness of endosonography in patients with colostomy before decision of decolostomy. *Pol. Merk. Lek.*, XIII, 78, pp. 484-486, (in Polish with English summary).
 40. Szopinski, J., von Kleist, S., Rowinska-Zakrzewska, E., Panorska, A., Roginska, E., Rogala, E. (2001). Interferon gamma and interleukin-2 secretion in whole blood cell cultures from small-cell lung cancer patients, *Tumor Biology*, 22(2), pp. 72-76.
 41. Szopinski, J., Panorska, A., Roginska, E., Rogala, E., Rowinska-Zakrzewska, E. (2001). The influence of small cell lung cancer (sclc) extension on the interleukin-2 and interferon γ secretion in whole cell cultures stimulated with mitogens, *Polish Pneumology and Alergolog*, 69, 1/2, pp. 26-32 (in Polish with English summary).
 42. Nolan, J.P., Panorska, A.K., and McCulloch, J.H. (2000) Estimation of stable spectral measures. *Mathematical and Computer Modeling*, 34, pp. 1113-1122.
 43. Szopinski, J., von Kleist, S., Panorska, A., Roginska, E., Rogala, E., Rowinska-Zakrzewska, E., (1999). Interleukin-2 and interferon γ secretion in whole blood cell culture stimulated with mitogens in lung cancer patients *Polish Pneumology and Alergology*, 67(11/12), pp.1-10 (in Polish with English summary).
 44. Panorska, A. K. (1999). Generalized convolutions on R with applications to financial modeling, *Mathematical and Computer Modelling*, 29, pp. 263-274.

45. Kozubowski, T.J. and Panorska A.K. (1999). Simulation of geometric stable and other limiting multivariate distributions arising in random summation scheme. *Mathematical and Computer Modeling* 29, pp. 255-262.
46. Kozubowski, T.J. and Panorska A.K (1999). Multivariate geometric stable distributions in financial applications (with T. J. Kozubowski), *Mathematical and Computer Modeling*, 29, pp. 83-92.
47. Kozubowski, T.J. and Panorska A.K. (1998). Weak limits for multivariate random sums. *Journal of Multivariate Analysis*, 67, pp. 398-413.
48. Nolan, J.P., and Panorska, A.K. (1997). Data Analysis for heavy tailed multivariate samples. *Communications in Statistics – Stochastic Models*, 13(4), pp. 687-702.
49. Panorska, A. K. (1997). A note on the rate of convergence for P-convolutions on R^d , *Probability and Mathematical Statistics*, 17, 1, pp. 139-147.
50. Panorska, A.K. (1996). Generalized stable models for financial asset returns. *Journal for Computational and Applied Mathematics*, 70, pp. 111-114.
51. Kozubowski, T.J. and Panorska A.K. (1996). On moments and tail behavior of ν -stable random variables. *Statistics and Probability Letters*, 29, pp. 307-315.
52. Panorska, A.K., Mittnik, S., and Rachev, S.T. (1995). Stable GARCH models for financial time series *Applied Mathematics Letters*, 8 (5), pp. 33-37.
53. Panorska, A.K. (1994). Rate of convergence in the central limit theorem for generalized convolutions, in: *Approximation, Probability and Related Fields*, G. Anastassiou et al. Eds., Plenum, New York, pp. 379-393.

GRANTS AND FUNDING (excluding current pending proposals)

1. *Risk Analysis, Ruin and Extremes (RARE)* (2013-2018). EU Framework 7 project, within the Marie Curie People Action on International Research Staff Exchange Scheme (IRSES). UNR is a partner institution in this project, (**UNR - project director**). There is no funding to UNR as US institutions are not eligible for funds under this project.
2. *Stochastic Modeling for Episode Duration, Magnitude and Peak in Long Paleo Records*, National Science Foundation (2005 -2007), ATM -0503722, (**co-PI** -\$241, 226). This is a collaboration with researchers from Geography and Natural Resources at UNR.
3. *Collaborative Research: Modeling, Variability and Predictability of North American Hydrologic Extremes*, National Science Foundation (2003-2006) – ATM-0231781 (**PI** –totals for UNR \$136,927, DRI \$46,264 and SIO about \$200,000). Collaboration between UNR, Scripps Inst. of Oceanography, and Desert Research Inst.
4. *Collaborative Research: Stochastic Methods for Fractional Partial Differential Equations*, National Science Foundation (2002-2005) –Focused Research Groups-Mathematics, DMS-0139927 (Sr. Personnel once moved to UNR. Co-PI at the initial funding time when I was still at DRI; about \$400,000). Collaboration between UNR and Desert Research Inst.
5. *Mathematics and Statistics Senior and Graduate Students' Computer Laboratory*, The Thelma and Thomas Hart Foundation, (**PI**- \$12,600), (2007).

6. *Antidegradation Water Quality Standards Analysis*, Nevada Department of Environmental Protection (2003-2004) (**Co-PI**, \$51,484).
7. *Developing a Shorezone Erosion Hazard Model: The Lake Tahoe Test Case*, National Science Foundation via EPSCOR Program (2001-2002), (**PI**, \$35k).
8. *Alternative Future Scenarios: Phase I Development of a Modeling System*, Department of Defense (2001-2002), (**co-PI**, \$100k).
9. Center for Health Care Strategies, Robert Wood Johnson Foundation, grant for design of a Medicaid Medical Management Information System replicable by managed care Medicaid plans in the US. Granted to BlueCross BlueShield Association. On-site (BCBST) PI responsibility, about \$100k. Collaboration with Northwestern University.
10. *American Association of University Women Summer Fellowship* (one of 6 fellowships awarded nationally, funded for Summer 1997). I could not accept the award because I moved to industry at that time.

RECENT INVITED PRESENTATIONS (presenter in bf)

1. *Sums and maxima of dependent Pareto risks and tests for exponentiality*, **A. K. Panorska**, M. Arendarczyk, T. Kozubowski, and F. Qeadan, International Workshop on Risk Analysis, Ruin and Extremes, July 14-16, 2014, School of Mathematical Science, Nankai University, China.
2. *A Discrete Generalization of Truncated Pareto and Power-function Distributions*, **A.K. Panorska**, T.J. Kozubowski, M. Forister, Flint International Statistical Conference, Kettering University, Flint, MI, June 24, 2014 – June 28, 2014
3. *What To Expect From a Graduate Program in Statistics – Possibilities, Opportunities, and Scholarships*, **A. K. Panorska**, Annual Meeting and Fall Symposium of the NV Chapter of the ASA, (October 12, 2013).
4. *Testing Exponentiality Versus Pareto Distribution via Likelihood Ratio*, **A. K. Panorska**, 6th CSDA International Conference on Computational and Financial Econometrics, Oviedo, Spain., Computational Statistics and Data Analysis. (December 2, 2012).
5. *Testing Exponentiality Versus Pareto Distribution via Likelihood Ratio*, **A. K. Panorska**, NV ASA annual meeting, American Statistical Association, UNLV. (October 6, 2012).
6. *Testing exponentiality versus pareto distribution via likelihood ratio*, **A. K. Panorska**, Math Science Department seminar, UNLV. (October 5, 2012).
7. *Trivariate Models for Stochastic Episodes with Applications to Hydrology, Climate and Finance*, A. K. Panorska, UC Davis Statistics Seminar series, UC Davis. (May 31, 2012).
8. *The joint distribution of the sum and maximum of exponential random variables with applications to biology*, **A. K. Panorska**, T. J. Kozubowski, F. Qeadan, European Conference on Mathematical and Theoretical Biology 2011. (July 2, 2011).

9. *Trivariate Models for Stochastic Episodes with Applications to Hydrology, Climate and Finance*, **A. K. Panorska**, T. J. Kozubowski, F. Qeadan, Centre for Mathematical Sciences seminar series, Lund University, Sweden. (June 10, 2011).
10. *Joint distribution of the sums and maxima of exponential random variables*, **A. K. Panorska**, T. J. Kozubowski, F. Qeadan, Warsaw Technical University, Poland. (March 2, 2011).
11. *Trivariate Models for Stochastic Episodes with Applications to Hydrology, Climate and Finance*, **A. Panorska**, with T.J. Kozubowski, F. Qeadan NATO- Fourth Workshop on Improving the Security of Communication Systems, Poland. (February 24, 2011).
12. *Trivariate Models for Stochastic Episodes with Applications to Hydrology, Climate and Finance*, **A. K. Panorska**, T. J. Kozubowski, F. Qeadan, Wroclaw University of Technology, Poland. (February 22, 2011).
13. *Joint model for geometric sums and maxima of exponentials*, **A. K. Panorska**, T. J. Kozubowski, F. Qeadan., Jagiellonian University, Mathematics Seminars, Krakow, Poland. (February 21, 2011).
14. *Stochastic Models for Weather Extremes*, **A. Panorska**, with T.J. Kozubowski, F. Qeadan. **World Climate Research Programme-UNESCO** Workshop on metrics and methodologies of estimation of extreme climate events, 27-29 September 2010, UNESCO headquarters, Paris, France.
15. *Stochastic Models for Weather Extremes: heat waves, cold spells, floods*, **A. K. Panorska**, Impacts of the Mediterranean Climate Change on Human Health, European Science Foundation – MedCLIVAR, Paphos, Cyprus (The Cyprus Institute). (October 20, 2009).
16. *Stochastic Models for Hydroclimatic Events- Sums and Maxima of iid Exponential Random Variables*, (Lecture), **A. K. Panorska**, T. J. Kozubowski, F. Biondi, F. Qeadan., Michigan State University, East Lansing, Michigan. (April 23, 2009).
17. *Stochastic Models for Hydroclimatic Events- Sums and Maxima of iid Exponential Random Variables*, **A. K. Panorska**, T. J. Kozubowski, F. Biondi, F. Qeadan., McMaster University, Hamilton, Canada. (April 20, 2009).
18. *Stochastic Models for Hydroclimatic Events-Extremes*, **A. K. Panorska**, T. J. Kozubowski, F. Qeadan., University of Tennessee, Knoxville, Knoxville, Tennessee. (April 2, 2009).
19. *What are the Chances of the next “Dust Bowl”-Stochastic Models for Hydroclimatic Events*, **A. K. Panorska**, T. J. Kozubowski, F. Qeadan., University of Alabama, Birmingham, Birmingham, Alabama. (March 25, 2009).
20. *Stochastic Models for Hydroclimatic Events*, **A. K. Panorska**, T. J. Kozubowski, F. Biondi, F. Qeadan, Indian Statistical Institute, Bangalore, India. (February 12, 2009).
21. *Stochastic Models for Hydroclimatic Events-extremes*, **A. K. Panorska**, T. J. Kozubowski, F. Biondi, F. Qeadan, Indian Statistical Institute, Kolkata, India. (February 10, 2009).
22. *Stochastic Models for Sums and Maxima of iid Exponential Random Variables: Modeling Growth and Decline Episodes*, **A. K. Panorska**, T. J. Kozubowski, F. Qeadan ESSEC-International Business School in Europe-Paris, (November 12, 2008).

23. *Joint Distribution of the Sum and Maximum of IID Exponential Random Variables*, , **A. K. Panorska**, T. J. Kozubowski, F. Qeadan, Sorbonne (Paris I), (October 30, 2008).
24. *Testing Exponentiality Versus Pareto Distribution via Likelihood Ratio*, , **A. K. Panorska**, T. J. Kozubowski, F. Qeadan, Université Paris Descartes (Paris V), (October 24, 2008).
25. *Random sums, heavy tails and the "Dust Bowl"*, **A. K. Panorska**, T. J. Kozubowski, F. Biondi, Department of Environmental Engineering, Division of Water Resources Management and Hydrology, Warsaw University of Technology, Warsaw, Poland.(June 14, 2004).
26. *Risk, random sums and heavy tails: stochastic models for extremes*, **A. K. Panorska**, T. J. Kozubowski, F. Biondi, International Institute for Applied Systems Analysis, Laxemburg, Austria. (June 23, 2004).
27. *Adventures of a Statistician*, **A. K. Panorska**, Nevada-ASA 2nd Annual Meeting and Career Day, UNR, (October 18th, 2003).
28. *Statistical Modeling, Interdisciplinary Modeling for Aquatic Ecosystems Curriculum Development Workshop*, **A. K. Panorska**, (July 19, 2005).

STATISTICAL CONSULTING - SERVICE DRIVEN RESEARCH AT UNR

2002- present. Consulted on numerous research projects in UNR and DRI as an expert in statistical and probability methods and modeling.

Fall 2004-Spring 2005. Interim Director, Center for Research Design and Statistical Methods. Organized and directed work of faculty and students consultants, and provided consulting services to clients.

Spring 2003. Faculty Consultant, Center for Research Design and Statistical Methods, UNR. Provided statistical consulting on numerous projects for clients from UNR, DRI and industry.

A sample of consulting projects, 2012 calendar year.

- Technical/Professional Work, Bob Blank, USDA, reno. USDA project
- Technical/Professional Work, Kate Pollard, Music Dept, UNR. analysis of survey data
- Technical/Professional Work, Kent Hoekman, Division of Atmospheric sci, DRI. Alternative fuel research
- Academic, Noah Frasier, Hydrology, UNR. (August 2012 - Present). Hydrology PhD project.
- Academic, Matt Forister, Biology, UNR. (March 2012 - Present). Statistical modeling in biology
- Academic, Paul Simmelink, Geography, UNR. (April 2012 - December 2012). Statistical analysis of GIS info.

- Academic, Giancarlo Sadoti, Geography dept, UNR. (March 2012 - December 2012). Geography PhD research.
- Technical/Professional Work, A. Kenneston, Emergency Mngt and Homeland Security, Reno. (October 2011 - December 2012).
- Technical/Professional Work, Joel Nelson, Financial Investments, analytical support for financial investments, Reno. (January 18, 2012 - May 1, 2012).

RESEARCH GRANTS REPORTS/SOFTWARE DEVELOPED

Truckee River Suspended Sediment TMDL Study – California State Water Resources Control Board, research project concerning sedimentation of the Truckee River.

Tahoe TMDL Project. Agreement No. 01-176-160-0; Lake Tahoe Basin Stormwater Runoff Monitoring to Assess Nutrient and Sediment Loading by Source and Land Use, Hydrologic Modeling, and Best Management practices Effectiveness and Feasibility Project. Multi-agency collaboration, investigators include: U.C. Davis-Tahoe Research Group (TRG), Desert Research Institute, Hydroikos, Tetra Tech, US Army Corps of Engineers and GeoSyntec Consulting.

SERVICE ASSIGNMENTS AND OTHER PROFESSIONAL ACTIVITIES

SERVICE ON UCCSN COMMITTEES

ACES Program - Member of the Internal Advisory Board: Development of the implementation plan for the ACES project. Fall'02, Spring'03.

ACES Program - Chair of the Working Group on Science and Policies: development of policies and procedures for awarding ACES grants/funding such as post docs, seed grants, graduate student support (both PhD and MS level), and matching funds for new faculty start-up packages; advertising the first round of competition for these funds, reviewing the proposals and recommending funding for 2003/2004. Fall'02, Spring'03.

OTHER UNR SERVICE

- **Represented UNR Graduate Council** at the Atmospheric Science program external review, (2013) and reported results to the Graduate Council.
- **Represented UNR Graduate Council** at the Hydrological Science program external review, and reported results to the Graduate Council. (2013 and 2014).
- **Recruiter** for math majors, college of science, reno and Las Vegas. (2012, and 2013).
- **Recruiter** for the NV Bound program, College of science. (2012 and 2103).
- **Guest Speaker**, CoS, SCI 110. (2012, 2013).
- **Coordination** of the Math/Stat dept web page content with Integrated Marketing. (2013)

- **Organizer** of the Math/stat Meet-and-Greet event for the faculty and students, Math and Stat dept. (2013).
- **Organizer** and host of the NV ASA statistics professionals and students Meet-and-Greet event. (2013)

SERVICE ON UNR COMMITTEES

- **Faculty Senate representative to the UCCC** (2014/2015)
- **Co-Chair**, UNR Academic Standards Committee (2013-2014).
- **Member**, UNR Graduate Council (2012-2013).
- **Represented UNR faculty senate** and advisors at the UNR's Registrar external review. (2013).
- **Reviewer** for the Honors Undergrad research proposals, Honors program, (2011), (2013).
- **Member**, LeMay teaching Awards committee, (2013)
- **Member**, Faculty Senate member (**elected**) (2012-present).
- **Member**, Graduate Orientation Panel. (2012).
- **Member**, Arboretum Board member (2011-2012).
- **Member**, Academic Standards Committee. (2009 - 2010).
- **Member**, International Activities committee. (2009 - 2010).
- **Member**, College of Science Personnel Committee, Fall'06-Spring 2009 (**elected**).
- **Member**, Bioinformatics Director Search Committee, Spring'07.
- **Member**, *Advisory Board of the UNR Statistical Consulting Service Unit*: Spring'03- Fall'03.
- **Member**, *Hydrology Program*: mathematics needs for graduate hydrology students, Fall'02.
- **Member**, Director of the Nevada Terawatt Facility search committee, Summer'02- Fall'02.

SERVICE ON UNR MATHEMATICS AND STATISTICS DEPARTMENT COMMITTEES

- **Graduate Program Director and Chair of the Graduate Committee** (2003-2004, and 2012-2014).
- **Chair**, Mathematics and Statistics Department Colloquium Committee (Fall 2009-2012).
- **Chair**, Mathematics and Statistics Department Future of Statistics Committee (2008-2009).
- **Chair**, Mathematics and Statistics Department Curriculum Committee (2007 and 2008-2009).
- **Member**, Mathematics and Statistics Department Assessment Committee (2008-2009).
- **Member**, Mathematics and Statistics Department PhD Committee (2008-2009).
- **Chair**, Statistics Search Committee (2007-2008).
- **Chair**, Statistics Search Committee (2005-2006).
- **Chair**, Statistics Program Committee (2005).
- **Member**, Chair Advisory Committee (2006-2007).
- **Member**, Chair Search Committee (2006-2007).
- **Member**, Assessment Committee (2007-2008).
- **Member**, Future of Statistics Committee (2004-2005).
- **Member**, Graduate Committee (2004-2005)
- **Member**, Strategic Planning Committee (2004-2005).
- **Member**, Applied Mathematics Search Committee (2002-2003).
- **Member**, Curriculum Committee (2003-2004)
- **Chair**, Lecturer Search Committee (2003).
- **Member**, PhD Program Development Committee (2003-2007).

- **Member**, Lecturer Search Committee (2005).

Service to national professional organizations

- Local organization of the Annual Meeting and Fall Symposium of the NV Chapter of the ASA, October 2012.
- Vice president, NV Chapter of the American Statistical Association January 2010- September 2012.
- Organized Annual Meeting and Fall Symposium of the NV Chapter of the ASA, October 2011.
- Refereed papers for various journals including Journal of Multivariate Analysis, Journal of Environmental Statistics, Communications in Statistics, Journal of Probability and Statistical Sciences, Information Sciences, Journal of American Water Resources Association and the Journal of the Air & Waste Management.
- Reviewed grant proposals for the National Science Foundation.
- Juror, INTEL ISEF 2009 - American Statistical Association. (2009).
- Guest speaker for the Career Day for the American Statistical Association (ASA) meeting in Reno, November 13, 2009.

Student Organizations

- Adjudicator/Juror for the Graduate Student Association: judging for the GSA awards in the Outstanding International Student competition, (2009).
- Judging students' presentations in the Student World Water Forum, 2009, 2012.
- Participated in the Welcome Reception for the WISE program students in August 2009.

Public/Community/Outreach

- K-12 Outreach. Dillworth middle school, Reno (2013). Presented a talk about the role of mathematics and statistics in research on water related issues, helped students with labs.
- Worker for the NV Food bank, UNR group, NV Food Bank service, December 2012.
- K-12 Outreach, CoS recruitment in Las Vegas. (2012).
- Conference Program Organizer, CoS-outreach, Math/Stat Career day. (2012).
- K-12 Outreach, Lyon County recruitment. (2012).