



Measurement is the backbone for advancing scientific research and creating new technologies. Experimental design, physical process characterization, modeling, components of variance analysis, interlaboratory studies, quality and uncertainty analysis are the foci for collaboration with leading researchers in physical science and engineering. Examples from 2000:

- Statistical measure of sharpness of scanning electron microscope images
- Statistical measure of propensity of cigarettes to ignite upholstery
- Calibration of electro-deposited coatings measured by magnetic induction

Modeling is the basis for collaboration with scientists and engineers to develop and evaluate techniques for measurement, to construct probabilistic models for physical processes and to tie measurement processes to accepted standards. Examples from 2000:

- Algorithms for testing integrity of random binary generators in cryptosecurity systems
- Comparison of biometric algorithms to identify an individual by gait
- Statistical models for polymer temperature and pressure during fabrication

Innovation in statistical methodology and in probabilistic modeling focuses on development of new general methodology and on specific cases beyond standard statistical modeling. Examples from 2000:

- Bayesian methods and inference for metrology
- Stochastic models for high-speed communication using optical fibers
- Statistical methods for feature extraction and pattern recognition in images

International Impact on statistics for standards, measurement and uncertainty draws on the distinguished history of statistics at NIST, beginning with Jack Youden and Churchill Eisenhart, on the role of NIST as the world's leading standards laboratory. and on the deep commitment of NIST to statistics as **fundamental** to its mission.

EXPANSION OF STATISTICAL ENGINEERING DIVISION at NIST

Multiple Vacancies ZP-1529-III/IV (\$42,724 - \$66,564 / \$68,090 - \$93,537) (GS11/12 - 13/14)

Statistical Engineering Division, Information Technology Laboratory, National Institute of Standards and Technology, Department of Commerce

Responsibilities: Direct collaboration with NIST scientists and engineers on modeling, measurement, calibration, process characterization and assessment in physical sciences, information technology and engineering. Statistical research to develop new methodologies, new computational and graphical representations for complex and/or high-dimensional data.

Requirements: Strong academic background, including modern data analysis and linear models, also communication skills. Additional statistical strength in experimental design, generalized linear models, Bayesian inference, statistical computation and/or graphics, stochastic processes is highly desirable. Curiosity or strong interest in a physical science is helpful.

Flexibility: NIST participates in flexitime and also offers part-time positions with benefits plus free parking, government benefits (healthcare options, retirement, Metro subsidy, continuing education).

Application: Applicants **must** request vacancy announcements (Vacancies NIST-01-1025/CAH, 01-1026/CAH, 01-1027/CAH) for specific position requirements, application instructions, quality ranking factors <http://www.nist.gov/jobs/>. For further information, see <http://www.itl.nist.gov/div898/> or contact Dr. N. Sedransk (301)975-2839. US Citizenship is **required**.

Cut-off dates are 16 February, 16 March; Closing (postmark) date is 20 April 2001.

The Department of Commerce/NIST is an Equal Opportunity Employment/Affirmative Action employer.

me•tro•logy \me-trä-lə-jē\ n [F *métrologie*, fr. Gk *metrologia* theory of ratios, fr. *metron* measure - more at MEASURE] (1816)
1 : the science of weights and measures or of measurement **2** : a system of weights and measures.

Since the establishment of National Bureau of Standards 100 years ago, statisticians have been at the center of the science of metrology.