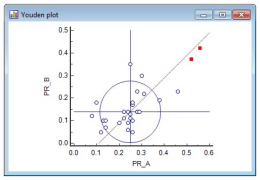
6/23/22
Jim Filliben

Statistical Engineering Division Arrivals/Activities/Awards

40's Arrivals (9+)	Activities	Awards (0)
Churchill Eisenhart 46-63 Julius Lieblein 47-56 Joe Cameron 47-68 Emil Gumbel 47-47 John Mandel* 47-00 Jack Youden 48-71 Henry Mann 49-49 Gerry Lieberan 49-50 Albert Bowker 49-49	pre-1947: Eisenhart poses idea of measurment as a production process with quality control and stat control, and predictability 1947 *Pub"The Assumptions Underlying the Analysis of Variance" (Eisenhart) (Eisenhart) ANOVA (Biometrics) 1947 SED founded 7/1/47 (Condon & Eisenhart) 1947 NBS lectures on extreme values (Gumble) 1947 Youden aftermath: SED put on overhead 1/2 (Condon) 1947 Focus: Sampling & test procedures (war impetus) 1948 Flaws found in famous chem papers (Youden) 1948 Project: Core sampling of baled wool (Boston) ASTM 1948 Project: Standardized clothing sizes from 7000 & 37 (pre-AD-X2, Draft Lottery, Alaska Pipeline, DST)	  Credits: 1: scihi.org 2. researchgate.net

50's	Arrivals (10+)	Activities	Awards (2)
	Mary Natrella 50-86 *Frank Proschan 51-52* *William Connor 51-54* *Richard Savage 51-54* *Willard Clatworthy 52-55* *Marvin Zelen 52-61* Carroll Croarkin 55-63,73-00 Joan Rosenblatt 55-95 Raj Chandra Bose 56,57,65 Harry Ku 59-98	*1950 Pub: "Index for Rating Diagnostic Tests", Cancer (Youden)* *1951: Book: "Statistical Methods for Chemists" Wiley (Youden)* *1951 Designs for Electronics division (Proschan)* *1951 Calibration designs created (resistors, thermometers, weights) (Youden,Connor)* *1951 Linked Block designs created for spectrometry (Youden)* *1952 PBIB designs published (Clatworthy)* *1953 * AD-X2 DOC controversy dealt with (DEX,Stat): 25 6-cell batteries to 16 to 32 3-cell to 16 pairs to 5,5,6 pairs on 3 charging lines (Youden,Cameron)* *1953 & 1954 Gumbel EV lectures & tables published (AMS # 22 & 33) (Lieblein)* *1953 Chain Block designs created (Youden,Connor)* *1954 to 1959: Youden write 36 bimonthly "Statistical Design" columns for Industrial and Engineering Chemistry* *1957/59/61 Booklets of Orthogonal Designs at 2, 3, and 2&3-levels published (Connor,Zelen)* *Youden talks* *eisenhart talks of youden: 4 design types*	*Eisenhart (1957,G) Div. Creator , DEX/Stat Methods, Author* *Mandel (1957,S) Stat Methods for NIST Testing & Research*    Credits: 1: lo9.com 2: NIST 3: Elsevier.com

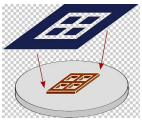
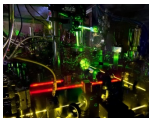
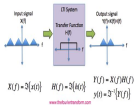
60's	Arrivals (7+)	Activities	Awards (5)
	Roy Wampler 63-80 Brian Joiner 63-73 Dave Hogben 64-81 Sally Peavy 65-92 Ruth Varner 65-93 Jim Filliben 69-... Shirley Bremer 69-99	1960 Pub: "The Sample, the Procedure, and the Laboratory", Anal. Chem. 32 (13), 23A 37A (Youden) 1961 *Pub: "Realistic Evaluation of the Precision & Accuracy of Intrument Calibration Systems" (34 p.) 0. process, 1. in stat control, 2 control repeatability & reproducibility, 3. formal uncertainty statement (Eisenhart)--inspiration for Cameron & Pontius MAP 1961 Pub: "Experimental Design and ASTM Committees", Mater. Res. Stand. 1, 862-867 (Youden) 1961 Pub: "How to Evaluate Accuracy" Mater. Res. Stand. 1, 268-271 (quantifying bias in interlab test methods) (Youden) 1961 Pub: "Systematic Errors in Physical Constants", Phys. Today 14 (9), 32-43 (quantifying bis in scientific measurements) (Youden) 1962 Talk: "The Collaborative Test" at the referees' 76th Annual Meeting of the Association of Official Agricultural Chemists, Washington, DC, 10/16/62 (revolutionary interlab ruggedness testing) (Youden) 1963* Book: "NBS Handbook 91: Experimental Statistics" (#2 NBS Bestseller, 5 languages) (Natrella) 1963 Pub "Extreme Value Test for Outliers" (Youden) 1964 1st NBS talk on MAP (Measurement Assurance Program) for weights (Cameron & Pontius) 1967 Pub: "Realistic Uncertainties and the Mass Meaurement Process: An Illustrated Review", NBS Mono. 103 (Cameron & Pontius) 1967 Book: "Statistical Techniques for Collaborative Tests" Association of Official Analytial Chemists (Youden) 1968 Pub: "Expressions of Imprecision, Systematic Error, and Uncertainty Associated with a Reported Value", Measurements & Data, 2 (4), 72-77 (Define accepted practices) (Ku) 1969 Book: "Precision Measurement and Calibration" [Selected NBS Papers on Statistical Concepts & Procedures], NBS SP300 (Ku)	Deming L (1960,S) Disseminate Stat Methodology to S,T,I Youden (1962,G) DEX, Stat, Lecturer, Author, AD-X2 Cameron (1963,G) Calibration Designs, Stat, AD-X2 Hilsenrath (1963,S) Omnitab Rosenblatt (1969,S) Stat Leadership, Adv. Stat Methods Applic. Youden (1965) Honorary Fellow of the Royal Statistical Society Youden (1969) Samuel S. Wilks Memorial Medal Youden (1969) Shewhart Medal of the ASQC   

Credits: 1. gruasyaparejos.com 2. medcalc.org 3. amazon.com

70's Arrivals (14+)	Activities	Awards (4)
Jim Lechner 70-95 Peter Tryon 70-82 Ray Sansing 71-?? Wes Nicholson 72-72 Janet Donaldson 73-86 Charlie Reeve 77-90 Dom Vecchia 78-?? Cliff Spiegelman 78-87 Keith Eberhardt 78-98 Grace Yang 79-99 Dennis Friday 79-?? Stefan Leigh 79-?? Walter Liggett 79-?? Jerry Sacks 79-80	1970s Heavy Omnitab usage at NBS (Hogben) 1970 * Draft Lottery (Rosenblatt, Eisenhart, Cameron, Stefan, Filliben) 1970 Pub on linear/multi-linear regression accuracy (Wampler) 1970 Brian Joiner founds Boulder SED group 1971 ASA Presidency (Eisenhart) 1971 Youden dies 1971 Entire edition of JQT, Jan 1972 devoted to Youden 197X 3 Youden 3 memorial awards established 1973 Alaska Pipeline project (Filliben) 1974 Joiner (Penn State): Omnitab => Minitab 1974 Book: "Risk, Choice, and Prediction: An Introduction to Experimentation" (Youden) 1974 Book: "Experimentation and Measurement" National Science Teachers Association. Vistas of Science (Youden) 1974 Daylight Saving Time project (Filliben) 1977 NBS hosts conference "Computer Science & Statistics : Symposium on the Interface " (Hogben) 1978 First of 20+ Experiment Design workshops for NIST staff & external (Filliben+) 1978 1st Dataplot lecture to NBS staff (Filliben) 1979 Pub: "Measurement Assurance for Gage Blocks", NBS NBS Monograph 163, (an early MAP: dimensional metrology) (Croarkin,Beers,Tucker)	Mandel (1973,G) Exp. Designs, Stat Methods, Book Ku (1974,S) Expert Uncertainty, Quality Control, MAP, Book Rosenblatt (1976,G) Draft Lottery, Gov. Tech. Leadership Hogben & Peavy (1977,S) Omnitab Eisenhart (1977) Wilks Memorial Medal    Credits: 1. reddit.com 2. alamy.com 3. amazon.com

80's

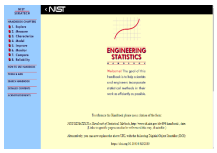
Arrivals (18+)	Activities	Awards (14)
Karen Kafadar 80-83	1980s Heavy Dataplot EDA Graphics & Non-linear Modeling Usage at NBS & Worldwide (30-country distribution) (120 institutions) (Filliben) <user's group>	Reeve (1980,Br) Calib. Prog. in Dimen. Metrology + MAP
John Rice 81-82		Ku (1981,G) Foundations of Uncertainty, Calibration, NIST MAP
Ingram Olkin 83-84		Tryon (1981,S) SED/ Boulder Lead/Exp , Atomic Clocks
Ray Carroll 84-89	1982 Pub: "Measurement Assurance for Dimensional Measurements on Integrated-Circuit Photomasks", NBS Technical Note 1164 (another early MAP: semiconductors) (Croarkin,Varner)	Filliben (1981,Br) Dataplot Language/System for Gr/Mod/An/Math
Hari Iyer 84-...		Natrella (1982,Br) Book: HB 91 : Exper. Statistics (NBS #2)
Alan Heckert 85-....		Croarkin (1982,Br) Fund. of NBS Calib. & MAP + NBS Mono. 163
Bob Lundgard 86-94		Varner (1982,Br) Stat SW all NBS MAP : Mass, Len, Pres, Temp
Herb David 87-93	1982 The Mandel-Paule statistic for consensus value Is introduced (Mandel,Paule)	Donaldson (1983,Br) Stat Computing: Starpac Package (Boulder)
Nancy Flournoy 87-87		Eberhardt (1983,Br) Methodology & Quality Throughput of SRMs
Charles Hagwood 87-21	1983 *Pub: "Expression of the Uncertainties of Final Measurement Results", NBS SP644 (a GUM (1993) forerunner) (Eisenhart, Ku, Colle)	Filliben (1984,G) Dataplot Language/System for Gr/Mod/An/Math
Sam Saunders 87-93		Lechner (1985,S) Optimal Calibration Strategies for LTI Systems
Susannah Schiller 87-97		Vecchia (1986,Br) SED/ Boulder Lead/Exp, VOR Ph. Meter Calib.)
Leon Gleser 88-95	1985 Pub: "A new analysis of interlaboratory test results". ASQC Quality Congress Transaction, Balt. 360-366. (Mandel h statistic for interlab outliers) (Mandel)	Croarkin (1987,S) NIST Calib. Serv.: Oriface Meters & O2 in Si
Robert Mee 88-97		Croarkin (1989,As) Leadership in NIST MAP
Eric Lagergren 88-99	1988 Pub: "Evaluation of a Copy-Prevention Method for Digital Audio Tape Systems ", NBSIR 88-3725 (Eberhardt)	Eisenhart (1983) becomes NIST Fellow
Jolene Splett 88-21		
Jack Wang 88-16		
Kevin Coakley 89-...		

Credits: 1. imgbin.com 2. gizmodo.com 3. thefouriertransform.com

90's

Arrivals (19+)	Activities	Awards (9)
Will Guthrie 90-... Mike Frey 90-91, 16-... Janos Galambos 90-97 Wayne Nelson 90-91 Robert Paule 91-91 Ker-Chau Li 91-91 Hung-Kung Liu 91-21 Lisa Gill 92-00? Nozer Singpurwalla 93-94 Mark Vangel 93-00 Mark Levenson 93-99? Nien Fan Zhang 94-... Andrew Rukhin 94-... Robert Easterling 94-94 Jayara Sethuraman 94-95 Lynne Hare 95-97 David Banks 97-99? James Yen 97-... Juan Soto 9?-??	1990s SRMs (Schiller,Eberhardt,Leigh) 1990 Pub on eddy current probes to detect cracks in medals (Splett,Iyer) 1991 Pub: "The validation of measurement through interlab studies" Chemometrics and Intelligent Laboratory Systems (Mandel k statistic for interlab outliers) (Mandel) 1991 The Schiller-Eberhardt statistic for consensus value Is introduced (Schiller,Eberhardt) 1992 Start of multi-year project on cigarette ignition propensity (Eberhardt) 1993 *Report given on multi-year effort to update and improve the long-standing (1968) but deficient international thermometry functions (Croarkin,Guthrie) 1993 NIST hosts conference "Extreme Value Theory and Applications" (Galambos,Lechner Leigh,Hagwood,Yang,Simiu) 1993 GUM: "Guide to the Expression of Uncertainty in Measurement", ISO, Geneva. (non-SED) 1994 Pub: "Guidelines for Evaluating and Expressing . Uncertainty of NIST Measurement Results", NIST Technical Note 1297, (Taylor & Kuyatt) (non-SED) 1994 Book: "The Analysis of 2-Way Layouts" (Mandel) 1996 Initial meetings between SEMATECH (Pat Spagon & Paul Tobias) & SED to pursue SEMATECH desire to jointly write a digital update to Mary Natrella's classic book : "NBS Handbook 91: Exprimental Statistics" (#2 NBS Bestseller, 5 languages) 1996 Pub: " Statistics and the Question of Standards " NIST JoR, **101,** 779-789 (Steve Stigler) (non-SED) 1997* StRd (Statistical Reference Datasets) (Croarkin,Guthrie,Zhang,Lagergren,Fagan,Gill, Rust,Van g el,Liu,Filliben,Donaldson) 1999 The Vangel-Rukhin statistic for consensus value introduced (Vangel,Rukhin) 1999 Stat methodology developed for image-based SRMs for SEMs for semiconductors (Zhang) 1999 Pub: "Statistical Testing of Random Number Generators " Proceedings of the 22nd NISSC (Soto) 1999 SED endures high level "administrative differences" resulting in devastating talented personnel losses : Lynne Hare, Mark Vangel, Mark Levenson, David Banks, Keith Eberhardt, Eric Lagergren, Lisa Gill	Schiller (1991,Br) SRM Methodology, Throughput,& Quality Eberhardt (1992,Si) SRM Methodology, Throughput,& Quality Croarkin & Guthrie (1994,As #2) Int. Thermom , Improv. ITS-90 Func Lagergren & Kacker (1994,Br) Optimal Exp. Design for Ceramics Leigh (1995,Br) Effective Stat Collab., Training, & Recruitment Liggett (1996,Ro) Accurate Determination of Rockwell-C Hardness Guthrie (1997,Br) Optimal Packaging of Semiconductor Materials Wang (1998,Br) Optical Fiber Polarization & SEM Image Sharp. Zhang (1999,S) Semiconductor Wafer Characterization     Credits: 1. kisbyto.blogspot.com 2. qc-services.com 3. NIST 4. hiclipart.com

00's	Arrivals (8+)	Activities	Awards (6)
	Nell Sedransk 00-06 Blaza Toman 00-... John Lu 01-... Ivelisse Aviles 01-09 Bill Strawdeman 01-xx Dennis Leber 02-xx Karen Kafadar 03-06 Sarah Street 04-04,15-17 Antonio Possolo 06-13	2000 Pub on improved metrology to trap ultra-cold neutrons, reducing uncertainty of mean lifetime estimate by by 10 to 100, and improving high-bandwidth optical fiber systems, digital oscilloscopes, & photodiodes (coakly) (Coakley) 2001 Book: "A Statistical Test Suite for Random and Pseudo random Number Generators for Cryptographic Applications" (3370 cit.) (Rukhin,Soto) 2002 NIST hosts conference: "Designs for General Linear Models" (Aviles) 2003? First of 30+ Uncertainty workshops for NIST staff & external (Guthrie,Liu) 2004 NIST hosts Spring Research Conference (xx) 2005 *Virtual Book: NIST/SEMATECH e-Handbook of Statistical Methods (3000 pages) (Google stat terms hits; 50 1st / 32 2nd / 16 3rd) (xxx page views/year for 17 years) (Croarkin,Filliben,Guthrie,Heckert,Zhang) https://www.itl.nist.gov/div898/handbook/	Liggett (2002,Fr) Int. Unification of Disparate Rockwell-C Scales <Croarkin>,Filliben,Guthrie,Heckert,Zhang (2003,S) e-Handbook Zhang (2004,S) Calib. Method.: Satellite Ocean-Color Sensors Leigh (2004,Br) NIST-wide SRMs, Consulting, & Stat Training Filliben (2005,G) World Trade Center Wang (2009,As) Time & Frequency Waveform Calibration  

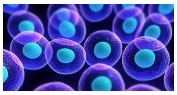
Credits: 1. NIST 2. planet.kerry.com

10's

Arrivals (5+)	Activities	Awards (17)
Adam Pintar 10-...	2010 Deepwater Horizon (Possolo,Toman)	Filliben & Leber (2010,G) NIJ Safety/Durability: Police Body Armor
Steve Lund 12-...	2010 NIST hosts Quality and Productivity Conference (Guthrie, VJ Nair)	Possolo (2010,G) Estimates of Areas for Illicit Coco Cultivation
Amanda Koepke 15-...	2015 1st Live SRM (NISTmAB)	Possolo & Toman (2011,S) Deepwater Horizon
Michael Frey 15-...	(Schiel+,Filliben,Heckert)	Filliben (2011,Br) Military Body Armor Testing & Safety
Peter Tonner 18-...	2015 NIST Uncertainty Machine (Possolo, LeFarge)	Filliben (2011,Br) Evaluation of Cell-imaging Segmentation Algs.
	2017 NIST Consensus Builder (Koepke, LeFarge, Possolo,Toman)	Splett & Wang (2014,S) Steel SRMs
	2018 Nature Pub: Bacterial Growth & MEIO (Min Info Std. for Engineered Organisms (Hecht,Filliben)	Coakley (2016,G) Loophole-free test of Bell's theorem
	2018 AI Research (Tonner/Pintar/Iyer)	Toman (2016,S) FDS: Fire Dynamics Simulator
	2019 NIST hosts Fall Technical Conference (Pintar)	Lund (2016,Fr) SRM 2373:DNA-based HER2 Protein: Cancer Diag.
	2019 ASA Presidency (Kafadar, alum)	Lund (2016,CC) Contrib. to Bio & Physical Science Programs
		Hagwood (2016,Br) Building Evacuation Reference Datasets
	201+ SRMs (Yen,Leber)	Samarov (2017,Fr) RM 8398: Human DNA: Whole-Gen. Variants
	201+ DHS Radiation Detection (Leber)	Lund (2017,Br) Assess Cell-counting Quality for Cellular Therapies
	201+ Forensics (Lund,Iyer)	Pintar (2018,G) U.S. Extreme Wind Speeds
	201+ *Bio	Toman (2018,Br) Processes for Determination of Chemical Purity
		Filliben & Leber (2018,Br) ASTM-F45: A-UGVs (Unman Gr Veh)
		Toman (2019,Br) Nanomaterial Cell-based Toxicity Assay Proc.
		Possolo (2014) becomes NIST Fellow



Credits: 1. news.vice.com 2. forensic-evidence.co.uk 3. wusfnews.wusf.usf.edu

20's	Arrivals (12+)	Activities	Awards (9)
Lucas Koepke 20-...		2021 SRMs upgraded protocol	Filliben & Lund (2020,G) SRMS for Biothreat Agents
Felix Jimenez 20-...		2022 Book: Measurement Uncertanty : A Reintroduction (Possolo,Meija) $7!	Iyer & Samarov (2020,G) Human Genome RMs (2.5B DNA bases)
Gregory Haber 20-...			Toman (2020,Fr) SRM for Concrete Rheometers (Viscosity)
David Newton 20-...		2022 NIST Decision Tree (Possolo,Koepke, Newton,Winchester)	Frey & Splett (2020,As) Spectrum Sharing : NASCTN
Mary Gregg 20-....			Frey & Splett (2020,Br) Emitted Power from LTE Cellular Devices
Gregory Stock 20-...		2022 NIST Abacus (Toman)	Iyer (2021,G) RGTM 10169: Covid Research Grade Test Material
Anuj Srivastava 20-...		2022 NIST 50 EDA Gallery (Filliben)	Iyer (2021,Fr) SRM 2391d: PCR-Based Profiling
			Toman (2021,Br) SRM 1898: Photocatalytics
Yong Ma 20-...		202+ Forensic s (Lund,Iyer)	Lu (2021,Br) Particle Size/Shape for Biotherapeutic Drugs
Caitlin Berry 20-...		202+ *Bio (...)	
Angela Folz 20-...			
Ankur Sahoo 20-...			
Mikela Waldman 20-...			