

Surveillance Research Program Bulletin

Web sites: surveillance.cancer.gov; seer.cancer.gov

Mission Statement

The Surveillance Research Program (SRP) directs the collection and analysis of pertinent data in order to answer key questions about cancer incidence, morbidity, mortality, and cancer-related health status in diverse regions and populations in the United States. As part of the SRP mission, the Cancer Statistics Branch manages the Surveillance, Epidemiology, and End Results (SEER) Program, an integrated, comprehensive, multiple population-based cancer registry system authorized by the National Cancer Act of 1971.

SRP also provides leadership, through its Statistical Research and Applications Branch, in developing statistical methodologies appropriate for analyzing trends and for evaluating the impact of cancer control interventions as well as geographic, social, behavioral, genetic, and health care delivery factors on the cancer burden.

An authoritative source of information on cancer incidence and survival, SEER currently collects and publishes data covering approximately 26 percent of the U.S. population. Established in 1973, the SEER Program provides the greatest longevity and highest level of standardization for population-based cancer information in the United States.

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Highlights

GIS Workshop Report

The November 2006 *International Journal of Health Geographics* includes a review of the Geographic Information Systems (GIS) workshop entitled, *The Crossroads of GIS and Health Information: A Workshop on Developing a Research Agenda to Improve Cancer Control*. This workshop, held June 16–17, 2005, was organized jointly by the Division of Cancer Control and Population Sciences (DCCPS), of the National Cancer Institute (NCI), and the National Library of Medicine (NLM). The summit brought together GIS experts and stakeholders to address current issues in GIScience and cancer control. Eighty-five individuals attended, representing the federal, state, cancer registry, academic, and cancer advocacy communities. A broad range of areas of expertise and interest were represented, including epidemiology, geography, statistics, environmental health, social science, cancer control, cancer registry operations, and cancer advocacy. The goals of this workshop were to: build consensus on important policy and research issues concerning GIScience, identify barriers to future progress in the field, and provide recommendations on overcoming these barriers.

“This workshop was an excellent first step in bringing together researchers and cancer control experts from a variety of areas to identify the needs of the cancer control community,” stated Linda Pickle, Ph.D., a mathematical statistician in the Surveillance Research Program (SRP) and organizer of the 2005 GIS workshop.

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“This workshop facilitated cross-fertilization of ideas, which continues among attendees today. This workshop also identified potential partners for this work, such as the National Science Foundation, which already has held two workshops on GIS topics and, with NCI, seeks to hold periodic, in-depth workshops on specific GIS-related topics.”

For more information on upcoming workshops and training sessions and GIS-related research, visit www.gis.cancer.gov.

New State Cancer Profile Features

Starting in January 2007, the State Cancer Profiles Web site was updated to include new incidence rate maps and a more complete set of demographic and socioeconomic data from the U.S. Census, including state and county-level data on income, education, poverty, foreign-born populations, and migration. The incidence rate maps were added to the interactive mapping section of the State Cancer Profiles Web site. These maps provide cancer control planners with a valuable tool for examining the spatial patterns of cancer incidence in addition to cancer mortality, especially those planning interventions related to modifiable risk factors and cancer screenings.

State Cancer Profiles are located at <http://statecancerprofiles.cancer.gov>. This site is part of a collaborative effort by NCI and the Centers for Disease Control and Prevention (CDC) to provide cancer control planners and policymakers with dynamic views of cancer statistics to help prioritize cancer control efforts at the National, state, and county levels. The State Cancer Profiles Web site is part of the Cancer Control PLANET portal. Information found on this site can help planners, program staff, and researchers design, implement, and evaluate evidence-based cancer control programs to achieve the overall goal of reducing cancer incidence in the United States.

New Monograph

New Malignancies Among Cancer Survivors: SEER Cancer Registries, 1973–2000

This monograph describes and quantifies the risk of developing new malignancies among more than 2 million cancer survivors. Data used in this analysis, the largest of its kind to date, are from NCI’s Surveillance, Epidemiology, and End Results (SEER) Program cancer registries and span the time period from 1973 to 2000. The monograph provides data on the risks of subsequent malignancies for more than 50 adult and 18 childhood cancers, including new data on uncommon sites and individual histologic types. NCI researchers systematically examined the risks of subsequent cancers by gender, age at diagnosis of the initial cancer, and time since diagnosis, as well as the initial treatment and histologic type of certain cancers. The publication is divided into chapters and organized according to the initial site of cancer, with each chapter comparing the patterns of multiple cancers with findings from other studies. Results are discussed in terms of potential risk factors and mechanisms. Appendices provide cumulative incidence rates and pertinent definitions.

Curtis RE, Freedman DM, Ron E, Ries LAG, Hacker DG, Edwards BK, Tucker MA, Fraumeni JF Jr. (eds). *New Malignancies Among Cancer Survivors: SEER Cancer Registries, 1973–2000*. National Cancer Institute, NIH Pub. No. 05-5302. Bethesda, MD, 2006.

Available online at <http://seer.cancer.gov/publications/mpmono/>. A printed copy may be requested from the same URL or by calling 1-800-4-CANCER.



Employment Opportunities

NCI is inviting applications for several positions within SRP, DCCPS. Candidates for all positions must demonstrate a strong record of analytical and methodological research and scientific collaboration. U.S. citizenship or permanent residency are required for federal positions. HHS and NIH are equal opportunity employers. Salary is commensurate with experience, and the positions are located in Rockville, MD, near Washington, DC. For each position, send a letter summarizing your experience and interests and a complete CV, including the names of three references, by electronic mail to the listed contact.

Positions in Geographic Information Systems (GIS) and Spatial Statistics

SRP has an active program of research in GIS, the statistical analysis of spatial and temporal patterns of cancer, and spatial data visualization (<http://gis.cancer.gov/>). Opportunities exist for collaboration and leadership in the areas of geographically related analysis throughout NCI and with other NIH Institutes, other federal agencies, and the extramural research community.

- The Cancer Surveillance **Geographer** will provide expertise in geography, GIS, and spatial analysis.

Requirements: A master's degree or Ph.D. in geography or a related field and at least 5 years' experience in geographic research, including (but not limited to) GIS, disease mapping, spatial analysis, and geocoding. Experience with ArcGIS, spatial analysis software, and cancer registry data is highly desired.

- The mid- to senior-level **Spatial Statistician** will lead SRP staff involved in geographically related areas of statistical research and applications.

Requirements: A Ph.D. in biostatistics or a related field and at least 7 years' experience in spatial statistical methods applications and research, with an emphasis on model-based methods. Experience in one or more of the following areas also is desirable: disease rate mapping, geovisualization, GIS, and cancer registry data analysis.

Contact: Dr. Eric Feuer, Chief, Statistical Research and Applications Branch, rf41u@nih.gov

Statistician in Population Genetics

SRP is in the process of expanding its program in the area of statistical genetics to include topics such as linkage analysis, genome-wide association studies, and the examination of gene-environment interaction. The position's responsibilities include (1) oversight and administration of extramural funding involving cutting-edge statistical genetics to address methodologic questions in cancer epidemiology and (2) developing a program of scientific research relating the rich resource of population-based cancer registries to genetic-based epidemiologic studies and basic statistical research.

Requirements: A doctoral degree in biostatistics or statistics, 3–10 years of postdoctoral experience with a good publication record in developing methods in population genetics, and an interest in working in collaborative research teams.

Contact: Dr. Ram Tiwari, Statistical Research and Applications Branch, tiwarir@mail.nih.gov

Chief, Cancer Statistics Branch (CSB)

NCI is accepting applications for the position of Chief, CSB, to provide leadership for its program of researching and reporting public health data. SEER has served as a premier resource for decisionmaking related to cancer for more than 30 years. The challenges of the next decade include changes in infrastructure, resources, and policy, such as the expansion of information technology systems for data management and e-Health applications.

Requirements: A doctoral degree and experience in biostatistics, management of multicenter research studies, and organization of collaborative biomedical research. Achievements within professional or other collaborative organizations through participation in and leadership of goal-oriented groups and committees. Experience in epidemiology, operations research, and cancer research is desired. Analytic skills also are required, as demonstrated by articles published in peer-reviewed journals. Knowledge of computer systems and software development is desirable.

Contact: Judith Swan, MHS, Surveillance Research Program, js60y@nih.gov

Positions in Mathematical Statistics and Biostatistics

NCI has several positions available within the SEER Program. Each position includes responsibility for initiating and managing collaborative analyses with scientists from NCI and other Institutes, agencies, and academic centers. Current openings include a **Senior Mathematical Statistician** (minimum 4 years' postdoctoral experience) and a **Biostatistician** (minimum 2 years' postdoctoral experience).

Requirements: A doctoral degree is required, along with relevant postdoctoral experience.

Contact: Judith Swan, MHS, Surveillance Research Program, js60y@nih.gov

For further information on all positions, see:

<http://surveillance.cancer.gov/>

<http://seer.cancer.gov/>

<http://srab.cancer.gov/>

Training Opportunities

NCRA 2007 Annual Conference

The National Cancer Registrars Association (NCRA) will hold its 33rd annual conference April 22–25, 2007, at the Las Vegas Hilton in Las Vegas, NV. The theme of this year's conference is "Rolling Out Big Advances through Research, Professionalism, Education, and Advocacy," and the agenda includes training on Multiple Primary and Histology, SEER workshops, special interest group (SIG) meetings, Commission on Cancer/American Joint Committee on Cancer (CoC/AJCC) lectures, and sessions relating to data collection, research, and cutting-edge cancer treatments. For more information on this meeting, including registration information, visit <http://ncra-usa.org/conference/program.htm>.



2007 NAACCR Annual Conference



Detroit

The 2007 Annual Conference of the North American Association of Central Cancer Registries (NAACCR) will be held June 2–9, 2007, in Detroit, MI. The theme of this year's conference is "Cancer Knows No Borders," and it will focus on the international scope of NAACCR and its members as well as integration of the numerous specialties and disciplines that are involved in cancer registration, treatment, and research. The conference will be held at the Detroit Marriott at the Renaissance Center. Registration information may be found on the NAACCR Web site at <http://www.naacrr.org>.

Multiple Primary and Histology (MP/H) Coding Rules Online Breeze Web Casting

Registrars can access MP/H Breeze-recorded Web cast training sessions on the SEER Web site, <http://www.seer.cancer.gov/tools/mphrules/training.html>. Training modules can be accessed at any time of day. There is no fee, and no password or permission are needed to view the sessions.

The first session is an introduction that teaches participants how to use the rules and covers all of the general rules. Each of the site-specific rules is presented in two parts: a lecture and a practicum. Cases for the practicum are accessible at http://seer.cancer.gov/tools/mphrules/online_training.html. Continuing Education Units (CEUs) are available on completion of each module.

Scheduled 2007 MP/H Coding Rules sessions cover the following topics, and all sessions will be available on the Web site by May 2007:

Head and Neck Rules
Head and Neck Practicum
Other Sites
Other Sites Practicum
Kidney Rules
Kidney Practicum
Bladder, Ureter, and Renal Pelvis Rules
Bladder, Ureter, and Renal Pelvis Practicum
Melanoma Rules
Melanoma Practicum
Brain Rules
Brain Practicum
New Data Items
New Data Items Practicum

Contact Antoinette Percy-Laurry at percyl@mail.nih.gov with questions regarding this training.

SRP Staff News

Linda Pickle Retires From NCI

Linda W. Pickle, Ph.D., retired from SRP on February 1, 2007, after more than 30 years of service to the cancer research community. Dr. Pickle spent the majority of her career at NCI working in various statistical capacities, most recently having served as a senior mathematical statistician and as the coordinator of Geospatial Research and Applications in the Statistical Research and Applications Branch (SRAB).



Linda W. Pickle, Ph.D.

Dr. Pickle first came to NCI in 1977 with a doctorate in biostatistics from Johns Hopkins University, as a biostatistician in the Environmental Epidemiology Branch. During her time in what is now the Division of Cancer Epidemiology and Genetics (DCEG), she was the project leader and first author of the *Atlas of U.S. Cancer Mortality among Whites: 1950–1980* and the *Atlas of U.S. Cancer Mortality among Nonwhites: 1950–1980*. These were the first mortality atlases to show maps by time and to present the results of statistical modeling of the data.

In 1988, Dr. Pickle left NCI to launch the biostatistics unit of the Vincent T. Lombardi Comprehensive Cancer Center at Georgetown University. She went on to join the National Center for Health Statistics (NCHS) in 1991. During her time at NCHS, Dr. Pickle and colleague Dr. Douglas Herrmann co-directed a research program on the cognitive aspects of statistical mapping. This project was completed in collaboration with researchers from across the United States. Results of this research were used to design the new *Atlas of United States Mortality*. This atlas was the first of its kind to use statistical modeling in the background and to produce age-specific mortality rates based on modeled data. This publication received both the 1996 CDC Health Communications Award for Overall Presentation and Effectiveness in Print Communication and the 1997 International Blue Pencil Award from the National Association of Government Communicators for best illustrated book of the year. Additionally, the authors received the 1997 CDC Honor Award for Statistical Research Services “for outstanding contributions in spatial data

analysis and in the field of public health, and for furthering CDC’s mission by producing the first U.S. Mortality Atlas.”

After rejoining NCI in 1999, Dr. Pickle established a strong program of geospatial analysis and GIS. Her contributions include developing NCI’s GIS Web site to serve as a central source of information about GIS and related resources (www.gis.cancer.gov) and developing the GIS special interest group in 1999 to discuss issues related to the collection, analysis, and dissemination of georeferenced cancer data. She has contributed further to the field by working with outside researchers at numerous educational institutions to bring advanced GIS tools into the public domain. Dr. Pickle’s recent work includes developing spatial and temporal models to provide a complete view of cancer incidence data across the United States, including areas where data are incomplete, as well as predicting further trends. These methods are being adopted by the American Cancer Society (ACS) and will be used in the ACS annual report of U.S. cancer cases in January 2007 and by the North American Association of Central Cancer Registries (NAACCR) to assess the completeness of cancer registry data in the United States and Canada.

Dr. Pickle departs NCI with an impressive history of accomplishments, including being the recipient of the 1997 NCHS Elijah White Award “for outstanding contributions to science, the NCHS mission, and the field of public health; consummate professionalism and dedication to duty; and leadership among her peers,” and the NIH Merit Award in 2001 for leadership in GIS. Additionally, she received the 2001 Hammer Award from the National Partnership for Reinventing Government and in 2004 was voted one of the 2,000 Notable American Women. Dr. Pickle has authored or co-authored more than 120 research articles.

With her newfound time, Dr. Pickle will undertake a new venture in creating “StatNet Consulting” with her husband, Jim Pearson. StatNet will specialize in computer network and statistical consulting; information on these services will be available at www.statnetconsulting.com beginning in February.

“Linda is a unique statistician with expertise in three key areas: statistical analysis, especially complex multivariate regression; geospatial methodology; and data visualization. Most importantly, we will certainly miss her scientific leadership in surveillance research at NCI.”

—Brenda Edwards, Ph.D., Associate Director, SRP

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—Brenda Edwards, Ph.D., Associate Director, SRP

Dr. Rocky Feuer Named President-Elect of ENAR



Eric J. "Rocky" Feuer, Ph.D.

Eric J. "Rocky" Feuer, Ph.D., recently was named president-elect of the Eastern North American Region (ENAR) of the International Biometric Society. ENAR supports the advancement of biological sciences through the development of quantitative theories and the application, development, and dissemination of effective mathematical

and statistical techniques. Elected by his peers, Dr. Feuer will serve a 3-year term in this position.

After receiving his Ph.D. in biostatistics from the University of North Carolina at Chapel Hill in 1983, Dr. Feuer became Chief Statistician for the Cancer Center at Mount Sinai School of Medicine in New York. He joined NCI in 1987, and subsequently became head of the Surveillance Modeling and Methods Section in the Division of Cancer Prevention and Control. Dr. Feuer's goals since joining NCI nearly 20 years ago have been to make cancer statistics more rigorous, understandable, and engaging. He is particularly interested in the role of statistics and modeling in shaping public policy and will facilitate a roundtable discussion on this topic at this year's ENAR meeting.

Dr. Feuer has been Chief of SRP's SRAB since 1999. He has been recognized for his work in advancing statistical methods to interpret national cancer statistics, including having received the NIH Director's Award in 1999. More recently, he was part of a team that received the NIH Group Merit Award for the "development of new methods and software in population-based survival statistics."

Awards



Ram C. Tiwari, Ph.D.

Ram Tiwari Receives 2006 NIH Award of Merit

Ram C. Tiwari, Ph.D., a mathematical statistician in the SRAB, was awarded the 2006 NIH Award of Merit for "exceptional leadership in the scientific coordination of the NCI statistical grants portfolio."

Dr. Tiwari has managed the grants portfolio since 2001 and oversees the submission, review, and awarding of statistical grants. In this role, he interacts frequently with grantees to provide advice on proposal preparation and identification of appropriate funding mechanisms. "Working with the grantees has been very rewarding to me," Dr. Tiwari explained, "not just to get to know them, but to understand their high quality of work."

Honored to be recognized for his contribution, Dr. Tiwari explained, "I came to SRP/DCCPS with the objective of developing the Division's statistical methodology grants portfolio, to help the extramural statistics community. This award was recognition of my hard work toward that." He also acknowledged the role played by senior staff in the Division in successfully managing the grant portfolio. "This would not have been possible without their support."

SRAB Staff Awarded 2006 NIH Group Merit Award



Ram Tiwari, Ph.D.,
and Angela Mariotto, Ph.D.

The 2006 NIH Merit Award was presented to SRAB for "development of new methods and software in population-based survival statistics." The group includes Eric J. "Rocky" Feuer, Ph.D., Chief of SRAB, Kathleen Cronin, Ph.D., Angela Mariotto, Ph.D., Ram C.

Tiwari, Ph.D., all members of SRAB, and Binbing Yu, Ph.D., of IMS, Inc.

Recent projects undertaken by this group include adapting existing methods and developing new methods to present survival estimates. The "period method" was adapted for use with SEER data and made available to the public by incorporating it into the SEER*Stat analytic software. Additionally, a new "projection method" developed by this



Binbing Yu, Ph.D., John Niederhuber, M.D., Eric J. Feuer, Ph.D., and Kathleen Cronin, Ph.D.

research team has resulted in improved prediction of long-term survival. These two efforts allow for more up-to-date estimation of survival, of great interest to newly diagnosed patients.

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The group also developed CANSURV, a software package released in 2005 that allows the modeling of population-based survival data that fit survival cure models to registry data to estimate the proportion of patients cured of their disease. The availability of this tool facilitates the use of various cure models and allows researchers to closely examine how survival is changing over time. A prototype for a Web-based "Survival System for Clinicians" also was developed to make SEER survival data more accessible to clinicians and to facilitate outcome predictions regarding death due to cancer and other causes, while taking into account a patient's co-morbid conditions. Making these tools widely available will allow SEER survival information to be used in ways that are most relevant for patients and physicians alike.

These recent projects have resulted in significant progress in the use and presentation of survival statistics and have greatly enhanced the understanding of cancer survival statistics. "The tools that are now becoming publicly available represent years of effort in modeling survival," said Dr. Kathy Cronin, Ph.D., an SRAB mathematical statistician. "It certainly was an honor to be recognized for our work."

NCI Awarded 2006 Vision Award

NCI was awarded the 2006 Vision Award for its ongoing GIS Database Development program, innovative spatial data analysis, development of geovisualization tools, and communication of georeferenced statistics. This award is presented by ESRI to the organization that has gone beyond the traditional use of GIS within a health or human services organization and was accepted on behalf of NCI by Dave Stinchcomb, M.A./M.S., an SRP geographer. ESRI is a world leader in designing and developing GIS technology and encourages innovative applications in public health.



Linda W. Pickle, Ph.D.,
and Dave Stinchcomb,
M.A./M.S.

"We are deeply honored to receive this award," said Linda W. Pickle, Ph.D., senior mathematical statistician and Coordinator of Geographic Research in SRP. "NCI has long recognized that cancer rates vary geographically, ever since the first county-level cancer atlas was published in 1975. As tools for spatial analyses have become more widely available, such as for cluster identification and spatial statistical modeling, we have incorporated them into our standard analytic practices. Place is important for cancer studies because of geographic differences in environmental exposures, cultural attitudes toward risky behaviors and preventive health care, local public health policies, availability of services by socioeconomic level, and the means by which residents obtain health information. Because of this, GIS is now a primary tool for NCI staff."

New Hires

Rose Fredua Joins SRP

Rose A. Fredua joined SRAB as a Program Analyst in December 2006. Ms. Fredua comes to SRP from Rutgers University, where she served as the Senior Department Administrator in the Department of Chemistry. In this position, Ms. Fredua was responsible for managing and monitoring budgeted lines of various research grants for appropriateness of expenditures and fiscal and federal compliance. Prior to that, she was the Division Coordinator for the California Family Health Council's Clinical & Community Health Programs Division, where she was responsible for the administrative management of the disbursement of federal funds and grants-related activities for the delivery of health services to community-based organizations throughout California.

Excited to join the SRAB staff, Ms. Fredua will perform a variety of consultative and analytic roles such as liaison, planning, organizational leadership, program evaluation, grants and financial management, and procurement. In addition to her professional activities, Ms. Fredua enjoys cooking, reading, and travel.

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Lois A. Dickie, C.T.R.

Lois Dickie Joins SRP

Lois A. Dickie, C.T.R., will join SRP as a Public Health Analyst with the SEER Program in February 2007. Ms. Dickie has more than 21 years of cancer registry experience, most recently serving as the Special Studies Supervisor for the SEER and New Mexico Tumor Registry (NMTR) Quality Control Task Force. At NMTR,

Ms. Dickie was responsible for developing a quality improvement program within the registry using methods developed by the SEER Program, in addition to being involved in SEER audits performed on the Kentucky, Greater California, and Hawaii Registries.

Ms. Dickie is an active member of the National Cancer Registrars Association (NCRA). During her free time, she enjoys fly and deep sea fishing as well as traveling. She also is an avid mineral collector. This hobby often takes her below the earth, deep into mines, as she searches for the perfect specimen. Her mineral specimens currently are displayed throughout the United States, including in such renowned museums as the Smithsonian, Harvard, and Carnegie Mellon Museums of Natural History.

Jennifer Ruhl Joins SRP



Jennifer L. Ruhl, B.B.A.,
R.H.I.T., C.T.R.

Jennifer L. Ruhl, B.B.A., R.H.I.T., C.T.R., joined SRP in January 2007 as a Public Health Analyst in the Cancer Statistics Branch Quality Control group. Ms. Ruhl has served as an Oncology Program Coordinator for the past 6 years at the Southeast Georgia Health System, while also working as a contract tumor registrar at Wayne Memorial Hospital. Prior to her positions in the cancer registry

field, Ms. Ruhl spent several years in Atlanta assisting in behavioral research studies with the American Cancer Society.

Ms. Ruhl received her bachelor's degree in business administration from Georgia State University, is a Certified Tumor Registrar (C.T.R.) with the NCRA, and a Registered Health Information Technician (R.H.I.T.) with the American Health Information Management Association. Other job-related duties included involvement with the Georgia Tumor Registrar's Association, where she served as historian for 2 years and vice president for 2 years. She also was the team captain for the hospital's Relay for Life team for several years. Away from the office, Ms. Ruhl enjoys needlework, cycling, and spending time with her three cats. She also enjoys singing and is in search of local choirs to join.

Grantee Profile

Ross L. Prentice, Ph.D.

Fred Hutchinson Cancer Research Center



Ross L. Prentice, Ph.D.

Ross L. Prentice, Ph.D., Member, Fred Hutchinson Cancer Research Center, Division of Public Health Sciences, was awarded competing renewal of his Program Project entitled "Statistical Methods for Medical Studies." Dr. Prentice and colleagues have contributed novel research methodologies for population aspects of cancer in a

number of areas supported by this P01 from 1986 to the present. These include: (1) case-control designs and

other "within-cohort" sampling procedures for the efficient study of biomarkers related to disease risk; (2) a definition and operational criteria for "surrogate" outcomes that may replace a clinical outcome for intervention evaluation; (3) methods for readily interpreted analyses of multivariate outcome data, including censored failure time outcomes; (4) reliable and interpretable methods for the analysis of genetic epidemiologic family case-control studies; (5) an assessment model and analysis methods to relate nutrient consumption self-report data and nutrient biomarker data to disease risk; and (6) study design methods for high-dimensional genomic and proteomic data. These latter topics are the major research focus in upcoming years, with motivation from the Women's Health Initiative randomized controlled trial and cohort study and from NCI's Early Detection Research Network studies, among other sources.

New SRP Publications

Freedman M, Miller BA, Tucker MA. New malignancies following melanoma of the skin, eye melanoma, and non-melanoma eye cancer. In: Curtis RE, Freedman DM, Ron E, Ries LAG, Hacker DG, Edwards BK, Tucker MA, Fraumeni JF Jr, eds. New malignancies among cancer survivors: SEER cancer registries, 1973-2000. National Cancer Institute, NIH Pub. No. 05-5302. Bethesda, MD, 2006.

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Tiwari RC, Clegg L, and Zou Z. Efficient interval estimation for age-adjusted cancer rates, *Stat Methods Med Res.* (in press).

Yu B and Tiwari RC. Application of EM algorithm to regression models for population-based survival data with a cure fraction. *J Data Science.* (in press).



SEER Registry Staff News

2006 SEER Manager and PI Meeting

The 2006 Surveillance, Epidemiology and End Results (SEER) Program Managers and Principal Investigators (PI) Meetings were held November 15-17, 2006, at the William F. Bolger



William F. Bolger Center

Center for Leadership Development in Potomac, MD. This meeting brought together more than 90 individuals from NCI's Division of Cancer Control and Population Sciences (DCCPS) and SEER's 18 cancer registries to discuss issues in cancer surveillance and to hear presentations on exciting advances within the field.

The SEER Manager and PI meetings sought to highlight new research tools in the field, update SEER registry staff on the implementation of the SEER Data Management System (SEER*DMS) in additional registries, and discuss the November 2006 data submissions by the registries. Additionally, quality control awards were presented to various registries, and time was allotted for young investigators to present their research in the field of cancer surveillance.

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Margaret (Peggy) Adamo, R.H.I.T., C.T.R., led the SEER managers meeting and was extremely pleased with the outcome. She stated that, "This annual meeting allows our SEER staff to come together for a chance to interact on a more personal level that could not be achieved otherwise." These meetings "facilitate an exchange of ideas and the sharing of expertise; they provide the opportunity to network with others in the field, and build a strong program foundation centered in teamwork." Ms. Adamo believes that opportunities such as these actively "support and strengthen our SEER family and further the ultimate program goal of producing the highest quality cancer surveillance data possible."

Mark Goodman to Chair NIH Center



Mark Goodman, Ph.D.

Mark Goodman, Ph.D., a researcher and professor at the Cancer Research Center of Hawaii and Principal Investigator of the Hawaii Tumor Registry, has been selected to chair the NIH Center for Scientific Review (CSR), Epidemiology of Cancer (EPIC) Study Section from July 1, 2006, through June 30, 2008. Members of this committee are selected on the basis of their demonstrated competence and achievement in their scientific discipline.

The CSR is the portal for NIH grant applications and their review for scientific merit. The EPIC study section reviews applications on epidemiologic studies in the areas of cancer, specifically including characteristics of the distribution of cancer in human populations in relation to time, place, and personal characteristics; development and improvement of research designs and methodologies addressing epidemiologic questions in cancer; and elucidation of the determinants of cancer based on individual exposures.

"I am honored to have been selected chairman of EPIC," stated Dr. Goodman. "The overriding concern for all of us involved in cancer research is budget. There are dwindling research dollars and a huge increase in the application pool. This is particularly disillusioning to new investigators. I fear that there may be a whole cohort of potential young scientists who "throw in the towel" and are lost to other fields. I stress that [at EPIC] we are not grading grantsmanship, but rather the science, and we should avoid the tendency to be hypercritical, especially with first-time applicants. We all hope this budgetary trend is reversed soon."

The Hawaii Tumor Registry has been part of the SEER Program since its inception in 1973. Under the leadership of Dr. Goodman, the Hawaii Registry has been recognized in recent years for its submission of high-quality cancer data to the SEER Program. This award recognizes cancer registries in the United States and Canada that demonstrate the highest standards of data quality, judged by timeliness, completeness, and accuracy.



SEER Registry Staff Profiles

Charles F. Lynch, M.D., Ph.D. Iowa Cancer Registry

Charles F. Lynch, M.D., Ph.D., is the Principal Investigator (PI) of the State Health Registry of Iowa (SHRI) and Professor of Epidemiology and Pathology at the University of Iowa (UI). Dr. Lynch has been involved with the SEER Program since 1980 and assumed P.I. status in 1990. Under his leadership, the SHRI has expanded dramatically; the registry is estimated to have provided 11.4 percent of the total SEER cases since 1973.



Charles F. Lynch, M.D., Ph.D.

After receiving his M.S. in preventive medicine from UI, Dr. Lynch received his M.D. and his Ph.D. in epidemiology from UI. After completing a residency in anatomic pathology, he joined the faculty in the Department of Preventive Medicine and Environmental Health as an assistant professor in 1988. In 2000, he was appointed associate head of research of the epidemiology department in UI's College of Public Health, the 11th UI college designated as such in 1999. During his career, Dr. Lynch's major research interests have included population-based

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research that involves cancer surveillance and cancer epidemiology, cancer pathology, and environmental epidemiology.

Dr. Lynch is also Iowa director of the Agricultural Health Study, a prospective cohort study that is a collaborative effort supported by NCI, the National Institute of Environmental Health Sciences (NIEHS), and the U.S. Environmental Protection Agency (EPA). The study began in 1992 and continues to gather health information on 90,000 private and commercial pesticide applicators and their spouses in North Carolina and Iowa to determine the effects of agricultural exposures on chronic disease. These two states were selected out of a nationwide competition, and Dr. Lynch readily acknowledges that the SHRI was a major factor contributing to Iowa's inclusion in this study. (For more information on the Agricultural Health Study, visit www.aghealth.org.)

Dr. Lynch firmly believes in the SEER program and the importance of cancer surveillance in the fight to reduce cancer morbidity and mortality in the United States. The biggest challenge he sees, however, is ensuring that the data are utilized. "These data are population-based, cover large geographic areas, and represent a significant portion of the U.S. population," he explained. "They provide a case-finding mechanism that is attractive for conducting research. The data also are very valuable for assessing cancer burden and trends over time for prevention and control activities while adding generalizability to the findings." He believes it is vital to continue to make others in the cancer control and research communities aware of the data and to position it as an indispensable resource for population-based cancer research, prevention, and control activities.

Dr. Lynch views the future as bright and recognizes the challenge of "identifying and implementing [new] mechanisms to provide quality, completeness, and timeliness of data collection while keeping costs at a fundable level." He explained that answering this challenge needs to continue to provide "high-quality research opportunities" for researchers in the cancer surveillance profession. One area that he hopes cancer surveillance will expand into is providing meaningful data on quality of life of the cancer survivor.

Selected SEER Publications From Dr. Lynch

Clegg LX, Reichman ME, Hankey BF, Miller BA, Lin YD, Johnson NJ, Schwartz SM, Bernstein L, Chen VW, Goodman MT, Gomez SL, Graff JJ, Lynch CF, Lin CC, Edwards BK. Quality of race, Hispanic ethnicity, and immigrant status in population-based cancer registry data: implications for health disparity studies. *Cancer Causes Control*. 2007 Jan 11 [Epub ahead of print].

Mahajan R, Blair A, Lynch CF, Schroeder P, Hoppin JA, Sandler DP, Alavanja MC. Fonofos exposure and cancer incidence in the Agricultural Health Study. *Environ Health Perspect*. 2006 Dec;114(12):1838-42.

Thyagarajan B, Anderson KE, Folsom AR, Jacobs DR Jr, Lynch CF, Bargaje A, Khaliq W, Gross MD. No association between XRCC1 and XRCC3 gene polymorphisms and breast cancer risk: Iowa Women's Health Study. *Cancer Detect Prev*. 30(4):313-321 [Epub2006 Sep 11].

Kathleen M. McKeen, Iowa Cancer Registry



Kathleen M. McKeen

Kathleen M. McKeen began her cancer registry career in 1959 in the University of Iowa's Hospital and Clinic Tumor Registry and has served as the director of the Iowa Cancer Registry since 1982. As Registry Director, Ms. McKeen coordinates the efforts of approximately 50 employees and directs the statewide collection and dissemination of cancer registry data. The Iowa Cancer Registry has been involved with the SEER Program since 1973, and much of the Iowa registry's success has been a direct reflection of Ms. McKeen's expertise, dedication, and commitment to the cancer registry profession. The Iowa Cancer Registry is consistently regarded as one of the highest quality cancer surveillance programs in the country.

"Cancer registries are the backbone of cancer surveillance research," explains Ms. McKeen. "Having quality data for researchers should be the goal of all personnel in the registry field." This belief is evident in her everyday coordination of registry activities, from data quality assurance to her active role in mentoring fellow colleagues and staff by sharing her extensive knowledge of the profession. Ms. McKeen

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believes that the cancer registry profession has come a long way since she began her career more than 40 years ago. Thanks to the dedication and leadership of the individuals in the field, "organizations like the North American Association of Central Cancer Registries (NAACCR) have benefited from the leadership and knowledge of the NCI SEER staff and SEER members across the United States," she explained. "The registry field has realized a maturity thanks to the strengths of the expertise, knowledge, and the perseverance to see the profession grow."

A project of particular pride to Ms. McKeen has been the design and execution of the SEER*DMS, currently operating in the Detroit and Connecticut Tumor Registries and scheduled to be implemented in the Hawaii and New Mexico Registries in the upcoming year and in Iowa in early 2008. This "labor of love," as Ms. McKeen described it, has been extremely rewarding. The high-quality work, passion, and

professionalism of colleagues that she was able to work with in the creation of this software for SEER Program cancer registries has been a major milestone in her career. She explained that this tool will greatly increase the efficiency of registry operations and ultimately will result in benefits to cancer patients, always her primary concern.

Ms. McKeen has been recognized for her contributions to the registry profession, and was the 2001 recipient of NAACCR's Calum S. Muir Memorial Award "in recognition of an outstanding career distinguished by personal excellence and by serving as a mentor for others in the field of cancer registration." Additionally, she was awarded the Lifetime Achievement Award in 2003 by NCI's SEER Program in recognition of her remarkable and unique contributions to the SEER Program and her role in making the SEER Program the success that it is today. She also has shared her expertise within the research community as the author or co-author of more than 35 publications on cancer registry-related topics.

New SEER Publications

Keegan TH, Gomez SL, Clarke CA, Chan JK, Glaser SL. Recent trends in breast cancer incidence among 6 Asian groups in the Greater Bay Area of Northern California. *Int J Cancer*. 2006 Dec 12 [Epub ahead of print].

Lantz PM, Mujahid M, Schwartz K, Janz NK, Fagerlin A, Salem B, Liu L, Deapen D, Katz SJ. The influence of race, ethnicity, and individual socioeconomic factors on breast cancer stage at diagnosis. *Am J Public Health*. 2006 Dec;96(12):2173-8.

Katz SJ, Hofer TP, Hawley S, Lantz PM, Janz NK, Schwartz K, Liu L, Deapen D, Morrow M. Patterns and correlates of patient referral to surgeons for treatment of breast cancer. *J Clin Oncol*. 2007 Jan 20;25(3):271-6.

Lantz PM, Mujahid M, Schwartz K, Janz NK, Fagerlin A, Salem B, Liu L, Deapen D, Katz SJ. The influence of race, ethnicity, and individual socioeconomic factors on breast cancer stage at diagnosis. *Am J Public Health*. 2006 Dec;96(12):2173-8. Epub 2006 Oct 31.



CISNET Staff Profile

Carolyn M. Rutter, Ph.D.
Group Health Cooperative

Carolyn M. Rutter, Ph.D., is an Associate Investigator in the Center for Health Studies at the Group Health Cooperative. She also has been a grantee since 2002 in the Cancer Intervention and Surveillance Modeling Network's (CISNET) colorectal cancer screening group. Dr. Rutter's work focuses



Carolyn M. Rutter, Ph.D.

on developing microsimulation models for colorectal cancer screening, and she has developed a unique Bayesian calibration approach in the design of her model that allows for the simultaneous calibration of four model components to six different data sources. These sources include the number

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and size of adenomas, the number of preclinical invasive cancers found in first screenings, and the incidence of invasive colon and rectal cancer prior to the screening era. Currently, she is working to extend her model to incorporate risk factors.

Dr. Rutter received both her M.S. and Ph.D. degrees in biostatistics from the University of California, Los Angeles, before joining the staff as a Senior Statistician in the Department of Biomathematics in 1991. From there, she went on to become a Research Fellow in the Department of Health Care Policy at Harvard Medical School, and then transitioned to an investigator position at Group Health Cooperative's Center for Health Studies (CHS) in 1995. Founded in 1983, CHS conducts innovative research in the field of population-based health care that supports the Group Health Cooperative in its mission to "transform health care."

Working at Group Health has given Dr. Rutter a unique perspective on evaluating trends and outcomes of colorectal cancer screenings, in addition to furthering her research through the use of automated data systems. These systems provide information about screening behaviors within the Group Health population. She hopes that, through this collaboration, they will be able to look at best practices and the impact of new screening guidelines on colorectal cancer outcomes.

Grateful for the opportunity to work with her CISNET colleagues, Dr. Rutter stated that "the CISNET modeling group has unique insights into gaps in our current knowledge of both the disease process underlying colorectal cancer and screening behaviors in the U.S. population." She hopes that these efforts in the future will lead to the implementation of a colorectal cancer screening surveillance program to provide information on screening behavior, screening outcomes, and even risk factors for colorectal cancer.



New CISNET Publications

JNCI Monograph, October 2006

In October 2006, the Journal of the National Cancer Institute (JNCI) released a new monograph, entitled "The Impact of Mammography and Adjuvant Therapy on U.S. Breast Cancer Mortality (1975-2000): Collective Results from the Cancer Intervention and Surveillance Modeling Network," (Monograph No. 36). (<http://jncimono.oxfordjournals.org/>.) The monograph, with scientific editors Eric J. Feuer, Ph.D., and Kathleen Cronin, Ph.D., of NCI's Statistical Research and Applications Branch (SRAB); Sylvia K. Plevritis, Ph.D., of Stanford University; and Donald A. Berry, Ph.D., of M.D. Anderson Cancer Center, presents results from the seven

CISNET breast cancer modeling groups. The monograph assesses the contributions of screening mammography and adjuvant treatment to the reduction in breast cancer mortality in the United States from 1975 to 2000. This monograph represents a complete version of the results, which initially were published in shorter form in a New England Journal of Medicine article in 2005 (New Eng J Med 2005 Oct 27;353(17):12-20).

For a complete list of new CISNET publications, visit <http://cisnet.cancer.gov/publications/>.

Linked Databases

National Longitudinal and Mortality Study (NLMS)

The NLMS is an ongoing longitudinal study developed for the purpose of evaluating the effects of differentials in demographic and socioeconomic characteristics on U.S. mortality rates. The NLMS is a unique research database in that it includes self-reported information from several probability sample surveys of the noninstitutionalized population of the United States. The study cohorts are derived from several Current Population Surveys and Annual Social and Economic Supplements, and from one 1980 Census cohort currently spanning the years 1973 through 2002. This project is a collaborative effort sponsored by NCI; the National Heart, Lung, and Blood Institute; the National Institute on Aging; the National Center for Health Statistics; and the U.S. Census Bureau. Variables available for analysis include a range of socioeconomic measures such as education, income, and employment as well as information collected from death certificates, including cause of death. Currently, the study includes data on more than 2.3 million persons and more than 250,000 deaths. Plans are to integrate information on mortality every 2 years from 1998 to 2006, with research on the resulting database to continue through 2009.

Interested researchers may obtain a copy of the NLMS public-use CD after submitting an NLMS Public-Use File Request Form, available from <http://www.census.gov/nlms/agreement.html>. For access to the entire NLMS database, researchers must make arrangements through the Principal Investigators of the NLMS sponsoring agencies. For more information on NLMS, including a complete listing of NLMS Principal Researchers, visit <http://www.census.gov/nlms/projectDescription.html>.

SEER-NLMS

This pilot project links cancer patient information from the SEER Program to NLMS data for those individuals who were also included in an NLMS study cohort. The linkage will add self-reported socioeconomic data for SEER cancer patients that cannot be obtained from the SEER database alone. Through this linkage, researchers will explore the

combined data set as a potential resource for estimating differentials in cancer incidence, and survival and tumor characteristics according to self-reported race/ethnicity, marital status, education, income, occupation and industry, residence, nativity/immigration status, smoking status, health status, and availability of health insurance.

SEER-Medicare

The SEER-Medicare data are a unique information source resulting from the linkage of population-based data from the SEER Program registries with Medicare enrollment and claims files. This linkage is a collaborative effort between NCI, the SEER registries, and the Centers for Medicare and Medicaid Services. The Medicare data include claims for covered health care services, such as hospital, physician, outpatient, home health, and hospice bills. With more than 2.4 million persons with cancer included in the data, the SEER-Medicare data provide an excellent resource for longitudinal research that spans the continuum of cancer control activities.

Although SEER-Medicare data are de-identified, maintaining patient and provider confidentiality is a primary concern of all organizations involved; thus, the SEER-Medicare data are not public-use data files. Investigators are required to obtain approval to acquire data. NCI will work with investigators requesting data files to balance their research needs with those of the individuals and institutions included in the data. For more information on the SEER-Medicare linked database, see <http://healthservices.cancer.gov/seermedicare>.

Data Linkage to Improve the Classification of AI/AN Patients

In the fall of 2006, our colleagues at the Indian Health Service (IHS) generously allowed NCI's SEER Program and the CDC's National Program of Cancer Registries (NPCR) to compare all cancer registry records with the IHS national patient registration file for the purposes of identifying American Indian or Alaska Native (AI/AN) cancer cases that may have been misclassified into some other racial/ethnic group. SEER Program registries have taken advantage of this opportunity on two previous occasions.

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Misclassification of AI/AN in central cancer registries severely limits the interpretation of cancer surveillance statistics for AI/AN populations and leads to underestimation of the true cancer incidence rates for these groups. Such misclassification has now been documented in all statewide cancer registries in the United States that have been linked with IHS records; in some instances, misclassification rates approached 50 percent of all American Indian cancer cases.

One method for addressing this problem is to link records systematically from central cancer registries with IHS patient registration records to identify individuals of Native ancestry. Created in 1955, IHS is the principal federal health care provider and advocate for Indian people. IHS currently provides health services to approximately 1.5 million AI/AN in 35 states. Individuals must provide documentation of their Native ancestry to receive health-related care and/or reimbursement for care from IHS. For this reason, cancer registry records that link with IHS records reasonably may be assumed to represent AI/AN cancer cases.

A limitation of this methodology, however, is that the availability to and use of IHS facilities by AI/AN vary considerably by geographic area in the United States. As mentioned, IHS facilities are not available in all states. In addition, AI/AN residents of metropolitan areas may have greater access to comprehensive cancer-related care, or may belong to private health plans and therefore not be included in the IHS health care system. Some cancer registries may need to work with local tribal authorities to investigate additional potential sources of information.

Despite IHS data limitations, “These linkages are extremely important to cancer surveillance,” stated Barry Miller, Dr.P.H., an SRP epidemiologist, “because they enable us to better characterize the cancer burden in AI/AN populations and to compare their cancer experience with that of other racial and ethnic groups.” This, in turn, “should help target needed cancer prevention and control efforts and spur research into the cancer problems specific to AI/AN populations.”

Hawaii Tumor Registry Staff Welcomes SEER* DMS

Members of the SEER*DMS (SEER Data Management System) team (Dave Annett, Linda Coyle, and Nicki Schussler of IMS; and Marsha Reichman and Carol Kosary of NCI) traveled to the SEER Hawaii Tumor Registry (HTR) for beta-test training during the week of February 5. The Hawaii Tumor Registry is the third registry to deploy the new data management system designed specifically for SEER registries, and it will “go live” in May. SEER*DMS currently is being used in Detroit and Connecticut. The Hawaii Tumor Registry staff are enthusiastic about the system and are mastering it rapidly. The SEER*DMS team thanks the HTR staff for their generous hospitality—“we loved the leis, local delicacies, and new friends we made.”

*“The week of training provided by IMS staff for the SEER*DMS system was well organized, comprehensive, and warmly received by all registry personnel. Although the registry staff currently are in the testing phase of deployment, we are excited and can envision many workflow changes and efficiencies from the new system.”*

—Michael Green, HTR Program Manager



Members of the SEER*DMS team and the Hawaii Tumor Registry staff: Kneeling/1st Row: (left to right) Ray Elido, CTR, Linda Brogan, CTR, Launa Luk, Cathy Anderson, Alan Mogi. 2nd Row: (l. to r.) Rebecca Loeffers, RHIT, CTR, Miles Calunod, Eileen Elido, CTR, Carol Kosary, MS (SEER), Marsha Reichman, PhD (SEER), Linda Rego, CTR, Nicky Schussler (IMS), Linda Coyle (IMS), Michael Green, CTR, Joni Davis, CTR. Last Row: (l. to r.) Helene Hodges, CTR, Jay Layugan, CTR, Dave Annett (IMS). Not pictured: Marc Goodman, PhD, Laurence Kolonel, PhD, Brenda Hernandez, PhD, and Sarah Johnson.

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