

Position Description

**Chair, Division of Biostatistics, Department of Health Sciences Research
Mayo Clinic**

Responsibilities of the position:

The successful candidate will lead a statistical staff with a wide breadth of statistical, scientific, and computational knowledge. The ideal candidate will serve as a role model and catalyst to encourage collaboration between statistical faculty and clinical and basic science investigators throughout Mayo Clinic. He or she will be expected to articulate a vision and provide leadership to strengthen the bioinformatics and statistical genomics activities within the Division and across the institution.

The responsibilities of the position include conducting and facilitating biostatistics research in support of the research priorities and the clinical practice of Mayo Clinic. Relevant areas of inquiry include, but are not limited to: bioinformatics, survival analysis, clinical trials, survey research, statistical genetics, population research, and outcomes research.

Additional duties and responsibilities

- **Provide Vision and Strategic Direction.** Provide overall strategic direction within the framework of institutional policy. Develop and articulate a shared vision. Ensure balance for each of the three major Mayo Clinic priorities: Clinical Practice, Education, and Research.
- **Recruitment and Retention of Staff.** Be responsible for the recruitment and retention of outstanding staff, promote diversity objectives in staff selection, foster mutual respect and facilitate productive working relationships.
- **Mentoring.** Guide and mentor the staff to assist each member to realize their career goals.
- **Monitor and Measure Staff Performance.** Maintain a performance career record on each member and review it with the member annually. The record should include contributions to each of the three Mayo Clinic priorities: Clinical Practice, Education, and Research.
- **Identify and Nurture Future Leaders.** Identify potential leaders and enhance their experience by selecting institutional committee assignments and departmental leadership roles.

- Ensure Highest Quality Service. Be attuned to the message from clients to guarantee timely, quality service. Promote and foster biostatistical collaboration at the highest level of quality.
- Promote Discovery and Delivery of leading edge medical science and treatment protocols.
- Encourage and promote methodological research
- Monitor Department/Division Output to assure compliance with institutional performance goals.

Reporting relationships, both formal and informal:

Largely self-directed; reports directly to the Chair, Department of Health Sciences Research.

Academic credentials required and desirable:

The candidate must be nationally recognized with a strong record of achievement in methodologic research in applied biostatistics. He or she must have demonstrated administrative and leadership accomplishments as well as an aptitude for mentoring and staff development. Candidates should have earned a doctorate degree in statistics, biostatistics, or an equivalent. Candidates must have a strong record of scholarship evidenced by the coordination and publication of high-quality methodologic research in applied biostatistics. Although the salary for this position does not require extramural support, demonstrated ability to obtain funding will be considered a significant strength. Academic appointment at Associate or Full Professor is expected.

Measures of success:

In the first three years the successful chair will:

- Consider new approaches to promoting collaborative and providing clinical and basic consulting service to Mayo staff
- Create clear expectations and guide the career development of the junior staff
- Articulate a vision in strengthening bioinformatics and statistical genomics activities within the Division
- Increased extramural funding to Division
- Develop shared leadership model for the Division

- Establish desired balance of consulting practice, collaborative research, and Biostatistics initiated research
- Develop and implement plans to strengthen leadership skills of Division members, including but not limited to options for chair succession

Desirable personal attributes:

- Demonstrated leadership, administrative and process improvement skills
- Forward and future-thinking in regard to the field of statistics and biostatistics
- High level communication skills
- Ability to inspire, motivate, and build consensus

What type of person would fit with Mayo, HSR and our culture?

At Mayo, the style of leadership is as important as obtaining results. Mayo leaders inspire trust by exemplifying the deeply rooted values of the institution. Effective Mayo leaders promote collegial dialogue, collaborative problem solving and consensus-based decision-making to create shared goals and commitments. They provide an environment that values diversity and enables people to develop their talents and do their best work, individually and together.

Strengths of Division

- Large group of colleagues with a wide range of experience, expertise, and interests
- Non-competitive, collegial atmosphere
- Highly developed infrastructure in terms of computational and administrative support
- Very diversified research opportunities, from NIH funded program projects, to laboratory studies, to clinical trials, to retrospective chart reviews.
- Opportunities for continuing education including travel to national conferences, seminars both within our department and institution, etc.

Why is this position open?

In the past 30 years the Division has had only 2 chairs. The current Division chair, Dr. Terry Therneau, has served in this position for 8 years. Due to the length of time in the position, and a desire to commit 100% time to scientific activities, Dr. Therneau is stepping down. In an effort to strengthen the overall group and find the most effective leader, the current search was established.

What are the opportunities for growth?

Biostatistics has recently enjoyed substantial growth, primarily due to new and continued strong collaborative relationships with Mayo clinical and basic scientists who receive extramural funding. Future growth will likely focus on institutional priorities in bioinformatics and genomics. The institutional research committee does provide significant support to the Division, which is to be used at the Chair's discretion to further the stated institutional research goals. It is anticipated, however, that future growth shall be driven significantly by external funding.

Overview of Mayo, HSR, and Biostatistics

Mayo Foundation is a charitable, not-for-profit organization based in Rochester, Minnesota which provides comprehensive medical care, education in clinical medicine and the medical sciences, and extensive programs in medical research. Its mission is to provide the best care to every patient every day through integrated clinical practice, education and research.

Research programs at Mayo reflect the interest and initiative of individual investigators. There are approximately 135 established laboratory-based research programs. Nearly 380 research fellows are pursuing advanced full-time laboratory research training at Mayo. The NIH supports research at Mayo, with nearly 175 investigators supported by approximately 350 NIH grants. Various other extramural funding sources, including the Department of Defense Medical Research Initiative, private foundations, and industry, also support research at Mayo. In 2002 the Mayo Foundation research budget was \$324 million, of which \$192 million came from extramural sources (\$143 million from NIH and other federal sources and \$49 million from commercial and other sources). The remaining \$131 million came from Mayo Foundation, which annually contributes approximately 41% of the total research budget, primarily in the form of faculty salaries, infrastructure, and core facilities.

Department of Health Sciences Research

Centered in an environment that attracts and retains outstanding scientists and allied health professionals, the mission of the Department of Health Sciences Research is to improve the care of patients and reduce the burden of human illness by:

- Conducting outstanding peer reviewed research initiated by department members;
- Participating as active collaborators with clinical and basic scientists in long term research programs;
- Working with Mayo clinicians and other investigators to provide high quality and timely consultation, analysis and mentoring;
- Fostering an outstanding academic faculty dedicated to the development and delivery of educational programs to train biomedical researchers;
- Working with Mayo practice leaders to innovatively and efficiently record, index, retrieve, collate and analyze data needed to provide and enhance excellent, cost-effective patient care;
- Engaging in a wide range of scholarly activities that contribute to Mayo's mission and to professional growth

Division of Biostatistics. The Division of Biostatistics, located on the seventh and eight floors of the Harwick Building (16,300 square feet) and the first floor of the Kahler (3,265 square feet), has provided consultation on statistical design and analysis for the clinical and laboratory research staff at Mayo since this service was introduced by Joseph Berkson in 1932. The Division is currently staffed by 25 Ph.D. statisticians, and 45 statisticians with Master's degrees, whose activities are facilitated by 65 statisticians with Bachelors's degrees ("data analysts") and 20 clerical personnel. In addition to general consulting on over 1,000 ongoing investigations, this group provides core statistical support the Mayo Clinic Comprehensive Cancer Center, the Rochester Epidemiology Project, and multiple SPORES, program project grants, and other activities. The Division also maintains an active statistical research effort, especially in the areas of epidemiologic modeling, survival analysis, statistical genetics and in the design, early stopping, and analysis of clinical trials.

Also within the Division is a data entry and management group consisting of a supervisor, four data entry clerks, and four data librarians. A long-term archiving facility retains study data in perpetuity and assures long-term access. The current location of any of over 8,000 studies undertaken since 1966 can be viewed on an on-line catalogue and retrieved within 24 hours. These efforts are supported by the Statistical Systems Section of the Department of Information Services, which comprises 32 FTE systems analyst/programmers devoted to the extensive computational and data handling needs of the statisticians and epidemiologists. The Department of Information Services includes 450 additional personnel who support Mayo's information environment. All necessary equipment is available in the Department of Health Sciences Research or through the Mayo Computer Facility and the Research Computer Facility. The Division is also home to the Survey Research Center (see below).

The primary data analysis tools in the Division are SAS and S-Plus. These are augmented with other tools such as StatXact, SUDAAN, Data Conversion, and BMDP. Familiarity with these packages, particularly the first two, is extensive. The Division of Biostatistics has been a user of SAS since its 1972 release and has made significant contributions to the SAS software base. Members of the Division have authored all of the survival analysis routines distributed in the S-Plus package.

Survey Research Center. The Survey Research Center serves as an institutional resource for conducting mail surveys and telephone interviews. The consultative aspects of the service aid in setting study aims and objectives, defining study populations, sampling

strategy, choice of survey method, and assisting with various logistical aspects. Survey design, which includes the writing of cover letters, questionnaire layout, and writing and pre-testing of questions is accomplished jointly with study investigators. The Center maintains a large collection of local and national surveys for reference purposes. Implementation of a survey includes pre-testing, printing, mailing, and monitoring responses to mail surveys. Repeat mailings and follow-up of unclaimed letters is facilitated using on-line credit bureau searches and CD-ROMs of the entire United States white page listings. Survey processing services include visual and electronic editing of returns and responses, coding responses, abstracting and organizing comments, coordinating data entry, performing statistical analyses and preparing reports. The service also orders death certificates and has a notary public.

Division of Epidemiology. Large-scale, ongoing and highly successful epidemiologic studies of the population of Rochester and Olmsted County, Minnesota, and referral bias studies which encompass the Mayo Clinic referral practice are hallmarks of the Department's epidemiologic efforts. These activities employ six full-time physician-epidemiologists and 9 PhD epidemiologists in the Division of Epidemiology. Various visiting scientists, graduate students and clinical fellows participate in these studies, as do a substantial number of Mayo clinicians. The laboratory for these studies (the Rochester Epidemiology Project) occupies 6,473 square feet on the sixth floor of the Harwick Building. This includes over 5,600 square feet devoted to 35 trained nurse abstractors, who are responsible for reading and interpreting medical records.

Division of Health Care Policy and Research. The Division of Health Care Policy & Research (HCPR) is the most recent (1992) addition to the Department of Health Sciences Research. HCPR staff includes one full-time-equivalent (FTE) Ph.D. level consultant health services researcher; two FTE Ph.D. level senior associate consultant economists; one FTE masters-level lead statistician; five FTE data analysts; six FTE database programmers; two FTE data analyst assistants; two FTE programmer interns; and 3.35 FTE secretaries. Approximately fifteen Mayo consultants have joint appointments within HCPR, providing collaborative expertise in clinical specialties ranging from laboratory medicine to gastroenterology, etc.

HCPR is a multidisciplinary group whose mission is to conduct collaborative health services research in support of the practice, administrative and educational needs of Mayo. Health services research activities are targeted toward ensuring the delivery of high quality, clinically appropriate, cost-effective health care to all segments of the population Mayo serves. The Division recognizes Mayo's commitment to patients at all levels—local, regional, national, and international—across the entire continuum of care.

Division of Medical Informatics Research. The Division of Medical Informatics Research occupies 3,000 square feet on the eighth floor of the Harwick Building. The division was created in 1987 to formalize the organization of medical record indexing operations (previously the Medical Records Unit) and to initiate a new program of research on patient data representation in a knowledge-based context. The roots of the division date to the turn of the century with the introduction of the unit medical record in

1907 and the establishment in 1909 of two sophisticated biaxial coding systems implemented on 5 x 7 index cards to catalog all medical diagnoses listed on the summary "master sheet" and all surgical procedures. This system was reengineered in 1935 to exploit the emerging IBM punch card technology and was computerized in 1975. Diagnoses from 1950 onward are now on computer tape or disk, but the earlier data remain intact for manual retrieval. Together, this system provides access to the diagnoses and surgical procedures recorded among all inpatients and outpatients seen at Mayo Clinic since 1909. In 2000, 3,647,967 diagnoses were entered for 371,354 individual patients, and 342,516 surgical procedures were coded.

CLINICAL FACILITIES

Clinical support is available from 1,493 "consultants" in medicine, surgery, and allied sciences who make up the staff of the Mayo Clinic in Rochester. In addition to the consultants, there are over 1,600 residents, fellows and medical students, and over 21,495 total personnel. Mayo physicians exclusively staff the two hospitals, St. Marys (1,157 beds) and Rochester Methodist (794 beds), which are part of Mayo Medical Center. Consequently, there is no functional distinction between hospital or clinic patients or physicians, as the entire spectrum of health care is integrated into a common group practice. This organization attends about 350,000 patients each year, who come from all over the United States and many countries abroad, although the majority are from a 500-mile radius of Rochester.

Virtually all primary, secondary and tertiary medical care to the residents of Olmsted County, Minnesota, including the city of Rochester, is provided by Mayo Clinic and Olmsted Medical Center. Olmsted Medical Center is a nonprofit organization comprised of 86 physicians in the Olmsted Medical Group, an independent multispecialty group practice with 11 satellite facilities, and the affiliated Olmsted Community Hospital (61 beds). Thus, the local population has access to excellent medical care in all specialties and subspecialties.

In addition, the Mayo Health System provides a network of community-based health care facilities across the region. The Mayo Health System links the expertise of Mayo Clinic with the health care delivery systems of 59 communities in Minnesota, Iowa and Wisconsin, thus providing the full spectrum of health care, beginning with the local health care team and extending to the multidisciplinary practice at Mayo Clinic. Patients receive the vast majority of their care in their own communities, but if they choose to go to Mayo Clinic, they enjoy smooth access to care in Rochester. The Mayo Health System includes 13 owned hospitals and eight nursing homes. Altogether, 549 physicians are part of Mayo Health System, 71% of whom are primary care physicians. In 1998, there were over 2.25 million patient visits in the Mayo Health System, including over 33,000 inpatient hospitalizations.

MISCELLANEOUS MAYO FACILITIES

The Mayo Library holds 337,932 volumes and a current collection of over 4,200 current journal titles, including 2,485 electronic journal subscriptions, and processes 39,172 interlibrary loans (along with an additional 58,888 from outside Mayo) each year. There is on-line access to MEDLINE and other scientific literature databases via Mayo

Search, a bibliographic search utility employing the PlusNet2 proprietary application software.

A developmental engineering laboratory is available to all investigators for the development and maintenance of instruments and equipment.

The Section of Publications has editors, proofreaders, editorial assistants and other staff to assist with the preparation of scientific papers. Audiovisual, Video Communications and Medical Graphics/Visual Information Sections with trained full-time staff, are available for the development and preparation of audiovisual instruction material, including television tapes. Dual channel satellite ground stations exist at all three Mayo campuses (Rochester, Jacksonville and Scottsdale) and are used extensively for administrative integration, telemedicine, and broadcast of continuing education programs. In addition, *Mayo Clinic Proceedings*, founded in 1927 to report extensive research on patient outcomes at Mayo, is now the world's third largest general medical journal by circulation.