

SENIOR RESEARCH SCIENTIST PROGRAM
AT THE JET PROPULSION LABORATORY

Updated December 2009

Dan McCleese
Chief Scientist

JPL SRS

JET PROPULSION LABORATORY
CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CALIFORNIA

In 1977, the Director of JPL and the Chief Scientist identified the need for a JPL program to attract and retain outstanding individual researchers. JPL is a science-mission organization founded on excellence in Engineering, Project Management and Research. This program would recognize the fact that benefits derived by both NASA and JPL from outstanding individual researchers are comparable to those derived from mission management personnel and leaders of engineering activities.¹

NOTE: In 1996 the title *Senior Research Scientists/ Engineers* was changed to *Senior Research Scientists (SRS)*. This change reflected the wish of the appointees to use “science” to designate all research in Science, Technology and Engineering.

This document supersedes all earlier Documents (D-5676, dated August 10, 1988), statements and announcements, and updates the criteria by which these individual researchers are identified and recognized at JPL. The following sections are specifically noted: Benefits to JPL, Criteria for qualification, SRS Privileges and Benefits, Responsibilities, the Selection Process and Appointment.

BENEFITS TO JPL

The establishment of the JPL Senior Research Scientist Program demonstrates the Laboratory's recognition of research in science, technology and engineering as a vital and integral part of its programs and projects.

The title of Senior Research Scientist is a designation (not a job classification).

The program will:

- Enable the Laboratory to better attract and keep high caliber scientists, technologists and engineers by giving special recognition and privileges.
- Increase the scientific and technical potential of the Laboratory, enabling it to better fulfill its commitments and thereby increasing its value to NASA and the nation.

1

While the SRS Program is focused on “senior” researchers, in 1986 JPL established a program “The Lew Allen Award for Excellence” to recognize researchers who are within 10 years from their highest degree.

QUALIFICATION CRITERIA

Eligibility for the appointment of a Senior Research Scientist requires that an individual has demonstrated research achievements comparable to those required for a full professorship at Caltech or equivalent university. This appointment is limited to those whose research is of the highest quality and significance, who have had a major impact on their field, and who are widely recognized by their peers in the research community for their accomplishments. In addition to research ability as established by peer review, the appointments will also depend upon the individual's contributions to JPL as evidenced by:

- Active participation in research programs related to the Laboratory's goals
- Institutional contributions to JPL
- Research leadership in the JPL environment

SRS PRIVILEGES, BENEFITS AND OTHER FACTORS

- The benefits and privileges associated with these appointments will remain as long as the researcher is employed in a research capacity by JPL.
- SRSs are eligible to receive \$50K per year for two consecutive years from the Laboratory burden funds, upon approval by the Chief Scientist, for the exploration of new ideas or new areas of research.
- SRSs are eligible for "Leave with Pay", similar to the sabbatical leaves enjoyed by Caltech faculty.
- The Chief Scientist oversees and monitors the vigor and fitness of the SRS community, supported by the SRS-Council.
- The Chief Scientist may increase the number of conference foreign-trips to SRSs, above that allowed for non-SRS researchers.
- The SRSs continue to be administratively responsible to the Divisions/Offices within which they hold their regular Laboratory positions.
- Retired SRSs may use the designation "SRS-Emeritus" if they return to work part time at JPL.

SRS RESPONSIBILITIES

The primary responsibility of Senior Research Scientists is to continue to serve as creative research leaders in areas related to the Laboratory's mission and goals. In addition, they have institutional responsibilities, namely:

- Assignments by the JPL Chief Scientist and Chief Technologist to participate in the development of JPL long-range research plans
- Provide guidance and direction in designated fields of endeavor in preparation for future programs and projects
- Promote student and post-doctoral research liaison with Caltech Campus and other academic institutions
- Serve on JPL review boards
- Participate in search committees to recruit and select new hires
- Participate in national committees and boards

SELECTION PROCESS

All appointments are made by the JPL Director in consultation with the Chief Scientist and the Caltech Provost. Since the introduction of the appointment process, selection and appointment of candidates has followed the standards applied by Caltech campus for appointments to tenured full professors to the faculty, as described below. Consequently, JPL SRSs are evaluated according to the standards for appointment as tenured full professor at leading universities.

Nomination for appointment as Senior Research Scientist is required for all candidates. Suggestions for nominations may originate from the Chief Scientist or other SRSs to the appropriate Technical Division Managers (TDM), who may also nominate candidates from their own divisions. However, formal nominations to the Chief Scientist are made only by the TDMs. The steps of the process are listed in Table 1 and are carried out in two phases: the internal review process and the external peer review process, as described below.

A. INTERNAL REVIEW FOR NOMINATION

A call for SRS nomination is issued annually by the Chief Scientist. Formal nomination by the Technical Division Manager must occur on or before the end of November, for consideration during the fiscal year. Each letter of nomination must contain the following information:

- (1) Brief description of research specialty (such as oceanography, information theory, radar remote sensing, etc.).
- (2) A concise statement, explaining the nominee's most outstanding achievements and his/her impact on the field. The impact statement must be supported by specific referenced publications in the open literature in which the candidate is first author.
- (3) A specific description of the nominee's potential for further important contributions in the future.
- (4) A list of the most important institutional contributions undertaken at JPL which fall outside the nominee's immediate research tasks. The list may include such items as participation in mission studies, development of Laboratory programs, formal Laboratory assignments, representation of JPL on national/international committees, recruiting of outstanding individuals to the Laboratory. Internal letters of recommendations may also be included
- (5) An up-to-date resume, including a list of refereed publications.

B. PRELIMINARY SELECTION

The Chief Scientist organizes and chairs a Review Committee including the Chief Technologist and selected Senior Research Scientists and Campus faculty. This Committee reviews the institutional contributions of each candidate then advises the Chief Scientist on which candidates should be forwarded to the next step, the peer review process.

C. REQUEST FOR EXTERNAL PEER REVIEW PROCESS

Each nominee is requested to provide a list of **external** peers familiar with his or her research contributions. This list includes faculty members from major universities; a Caltech faculty member is included among them whenever possible. The Chief Scientist may request names of additional reviewers, upon recommendation of the Review Committee. The nominee's permission to proceed is required before the process continues. The nominee also provides the Chief Scientist with his/her research specialty, and up to date resume.

D. EVALUATION OF EXTERNAL PEER REVIEWS

In the request for peer review, the Chief Scientist solicits review letters from representative leaders in the scientific or technical field of each candidate, utilizing the candidate supplied peer list and augmented, as needed, by names supplied by the Review Committee. Peer Reviewers are informed by the Chief Scientist that:

- (1) Eligibility depends upon demonstrated research achievements comparable to that required for appointment as a full professor at a leading university.
- (2) This appointment is limited to those whose research is of the highest quality and significance and who are widely recognized in the research community for their accomplishments.

The information requested from peer reviewers includes specific assessment of the significance of the nominee's research:

- (1) Critical evaluation of the individual's research accomplishments and his/her impact on the field.
- (2) The nominee's standing in the peer community. Comparison is made with specific names of the best people working in the field.
- (3) The nominee's potential for important contributions in the future.

This solicitation process usually takes several months to complete. The Review Committee organized in Part (B) then evaluates the results of the peer review input and recommends approval, requests additional clarification, or recommends denial of the appointment.

APPOINTMENT BY THE DIRECTOR

The Chief Scientist presents the recommendations of the Review Committee to the Director and the Caltech Provost. The JPL Director evaluates the full results and makes the final decision on the appointments. A formal letter signed by the JPL Director to the selected SRS completes the process. Copies of the letter are sent to the appointee's Division Manager, the Director of the Technical Divisions, the Office of Human Relations at JPL, the Chair of the Senior Research Scientists Council, and the Caltech Provost.

Table 1. Schedule of Steps Leading to Appointments of Senior Research Scientists, assuming a start in September

STEP	PERIOD	RESPONSIBILITY
Formal Nomination	9/1 – 11/30	Tech Div Managers
Candidates Selection	12/1 – 12/30	Chief Scientist
Peer Review	11/1 – 4/31	Chief Scientist
Evaluation of reviews	5/1 – 5/30	Chief Scientist
Appointment	End of June	JPL Director
Merit Evaluation	ECAP Time	Tech Div Managers