



ORGANIZATION AND PROCEDURES OF THE  
NEBRASKA CENTER FOR MATERIALS AND NANOSCIENCE



## I. Definition and Context

1. The Nebraska Center for Materials and Nanoscience at the University of Nebraska-Lincoln (UNL) is an interdisciplinary organization established in 1988 for the purpose of facilitating and promoting research, graduate instruction and outreach in the branches of materials research, materials science and engineering, nanoscience and nanotechnology. While centered and administered at UNL, it facilitates research and serves faculty, staff and students at all campuses of the University of Nebraska (NU) system.
2. It is hereafter referred to as NCMN.
3. NCMN is designated as a University of Nebraska Board of Regents approved “Multi-Departmental Academic Center for Research, Teaching and/or Service,” because of its “interdisciplinary breadth encompassing commitment of funding and faculty time from more than one department” and its identifiable budget (section 2.11 of the Bylaws of the Board of Regents). The Center is also designated as a Vice Chancellor for Research and Economic Development approved Center for the purposes of F & A cost distribution (see below Sec. IV. 2. g and <https://research.unl.edu/sponsoredprograms/approved-unl-centers-or-initiatives-for-purposes-of-fa-cost-distribution/>). The Center receives annual funding to support its Facilities from the Nebraska Research Initiative (NRI), which is administered by the Office of the University of Nebraska Executive Vice President and Provost. It also receives periodic support from federal grants, UNL offices and colleges, and facility fees. Maintaining these various sources of funding is a major goal of the procedures described below.
4. The NCMN is an association of individual members and is operated by a Director, an Advisory Committee, and other committees and staff as provided below.
5. The principles and procedures described in this document guide the operation of NCMN. If these procedures conflict with those of the bylaws of the University of Nebraska or University of Nebraska-Lincoln, the latter two documents shall take precedence.

## II. Goals and Mission

1. The overall mission of NCMN is to be a center of excellence in research, graduate and postdoctoral education, and service and outreach in the areas of materials, nanoscience and nanotechnology. The *goals* and *objectives* of NCMN are to promote nationally leading and well-funded research and graduate education in

selected interdisciplinary research areas. Additional *objectives* are to organize large collaborative research programs and focused research groups, operate Central or Core Facilities, manage an education-outreach program, and conduct a weekly seminar series.

2. An *academic goal* of NCMN is to support and administer the *Nanoscale Science and Technology Program of Excellence* (NST POE) at UNL. The NST POE is an interdisciplinary activity that supports the strategic agendas and priorities in materials and nanoscience in the College of Arts and Sciences (CAS) and College of Engineering (COE). For NST POE matters, NCMN reports to the Executive Vice Chancellor (EVC) and collaborates with CAS and COE in supporting fully or partially the salaries of a number of faculty. The NST POE also supports in part new hires and their equipment costs, interdisciplinary courses in nanoscience and nanotechnology, and partial administrative costs for NCMN.
3. An additional *goal* of NCMN is to obtain funding for and administer major national grants such as the Nebraska Nanoscale Facility (NNF) supported by the NSF National Nanotechnology Coordinated Infrastructure (NNCI) and the Keck Center for Quantum Information Systems supported by the W.M. Keck Foundation. These are intended to provide nanofabrication and characterization facilities to regional and national universities and companies (NNF) or to support focused research efforts of collaborative faculty at UNL.

### III. Management Structure

The Center Leadership includes a Director who reports primarily to the Vice Chancellor for Research and Economic Development (VCRED) and also for academic matters to the EVC. The Director collaborates closely with the Deans of CAS and COE on faculty and research matters, and oversees various NCMN staff as outlined below.

1. *Director Responsibilities:* The Director provides administrative oversight of the Center and its staff as follows.
  - Developing, reviewing, and implementing short-term (several years) and long-term (~ 10 years) goals and strategic plans. These are performed with Center faculty, staff and Advisory Committee.
  - Building of research excellence in materials and nanoscience at UNL and NU by fostering large interdisciplinary research collaborations. This is accomplished by leading these collaborations or arranging leadership for such efforts.
  - Directing and leading the Central/Core Facilities Specialists and Technologists to provide state-of-the-art experimental equipment to fabricate and characterize materials and nanostructures. This will often require the writing of equipment proposals to federal or university agencies.
  - Organizing and leading proposals, annual or other reports, and reviews to enable continued fiscal support from university and other agencies.

- Providing leadership concerning Center goals, directions, policies, procedures, budget, hiring, promotions, annual evaluations and salary recommendations to Deans of NST-POE faculty (as specified in certain MOUs) and other matters concerning the welfare of the Center. The Director may consult with the Advisory Committee regarding expenditure of funds and appoint other committees to assist in the business of the Center.
2. *Appointment of Director:* The Director is appointed by the VCRED, after appropriate consultation with the Faculty, advice from the Deans of CAS and COE, and with concurrence by the EVC.

When the office of the Director becomes vacant, the VCRED shall, in consultation with the EVC, Deans of CAS and COE, Advisory Committee and Faculty, formulate a mutually acceptable procedure for the selection of a new Director. Careful consultation with the Faculty of the Center is clearly an essential ingredient of any such procedure. In the event that a Search Committee is to be appointed by the VCRED, the Advisory Committee, in cooperation with the Faculty, shall advise the VCRED regarding appropriate Committee members. In the event that serious consideration is to be given only to internal candidates, the Advisory Committee shall conduct a poll of the Faculty, the purpose of which is to identify the potential candidates who would command the support of a substantial portion of the Faculty. Such information shall be available to both the VCRED and the Faculty for guidance in the final selection process.

If during the period of vacancy, it is necessary to appoint an Acting or Interim Director, the Advisory Committee, after consultation with the Permanent Faculty (tenured and tenure-track), shall make a recommendation to the VCRED for the appointment of an Acting or Interim Director. If the Director is to be absent on extended leave, he or she and the Advisory Committee shall, in a similar fashion, make recommendations for the Acting Appointment.

3. *Review of Director:* Present UNL policy requires a thorough periodic review of the Director by the VCRED and it is recommended that this happen every fifth year. This review is in addition to the annual evaluation of the Director.
4. *Administrative and Staff Positions:* Depending on grant support and other duties of the Director, additional administrative and staff positions may be appointed by the Director. For example, an Associate Director and/or Assistant Director may be appointed to handle selected duties such as facility oversight, education-outreach, financial aspects or other matters. These appointments are made in consultation with the VCRED, and they and their duties are announced to the faculty. These positions automatically become vacant upon the appointment of a new Director, but proper notice must be given to any individuals who will not be retained in their current positions. Several other administrative support and technical positions are appointed by the Director. These may include an Administrative Coordinator,

Program Associate, Business Manager, Accounting Clerk, Facility Program Manager, Specialists and Research Technologists.

5. *Advisory Committee:* The NCMN Advisory Committee consists of eight faculty representing the major research areas and departments associated with the Center. Four of these members shall be from departments defined here as Materials and NanoScience (MNS) (Physics (PHY), Chemistry (CHM) and Chemical and Biomolecular Engineering (CBE)), and four from departments defined here as Materials and NanoEngineering (MNE) (Mechanical and Materials Engineering (MME), Electrical and Computer Engineering (ECE), Civil and Environmental Engineering (CEE), Biological Systems Engineering (BSE), other Departments (OD)). These two departmental groups are defined somewhat arbitrarily in order to have approximately equal numbers of faculty in MNS and MNE, for reasons of equity in Advisory Committee representation. Committee members shall be appointed by the Director, but there shall be four members from MNS departments and four from MNE departments. There shall be at least one member from PHY, CHM, MME and ECE, but no department shall have more than two members. Appointments should be based on a high level of research activity, breadth of research areas, use of Central Facilities, participation in NCMN activities, and diversity. The Director should consult the existing Advisory Committee and department chairs for recommendations for new members. Membership terms are two years with a possible reappointment for one more term, but a member may not serve for more than four years consecutively. The terms of members should be staggered so that generally two members should be appointed each year. The Committee advises the Director on admission of new faculty as NCMN faculty, on budget matters, facility operations, annual evaluation of NST-POE faculty as specified by UNL policy, education-outreach activities, and other matters of interest. NCMN Advisory Committee members may be either tenure-track or research faculty at the level of assistant professor or above.
6. *Other Faculty Committees:* The Director may appoint several standing committees to assist in NCMN operations including the following.
  - Central-Facility Users Committee. Each committee has a Faculty Facility Advisor to oversee the Facility, evaluate the Specialist, and hold an annual meeting to discuss operations.
  - Education-Outreach Committee. This Committee assists the Assistant Director of Education-Outreach in operating K-12, university and public programs.
  - Fellowship Committee. Annual NCMN Fellowship Awards are given to outstanding senior graduate students.
  - Seminar Committee. This group is responsible for operating an excellent weekly NCMN Seminar Series with outstanding external and internal speakers.
  - Additional Committees for industrial and/or university outreach, major proposal development, or other opportunities at the discretion of the Director.

#### **IV. Faculty Membership**

1. *Faculty Membership Benefits:* There are many benefits to faculty from NCMN and from faculty participation therein. These benefits include: (1) Increased national and international reputation in materials and nanoscience leading to increased funding; (2) Increased large collaborative grants such as NSF-MRSEC, NSF-MRIs, Keck Center, DOD/MURI-type grants, NIST Nano Building, NSF-NNCI grant, etc.; (3) Faculty and staff salary support through large grants from NRI, NSF-NNCI, etc.; (4) Faculty hires supported by cluster-hire initiatives, e.g., NST-POE or Quantum Materials and Technologies; (5) Support of administrative and fiscal staff and Central Facility and Research Technologist staff; (6) Faculty start-up funds for new hires; (7) Central Facility support enabling usage by more than 400 unique users per year; (8) Faculty involvement in governance of NCMN through its Advisory Committee; (9) Faculty involvement in Facility operations through Faculty Central Facility Users Committees; (10) Graduate Student Fellowships for outstanding students in CAS and COE in their final year of Ph.D. research; (11) Research Enhancement Grants offered to faculty for equipment or new projects on a competitive basis when funds are available; (12) Equipment Proposal Matches for NSF or DOD major equipment competitions; (13) Education-Outreach Support for CAREER and other faculty proposals, and (14) NCMN Seminar support enabling faculty to bring outstanding speakers to UNL.

2. *Faculty Membership Policies*

- a. *Appointment of Members:* Any member of the University of Nebraska Faculty, including all campuses, may signify his/her desire to the Director to become a member of NCMN. The Director shall request the applicant to supply his/her *curriculum vitae* and a brief description of the research activities to be undertaken and usage of Central Facilities. These documents shall be presented to the Advisory Committee for approval, which normally will be forthcoming if the applicant's recent research record includes publications in journals covering condensed-matter and materials physics, materials chemistry, materials engineering, nanoscience, nanotechnology, or biomaterials. That is, such approval shall be withheld only on the ground that the applicant's field of interest is not within the general area of materials and nanoscience as defined by the Advisory Committee. In any case in which the application is denied, the candidate may appeal to the VCRED who will make a recommendation to the Director.
- b. *Committee Service:* Each UNL member of NCMN has the right to volunteer for and to serve on the various Committees discussed above if chosen by the Director.
- c. *Financial Support:* Each UNL member is entitled to submit proposals for NCMN enhancement funding when it is available, and when the faculty member contributes to NCMN's budget by return of F & A funds. Such proposals generally are evaluated by the Advisory Committee.

- d. *Facility Usage*: Each member shall be entitled to use the Central Facilities of NCMN assuming the member can pay the appropriate charges. If funds are available, NCMN members may receive subsidized rates over general university rates, and additional subsidized rates if their grants contribute to NCMN's budget by return of F & A funds.
- e. *Faculty Matters*: Each member of NCMN shall have the right to raise for consideration any matter related to the work or operation of NCMN. This can be done with the Director, Advisory Committee or in a general Faculty meeting, which the Director may call if he/she deems it advisable.
- f. *Responsibilities of NCMN Members*: These are important as well as the above-listed privileges. Each member is expected to show support for and interest in the development of NCMN. This includes active participation in seminars, inviting speakers, submitting publications and/or publication lists for annual and other reports, use of NCMN's Central Facilities when possible, participation in group proposals, teaching materials and nanoscience courses when possible, listing NCMN as a secondary address on publications, e-mails, etc.
- g. *F & A Grant Routing*: An important responsibility of NCMN Faculty is to associate an appropriate fraction of their efforts on research-grant routing forms with NCMN. This provides a small fraction of the indirect costs (F & A) to NCMN and these pooled funds are essential for supporting seminar speakers, fellowship awards, seed or enhancement grants, travel to obtain funding, etc. Faculty who do not cooperate in this aspect may be subject to certain limitations in funding or other privileges discussed above.
- h. *Emeritus Faculty*: NCMN faculty who retire and are appointed as Emeritus Faculty members by their departments are continued as NCMN Emeritus Faculty members unless or until they ask to withdraw.
- i. *Termination of Membership*: Faculty who enjoy privileges of NCMN members but who do not conform to the expectations regarding responsibilities may have their membership terminated by vote of the Advisory Committee.

## **V. Operations and Reviews**

- a. *Space*: The Voelte-Keegan Nanoscience Research Center (Nano Building) was obtained and funded primarily from a NIST grant organized and led by NCMN. The grant was for a "Nanoscience Metrology Facility" which included about one-third of the then shell floor space in the basement of Jorgensen Hall. The Nano Building was and is intended for use only as shared Central or Core Facilities open to all qualified faculty and their research groups. The Building was and is not intended to house individual faculty member laboratories. This policy has been codified in writing by the VCRED, a document held by the Director of NCMN. The Nano Building houses NCMN administrative, Specialist

and Technologist offices, Central/Core Facilities, offices for visitors, etc. If there are requests to change the allocations of space for NCMN operations, they should be taken to the Director who will consider these after consulting with the relevant NCMN staff and Advisory Committee. If there are issues that cannot be resolved in this process, the VCRED will be consulted for final determination.

- b. *Reviews:* As a Center that is Board of Regents approved and receives NRI funding, NCMN is subject to a comprehensive external review every seven years (see Office of the Executive Vice Chancellor website: <https://executivevc.unl.edu/academic-affairs/academic-program-planning/centers>). In addition, the focused subcenter of NCMN, the W.M. Keck Center, is scheduled to be reviewed at the same time as NCMN.
- c. *Related Centers/Programs:* NCMN actively seeks support for additional programs and centers that enhance materials and nanoscience research at UNL. Examples are the Nebraska Nanoscale Facility: National Nanotechnology Coordinated Infrastructure supported by NSF, the W.M. Keck Center, Nebraska EPSCoR awards and others. These grants are supported by the NCMN Central Facilities, NCMN's research expertise, education-outreach activities, and other synergistic programs.
- d. *Faculty Meetings:* At least once per year there is a meeting of Faculty Central Facility Users Committees, each chaired by the Facility's Faculty Advisor. Operations, equipment and related matters are discussed. Minutes of these meetings are included in the Annual Report of NCMN to the University. A general meeting of NCMN faculty may be held to discuss significant matters. This will be at the discretion of the Director with the approval of the Advisory Committee.
- e. *Adoption and Amendments:* This statement of organization and procedures shall be effective upon receiving a favorable majority vote of the total membership of the Advisory Committee, and ratification by a majority of faculty voting at a special meeting; the latter may be conducted by e-mail. Amendments of these procedures may be proposed by any NCMN faculty member. Such amendments shall be adopted upon a majority vote of members present at a general faculty meeting, or the vote may be conducted by e-mail if necessary. The Director will notify the VCRED, EVC and Deans of CAS and COE of amendments. Adoption of amendments pertaining to Director appointment, responsibilities and review, as well as faculty evaluation and space evaluation require additional approval of the VCRED.