# Pattern of Administration for The Ohio State University Department of Astronomy 

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## I. INTRODUCTION

This document provides a brief description of the Department of Astronomy as well as a description of its policies and procedures. It supplements the Rules of the University Faculty, and other policies and procedures of the University to which the Department and its faculty are subject. The latter rules, policies and procedures, and changes in them, take precedence over statements in this document. Guidelines that are typically subject to short-term changes, such as travel guidelines, will be kept as separate documents available internally through the Department web site.

This Pattern of Administration is subject to continuing revision. It must be reviewed and either revised or reaffirmed on appointment or reappointment of the Department Chair. This review is conducted by the department chair, who consults with the vice chair for administration and the steering committee as needed, and any substantive changes are reported to the full faculty for comment before the revised document is submitted for approval. However, revisions may be made at any time as needed. All revisions, as well as periodic reaffirmation, are subject to approval by the Office of the Dean of the College of Arts and Sciences (ASC) and the Office of Academic Affairs (OAA).

## II. DEPARTMENT MISSION

The mission of the Department of Astronomy is to carry out astronomical research at a level competitive with that of the best universities in the country, to provide world class graduate education, and to provide excellent undergraduate teaching at the introductory and major levels. Outstanding service at the department, university, and national levels, including outreach activities that share the excitement of our field with the general public, is essential to accomplishing this mission.

Excellence in research involves advancing our understanding of the universe and making those advances known through scholarly publications and presentations, stimulating the research work of graduate students and colleagues both at Ohio State and elsewhere, and establishing a reputation for independent work at the forefront of astronomical research. It necessitates hiring, and then promoting, only outstanding new faculty to preserve and enhance our college's strength in research.

Excellence in teaching involves (1) presenting engaging and content-rich astronomy undergraduate General Education (GE) courses that teach the principles and value of science as well as the specifics of astronomy, (2) providing courses for astronomy and physics majors that convey sufficient understanding of modern astronomy to prepare a strong student for graduate study in the field, (3) continuously updating our upper level undergraduate and graduate courses to present state-of-the-art information to our students in exciting and stimulating ways, (4) helping to develop excellent research and workplace skills for students through mentoring their work on research and dissertations, and (5) evaluating teaching quality, by peers and by students, to maintain our teaching at a consistently high level, individually and collectively.

Excellence in service involves (1) serving responsibly on committees within our department, College, and University; (2) serving on professional committees at state, national, and international levels, providing service in the form of peer-reviewing documents for journals and funding agencies, and evaluating colleagues at other universities involved in the promotion and tenure process; (3) promoting diversity, equity, and inclusion within the department, the College, the University, and the broader astronomy and STEM communities; and (4) sharing the fruits of our educational and research endeavors with the community outside of the university, especially through formal outreach programs.

## III. ACADEMIC RIGHTS AND RESPONSIBILITIES

In April 2006, the university issued a reaffirmation of academic rights, responsibilities, and processes for addressing concerns.

## IV. FACULTY AND VOTING RIGHTS

Faculty Rule 3335-5-19 defines the types of faculty appointments possible at The Ohio State University and the rights and restrictions associated with each type of appointment.

The Department of Astronomy makes tenure-track appointments with titles of instructor, assistant professor, associate professor, or professor. For purposes of governance, the voting members of the Department of Astronomy are all tenure-track faculty for whom the Department of Astronomy is the tenure-initiating unit (TIU) and those with joint tenure-track appointments in Astronomy regardless of the percentage of their appointment that resides in Astronomy. However, only tenure-track faculty for whom Astronomy is their TIU may vote on tenure-track faculty appointments, promotion, and tenure cases.

The Department of Astronomy makes research appointments. Research faculty titles are research assistant professor of astronomy, research associate professor of astronomy, and research professor of astronomy. Research faculty can comprise no more than $20 \%$ of the tenure-track faculty. Research faculty may be invited to participate in discussions on nonpersonnel matters but may not vote on them, and they may not participate in tenure-track personnel decisions. Research faculty may vote on research faculty appointments and promotions.

The Department of Astronomy makes associated faculty appointments. Associated faculty titles include tenure-track faculty on less than a $50 \%$ appointment, adjunct titles, lecturer titles, and visiting titles. Associated faculty may be invited to participate in discussions on non-personnel matters, but may not participate in personnel matters, including appointment, promotion and tenure reviews, and may not vote on any matter.

Faculty on courtesy appointments or associated faculty (as described in the Department Appointments, Promotion, and Tenure document) and professional staff do not have
voting privileges, but may be formally or informally consulted by the faculty or by the Chair on relevant issues.

Emeritus faculty in this department are invited to participate in discussions on nonpersonnel matters, but may not participate in personnel matters, including appointment, promotion and tenure reviews, and may not vote on any matter.

Unless otherwise provided for (noting appointments, promotion, and tenure issues in particular), there is a presumption favoring majority faculty rule on all matters covered by the Pattern of Administration. The majority vote shall be more than half of all votes cast, including, when allowed, mail, and e-mail balloting. Abstentions do not count towards vote totals. One half of eligible voters in any case will constitute a quorum.

Detailed information about the appointment criteria and procedures for the various types of faculty appointments is provided in the Appointments, Promotion and Tenure document.

## V. ORGANIZATION OF DEPARTMENT SERVICES \& STAFF

The tenure-track faculty, led by the Chair, constitute the governing body of the Department. The presumption is that the Chair functions as the first among equals and to the fullest extent possible leads the Department by consensus. The specific duties and responsibilities of the Chair and the faculty are described below. Both administrative and technical staff report directly to the Chair or his or her designate. Specifically delegated responsibilities include the following:

- Information technology (IT) staff, formally employees of the College, report on departmental matters to the faculty member who is Chair of the Computer Committee or his or her designate.
- Imaging Sciences Laboratory (ISL) staff report to the faculty member who is the Vice Chair for Instrumentation or his or her designate. ISL governance is described in the Appendix to this document.
- The Planetarium Director is reviewed annually by the Chair but reports on most matters to the faculty member who is Chair of the Outreach and Planetarium Committee.


## VI. OVERVIEW OF DEPARTMENTAL ADMINISTRATION \& DECISION-MAKING

Policy and program decisions are made in a number of ways: by the Department faculty as a whole, by standing or special committees of the Department, or by the Chair. The nature and importance of any individual matter determine how it is addressed. Department governance proceeds on the general principle that the more important the matter to be decided, the more inclusive participation in decision making needs to be. Open discussions, both formal and informal, constitute the primary means of reaching decisions of central importance.

## VII. DEPARTMENT ADMINISTRATION

## A. CHAIR

The primary responsibilities of the chair are set forth in Faculty Rule 3335-3-35. This rule requires the Chair to develop, in consultation with the faculty, a Pattern of Administration with specified minimum content. The rule, along with Faculty Rule 3335$\underline{6}$ also requires the Chair to prepare, in consultation with the faculty, a document setting forth policies and procedures pertinent to promotion and tenure (the Appointments, Promotion, and Tenure document).

Other responsibilities of the Chair, not specifically noted elsewhere in this Pattern of Administration, are paraphrased and summarized below.

- To have general administrative responsibility for Department programs, subject to the approval of the Dean of the College or his or her designee, and to conduct the business of the Department efficiently. This broad responsibility includes the acquisition and management of funds and the hiring and supervision of faculty and staff.
- To plan with the members of the faculty and the Dean of the College or his or her designee a progressive program; to encourage research and educational investigations.
- To evaluate and improve instructional and administrative processes on an ongoing basis; to promote improvement of instruction by providing for the evaluation of each course when offered, including written evaluation by students of the course and instructors, and periodic course review by the faculty.
- To evaluate faculty members annually in accordance with both University and Department established criteria; to inform faculty members when they receive their Annual Review of their right to review their primary personnel file maintained by the Department and to place in that file a response to any evaluation, comment, or other material contained in the file.
- After consultation with the eligible faculty, to recommend appointments, promotions, dismissals, and matters affecting the tenure of members of the Department faculty to the Dean of ASC, in accordance with procedures set forth in Faculty Rule 3335-6 and 3335-7 and the Department's Appointments, Promotion and Tenure document.
- To see that all faculty members, regardless of their assigned location, are offered the departmental privileges and responsibilities appropriate to their rank; and in general to lead in maintaining a high level of morale.
- To maintain a curriculum vitae for all personnel teaching a course in the department's curriculum.
- To see that adequate supervision and training are given to those members of the faculty and staff who may profit by such assistance.
- To prepare, after consultation with the faculty, annual budget recommendations for the consideration of the dean of the college.
- To facilitate and participate in prescribed academic program review processes, in collaboration with the dean of the college and the Office of Academic Affairs.

Day-to-day responsibility for specific matters may be delegated to others, but the Chair retains final responsibility and authority for all matters covered by this Pattern of Administration, subject when relevant to the approval of ASC, OAA, and the Board of Trustees.

Operational efficiency requires that the Chair exercise a degree of autonomy in establishing and managing administrative processes. The articulation and achievement of Department academic goals, however, is most successful when all faculty participate in discussing and deciding matters of importance. The Chair will therefore consult with the faculty on all educational and academic policy issues and will respect the principle of majority rule. When a departure from majority rule is judged to be necessary, the Chair will explain to the faculty the reasons for the departure, ideally before action is taken, in accordance with Faculty Rule 3335-3-35, section (C)(2)(d), which provides for departure of the Chair's decision from faculty recommendation.

## B. OTHER ADMINISTRATORS

## 1. VICE CHAIR FOR ADMINISTRATION

The Vice Chair for Administration (hereafter simply Vice Chair) assists the Chair in administration of the Department. The Chair may delegate certain of his or her responsibilities on either a short-term or long-term basis.

The Vice Chair must be a tenured member of the faculty and is selected by the Chair and approved by the Dean or his or her designee.

The Vice Chair position is intended to rotate among eligible faculty. Normally the appointment will be for one or two years, with no presumption of continuation. One goal of the Vice Chair position is to broaden the number of faculty with administrative knowledge of the department.

## 2. VICE CHAIR FOR INSTRUMENTATION

The Vice Chair for Instrumentation (VCI) is the formal point of contact between the faculty and the Imaging Sciences Laboratory (ISL). The VCI is the executive officer of the ISL and carries the responsibility of ensuring that the ISL is meeting the scientific and strategic needs of the Department based on priorities established by the Imaging Sciences Committee (ISC) and approved by the Department Chair. The VCI is appointed by the Department Chair and must be a tenured member of the faculty. The VCI approves internal purchases in the same way a Principal Investigator approves charges on externally funded projects.

Some management tasks cut across multiple areas of technical responsibility, but are not tasks that need to be carried out by faculty. The VCI may thus choose to delegate some management tasks to ISL staff.

## C. COMMITTEES

Much of the development and implementation of the Department's policies and programs is carried out by standing and ad hoc committees.

## 1. STANDING COMMITTEES

The principal standing committees involved in the Department decision-making processes and their duties are the following:

| Award Nominations Committee | identifies opportunities to nominate faculty, staff, <br> and students for internal or external awards. <br> Organizes nominations in consultation with the <br> Chair. |
| :--- | :--- |
| Computer Committee | advises the Chair regarding acquisition and <br> allocation of computer resources. Sets policies on <br> use of information technology resources in the <br> Department. Supervises information technology <br> support staff. |
| Curriculum Committee | recommends graduate and undergraduate course <br> curricula. |
| Departmental Review Committees | review Assistant and Associate Professors annually <br> and provide written reports to those tenured faculty <br> (and nonprobational research faculty, when a <br> candidate is a member of the research faculty) of <br> higher rank than the person being reviewed. The <br> latter group constitutes the Chair's Faculty Advisory <br> Committee for tenure and/or promotion (see the |
| Department's Appointments, Promotion, and |  |

$\left.\begin{array}{ll}\text { Diversity Committee } & \begin{array}{l}\text { identifies opportunities to improve communication } \\ \text { in the department about diversity, equity, and } \\ \text { inclusion issues and to improve recruiting of and } \\ \text { outreach to minorities, women, and } \\ \text { underrepresented groups at all levels. May include } \\ \text { student and postdoc representatives. }\end{array} \\ \text { Graduate Studies Committee } & \begin{array}{l}\text { oversees and administers the graduate degree } \\ \text { programs. Formulates policies, rules, and } \\ \text { procedures for the graduate program. Oversees the } \\ \text { process of candidacy examinations, assigns }\end{array} \\ & \begin{array}{l}\text { Teaching and Research Associateships, nominates } \\ \text { students for fellowships. }\end{array} \\ \text { Graduate Admissions Committee } & \begin{array}{l}\text { oversees and administers the annual process of } \\ \text { graduate admissions and recruitment }\end{array} \\ \text { Imaging Sciences Committee } & \begin{array}{l}\text { provides strategic priorities for the ISL. Reviews } \\ \text { and evaluates faculty requests for ISL resources and } \\ \text { advises the Vice Chair for Instrumentation on ISL } \\ \text { resource allocations. Monitors progress on ISL }\end{array} \\ \text { projects to ensure that the ISL is meeting the }\end{array}\right\}$

Undergraduate Studies Committee advises undergraduate majors and honors students, conducts proficiency exams, evaluates transfer credit, assigns instructional aids to courses.

Members and chairs of the principal standing committees are appointed by the Chair to one-year terms which are renewable. The chairs of the Graduate Studies Committee and Undergraduate Studies Committee shall have the titles Director of Graduate Studies, and Director of Undergraduate Studies, respectively. The Chair is an ex officio member of all Department committees and may vote in any committee except the Departmental Review Committees and the Faculty Advisory Committee. Committees typically have 2-5 faculty members depending on the anticipated workload in a given year. Department committees do not normally have voting staff, postdoc, or student members. However, the committee chair and department chair may appoint staff, postdoc, or student members (voting or non-voting) by mutual agreement, and any committee may choose to invite others from outside the committee to participate in meetings or for consultation.

## 2. CCAPP SCIENCE BOARD

The Center for Cosmology and AstroParticle Physics (CCAPP) is a joint initiative of the Astronomy and Physics Departments. It is governed by a nine-member Science Board, comprised of four representatives of each department and the CCAPP Director ex officio. The Department of Astronomy's CCAPP representatives are elected annually by the faculty. In the course of making committee assignments each year, the Chair will identify faculty willing to stand for election and propose them as a slate of candidates. However, any other Astronomy faculty member may choose to stand for election by notifying the Chair.

In the interest of efficiency, the election of CCAPP representatives will typically be done by email, without faculty meeting discussion. However, any faculty member standing for election may request that a faculty meeting be held for discussion and election by secret ballot.

The operation and governance of CCAPP is described in the CCAPP POA and an MOU that details the financial arrangements among CCAPP, the departments, and ASC.

## 3. OTHER ELECTED COMMITTEE POSITIONS

Appointment to other elected committee positions, such as the ASC Senate representative, will follow the same procedure described above for CCAPP Science Board members.

## 4. SEARCH COMMITTEES

For each open faculty or staff position, the Chair shall form a search committee consisting of faculty and/or staff who are best qualified to judge candidates for that particular position. The search committee may include faculty and/or staff from other units, if appropriate. The Chair will usually not be a member of or chair a faculty search committee, but may be a member of or chair a staff search committee.

Details on faculty searches and hiring practices are covered in the Department Appointments, Promotion, and Tenure document.

For staff positions, the search committee reviews the qualifications of candidates and conducts interviews. The committee then makes a recommendation to the Chair which can take the form of a rank-ordered list or a recommendation to hire a single individual. The search committee may also advise the Chair that no suitable candidate was found. The Chair performs a final evaluation and selection and makes a recommendation to ASC. ASC must approve any hire that is made on central funds.

While the Department will attempt to hire the best candidate for each position, every attempt will be made to seek out qualified female and minority candidates and to encourage them to apply.

## 5. AD HOC COMMITTEES

The Chair, at his or her discretion or upon a formal recommendation of the faculty, may constitute ad hoc committees to deal with specific issues.

## D. FACULTY MEETINGS

In an effort to assure input from all faculty, regularly scheduled faculty meetings will be held at least once per academic term (except Summer). The Chair will provide to the faculty a schedule of Department faculty meetings at the beginning of each term via email, though additional meetings may be scheduled as needed on an ad hoc basis.. A call for agenda items and completed agenda will be delivered to faculty by e-mail before a scheduled meeting. Reasonable efforts will be made to call for agenda items at least seven days before the meeting, and to distribute the agenda by e-mail at least one day before the meeting.

A meeting of the Department faculty will also be scheduled on request of $25 \%$ of the Department tenure-track faculty. The Chair will make reasonable efforts to have the meeting take place within one week of receipt of the request.

Special policies pertain to voting on personnel matters, and these are set forth in the Department's Appointments, Promotion, and Tenure document.

For purposes of discussing Department business other than personnel matters, and for making decisions where consensus is possible and a reasonable basis for action, a quorum will be defined as a simple majority of all faculty eligible to vote.

Either the Chair or one-third of all faculty eligible to vote may determine that a formal vote conducted by written ballot is necessary on matters of special importance. For purposes of a formal vote, a matter will be considered decided when a particular position is supported by at least $51 \%$ of all faculty eligible to vote. Balloting will be conducted by mail or e-mail when necessary to assure maximum participation in voting.

When a matter must be decided and a simple majority of all faculty eligible to vote cannot be achieved on behalf of any position, the Chair will necessarily make the final decision.

The Department accepts the fundamental importance of full and free discussion but also recognizes that such discussion can only be achieved in an atmosphere of mutual respect and civility. Normally Department meetings will be conducted with no more formality than is needed to attain the goals of full and free discussion and the orderly conduct of business. However, Robert's Rules of Order will be followed when more formality is needed to serve these goals.

All faculty with voting privileges have the right to attend any faculty meeting, except in the case of annual review, promotion, and tenure discussions in which only the eligible faculty participate. The Chair may invite others, including associated faculty, faculty with courtesy appointments, emeritus faculty, research faculty, and guests from other departments to participate in a faculty meeting or a portion thereof.

It is the responsibility of the Chair to maintain and distribute minutes of all faculty meetings and to maintain records of all other actions covered by the Pattern of Administration.

## VIII. GUIDELINES ON FACULTY DUTIES \& RESPONSIBILITIES

The Department of Astronomy guidelines on faculty duties and responsibilities are intended to be consistent with OAA policy described in the OAA Policies and Procedures Handbook, Volume 1, Chapter 2, Section 1.4.3.

Faculty assignments are described in the initial letter of offer. Assignments and expectations for the upcoming year are addressed as part of the annual review by the Department Chair based on departmental needs as well as faculty productivity and career development.

During on-duty periods, faculty members are expected to be available for interaction with students, research, and departmental meetings and events even if they have no formal course assignment. On-duty faculty members should not be away from campus for extended periods of time unless on an approved leave (see section XI) or on approved travel.

Telework exception: Faculty members with responsibilities requiring in-person interaction are to work at a university worksite to perform those responsibilities. Telework and the use of remote, virtual meetings are allowed at the discretion of the Department Chair if such work can be performed effectively and faculty members are able to fulfill their responsibilities. Telework will be encouraged under certain circumstances if it serves the needs of the department, college, university, and/or community. The Department Chair has the discretion to require faculty to work on campus if there are concerns that responsibilities are not being fulfilled through telework.

The guidelines outlined here do not constitute a contractual obligation. Fluctuations in the demands and resources of the department and the individual circumstances of faculty members may warrant temporary deviations from these guidelines.

A full-time faculty member's primary professional commitment is to Ohio State University and the guidelines here are based on that commitment. Faculty who have professional commitments outside of Ohio State during on-duty periods (including teaching at another institution; conducting research for an entity outside of Ohio State; external consulting) must disclose and discuss these with the chair in order to ensure that no conflict of commitment exists. Information on faculty conflicts of commitment is presented in the OAA Faculty Conflict of Commitment policy.

In crisis situations, such as life-threatening disease (COVID, for example) or physical dangers (natural disasters, for example), faculty duties and responsibilities may be adjusted by the Department Chair to take into account the impact over time of the crisis. These adjustments may include modifying research expectations in order to maintain teaching obligations. These assignment changes must be considered in annual reviews.

## A. TENURE-TRACK FACULTY

Tenure-track faculty duties include teaching, research, and service. Teaching responsibilities are described below. Service activity includes, but is not limited to, administrative work for the Department, College, and University, service to the profession (reviewing grant proposals, manuscripts, and requests for telescope time, serving as an officer for a professional organization, etc.), and service to the local, state, national, and international community.

Every tenure-track faculty member shall be expected to make some contribution to teaching, research, and service, but the proportions of these contributions should be adjusted for each faculty member so as to take the best advantage of his or her interests, capabilities, and tenure status. It is the responsibility of the Chair to see that assignments are made to provide excellent instruction and to help ensure that the effort needed to fulfill the Department's teaching, research, and service mission is shared equitably among members of the faculty.

Tenure-track faculty are expected to vigorously pursue research in astronomy and to aggressively seek off-campus funding to support that research. The results of the research should be published in refereed journals and presented at scientific meetings. It is also expected that a hallmark of effective research-active faculty will include invitations to give talks at scientific meetings and colloquia at other research institutions on their research.

Service is an important part of a tenure-track faculty member's duties. In addition to Department, College, and University committees, participation in national or international advisory bodies, reviewing for journals or funding agencies, and public outreach activities are all recognized as service contributions. The amount of effort each faculty member devotes to service will depend in part on the effort spent on teaching and
research and in part on the abilities and interests of the faculty member. However, untenured faculty are encouraged not to devote an undue fraction of their time to service, since teaching and research are more important criteria for promotion and tenure.

To the extent feasible, the Chair will assign the most demanding service tasks, such as Director of Graduate Studies and Director of Undergraduate Studies, to tenured faculty.

## i. TENURE-TRACK FACULTY TEACHING LOAD GUIDELINES

The Departmental guidelines on teaching loads are intended to follow OAA guidelines as described in the OAA Policies and Procedures Handbook Chapter 2, 1.4.3.1.1.

Teaching includes, but is not limited to, formal courses taught, undergraduate and graduate student advising, serving on undergraduate and graduate written and oral examination committees, guidance of student research, and development of instructional materials.

Assignments of faculty duties in teaching formal courses and in service to the Department are made by the Chair and Vice Chair, with the advice of the Steering Committee as necessary.

All courses offered by the Department, from introductory service courses through graduate level, are normally taught by scientists possessing the Ph.D. degree. Exceptions will usually be advanced graduate students who desire some teaching experience teaching at the 1000-level.

The normal teaching load in the Department of Astronomy, absent adjustments for reasons described below, is two regular courses per year. However, the Chair has discretion to count unusually demanding assignments as more than one course and to decide on the appropriate amount of teaching credit to assign to courses that are team taught and/or carry fewer than three credit hours and/or use pre-recorded online materials. In assessing the effort required for a faculty member to teach an assigned course, the Chair shall consider, among other things, the credit hours of the course, the number and level of students in the course, how many times the faculty member has taught that course previously, the anticipated effort in preparation required, the type of examinations given, and the amount of support provided (e.g., GTAs). Faculty are also expected to share in the mentoring process of training students for research by supervising undergraduate honors theses, graduate independent study or directed research courses, and/or Ph.D. dissertations.

Faculty in their first year at Ohio State normally receive a Special Assignment that reduces their teaching load. Generally, untenured faculty should spend a larger portion of their time on research, with correspondingly lighter service responsibilities and teaching assignments that limit new course preparation, compared with tenured faculty.

Faculty who are not actively engaged in research can expect to have larger teaching and service loads. As the definition of "actively engaged" is likely to be somewhat controversial and difficult to specify, the Chair will consult with the Steering Committee before increasing the teaching or service loads of a faculty member.

Faculty with heavy administrative duties, including the Chair, the Vice Chairs, and the Directors of Graduate and Undergraduate Studies, are eligible for reduced teaching loads when circumstances allow.

## ii. SPECIAL ASSIGNMENTS

Special Assignments (SAs) are normally one semester in length and are designed to provide a faculty member time away from classroom teaching and some other responsibilities in order to concentrate effort on research. SAs are usually, but not necessarily, provided to faculty to develop a new research skill, initiate a new project, or complete an ongoing project. SAs of shorter duration may be provided for such purposes as facilitating travel related to research that is less than a semester in duration but more than a week or two, provided classroom teaching is not disrupted.

Faculty members who desire an SA should discuss the matter with the Department Chair during their annual evaluation or as soon thereafter as possible. The Department Chair will indicate whether submission of a full proposal articulating the purpose and nature of the SA is appropriate. The Chair will normally announce decisions regarding SAs for the next academic year no later than June 30 of the previous academic year, but retains the option of making decisions regarding proposals at other times when circumstances warrant such flexibility.

## B. RESEARCH FACULTY

Research faculty members are expected to contribute to the university's mission via research.

In accord with Faculty Rule 3335-7-34,
a research faculty member may, but is not required to, participate in limited educational activities in the area of his or her expertise. However, teaching opportunities for each research faculty member must be approved by a majority vote of the department's tenure-track faculty. Under no circumstances may a member of the research faculty be continuously engaged over an extended period of time in the same instructional activities as tenuretrack faculty.

Research faculty expectations for research are similar to those for the tenure-track, albeit proportionally greater since $100 \%$ of effort for research faculty members is devoted to research. Specific expectations are spelled out in the letter of offer.

## C. ASSOCIATED FACULTY

Compensated associated faculty members are expected to contribute to the university's mission via teaching or research depending on the terms of their individual appointments.

Faculty members with tenure-track titles and appointments $<50 \%$ FTE will have reduced expectations based on their appointment level.

Expectations for compensated visiting faculty members will be based on the terms of their appointment and are comparable to that of tenure-track faculty members except that service is not required.

## D. MODIFICATION OF DUTIES

The Department of Astronomy strives to be a family-friendly unit in its efforts to recruit and retain high quality faculty members. To this end, the department is committed to adhering to the College of Arts and Sciences' guidelines on modification of duties to provide its faculty members flexibility in meeting work responsibilities within the first year of childbirth/adoption/fostering, or care for an immediate family member who has a serious health condition, or a qualifying exigency arising out of the fact that the employee's immediate family member is on covered active duty in a foreign country or call to covered active duty status. See the college pattern of administration for details.

The faculty member requesting the modification of duties for childbirth/adoption/fostering and the department chair should be creative and flexible in developing a solution that is fair to both the individual and the unit while addressing the needs of the university. Expectations must be spelled out in an MOU that is approved by the dean. See the OHR Parental Care Guidebook for additional details. See also the Parental Leave Policy in Section XI.

## IX. COURSE OFFERINGS \& TEACHING SCHEDULES

The Curriculum Committee, Undergraduate Studies Committee, and Graduate Studies Committee have collective responsibility for identifying desirable changes in the undergraduate or graduate course curricula, proposing them to the Chair and the faculty, and implementing them if approved. All curricular changes are subject to approval by the Curriculum Committee and concurrence of the Chair, who is responsible for assessing the fiscal implications and feasibility of curriculum changes. Major changes, e.g. to the structure of the graduate or undergraduate curriculum, should be approved by the full faculty.

Each Spring, the Chair should propose a schedule of courses to be offered during the following academic year and invite comment from the faculty. While every effort will be made to accommodate the individual preferences of faculty in teaching assignments, the Department's first obligation is to offer the courses needed by students at times most likely to meet student needs. To assure classroom availability, reasonable efforts must be made to distribute course offerings across the day and week. To meet student needs, reasonable efforts must be made to assure that course offerings match student demand and that timing conflicts with other courses students are known to take in tandem are avoided. A scheduled course that does not attract the minimum number of students
required by Faculty Rule 3335-8-16 may be canceled, and the faculty member scheduled to teach that course will be assigned to another course for that or a subsequent semester.

## X. ALLOCATION OF DEPARTMENT RESOURCES

The Chair is responsible for the fiscal and academic health of the Department and for assuring that all resources-fiscal, human, and physical-are allocated in a manner that will optimize achievement of Department goals.

The Chair will discuss the Department budget at least annually with the faculty and attempt to achieve consensus regarding the use of funds across general categories. However, final decisions on budgetary matters rest with the Chair.

Research space shall be allocated on the basis of research productivity, with particular attention paid to external funding, and will be reallocated periodically as these facultyspecific variables change. The allocation of office space will include considerations of faculty preferences and best overall use of space to enhance efficiency, communication, and morale. Recommendations to the Chair will be made annually by the Space Allocation Committee.

The allocation of salary funds is discussed in the Appointments, Promotion, and Tenure document.

## XI. LEAVES \& ABSENCES

In general, there are four types of leaves and absences taken by faculty (in addition to parental leave, which is detailed in the Parental Care Guidebook). The University's policies with respect to leaves and absences are set forth in the OAA Policies and Procedures Handbook and Office of Human Resources Policies and Forms website. The information provided below supplements these policies.

## A. DISCRETIONARY ABSENCE

Faculty are expected to complete a travel request or a request for absence form well in advance of a planned absence (e.g. as for attendance at a professional meeting or to engage in consulting) to provide time for its consideration and approval and time to assure that instructional and other commitments are covered. Discretionary absence from duty is not a right, and the Chair retains the authority to disapprove a proposed absence when it will interfere with instructional or other comparable commitments. Such an occurrence is most likely when the number of absences in a particular academic term is substantial. Faculty Rules require that the OAA approve any discretionary absence of ten or more days (see Faculty Rule 3335-5-08).

## B. ABSENCE FOR MEDICAL REASONS

When absences for medical reasons are anticipated, faculty members are expected to complete a request for absence form as early as possible. When such absences are unexpected, the faculty member, or someone speaking for the faculty member, should let the Chair know promptly so that instructional and other commitments can be managed. Faculty members are always expected to use sick leave for any absence covered by sick leave (personal illness, illness of family members, medical appointments). Sick leave is a benefit to be used-not banked. See OHR Policy 6.27 for details.

## C. UNPAID LEAVES OF ABSENCE

The university's policies with respect to unpaid leaves of absence and entrepreneurial leaves of absence are set forth in OHR Policy 6.45.

A faculty member may request an unpaid leave of absence for personal or professional reasons. Professional reasons would include an opportunity to accept a visiting appointment at another institution. A faculty member desiring an unpaid leave of absence should submit a written request for the absence as far in advance as possible of the time for which the leave is desired. Approval will be based on, but not limited to, the nature of the request, the extent to which the faculty member's responsibilities can be covered or deferred during the proposed absence, and the positive or negative impact on the Department of the proposed absence. Unpaid leaves of absence require the approval of the Dean or designee, the Office of Academic Affairs, and Board of Trustees.

## D. FACULTY PROFESSIONAL LEAVE

Faculty Professional Leave (FPL) constitutes a more formal departure from regular academic duties than a Special Assignment and may be one or two or three semesters in length (including summer term as a semester) for 9-month or 12-month faculty. FPLs involve salary reductions and other considerations established by the Ohio legislature and University Board of Trustees, and faculty considering an FPL should fully acquaint themselves with these policies before applying for leave.

Faculty members who desire an FPL should discuss the matter with the Department Chair as early as possible - advance planning of at least a year is often required for a successful FPL. The Department Chair will advise whether submission of a full proposal articulating the purpose and nature of the FPL is appropriate. ASC maintains and posts an annual schedule for reviewing FPL requests, available here, which typically requires submission of proposals in early January of the academic year preceding that in which FPL is requested.

The Chair's recommendation to the dean regarding an FPL proposal will be based on the quality of the proposal and its potential benefit to the Department and to the faculty member, as well as the ability of the Department to accommodate the leave at the time requested.

## E. PARENTAL LEAVE

The university, the college, and this department recognize the importance of parental leave to faculty members. Details are provided in the OHR Parental Care Guidebook, Paid Time Off Program Policy 6.27, and the Family and Medical Leave Policy 6.05.

## XII. SUPPLEMENTAL COMPENSATION AND PAID EXTERNAL CONSULTING ACTIVITY

Information on faculty supplemental compensation is presented in the OAA Policy on Faculty Compensation. Information on paid external consulting is presented in the university's Policy on Faculty Paid External Consulting. The information provided below supplements these policies.

This Department adheres to these policies in every respect. In particular, this Department expects faculty members to carry out the duties associated with their primary appointment with the University at a high level of competence before seeking other income-enhancing opportunities. All activities providing supplemental compensation must be approved by the Department Chair regardless of the source of compensation. External consulting must also be approved. Approval will be contingent on the extent to which a faculty member is carrying out regular duties at an acceptable level, the extent to which the extra income activity appears likely to interfere with regular duties, and the academic value of the proposed consulting activity to the Department. In addition, it is University policy that faculty may not spend more than one business day per week on supplementally compensated activities and external consulting combined.

Faculty with an administrative position (for example, chair, associate/assistant dean, center director) remain subject to the Policy on Faculty Paid External Consulting and with appropriate approval, are permitted to engage in paid external work activities. However, faculty members with administrative positions are not permitted to accept compensation/honoraria for services that relate to or are the result of their administrative duties and responsibilities.

Faculty who fail to adhere to the University's policies on these matters, including seeking approval for external consulting, will be subject to disciplinary action.

OAA also requires colleges and departments to determine a process for a faculty member to request permission to use a textbook or other material that is authored by that faculty member and the sale of which results in a royalty being paid to him or her. If the textbook is one already in use for the course when taught by other faculty, then the Department Chair may approve the request. If the textbook was not previously used for the course, then the Department Chair will make a decision after consultation with the Director of Undergraduate Studies (for undergraduate courses) or Director of Graduate Studies (for graduate courses), or with other members of the Undergraduate or Graduate Studies Committee if the Chair is conflicted.

Occasionally, tenure-track faculty may request to teach an additional course during the Summer Term. The Department of Astronomy policy is that compensation for off-duty teaching will be flat rate, i.e., a fixed amount regardless of the rank, seniority, or salary level of the faculty member. The amount will be fixed annually at the same rate associated faculty are compensated for teaching individual course sections.

## XIII. FINANCIAL CONFLICTS OF INTEREST

The University's policy with respect to financial conflicts of interest is set forth in university's Policy on Faculty Financial Conflict of Interest.. A conflict of interest exists if financial interests or other opportunities for tangible personal benefit may exert a substantial and improper influence upon a faculty member or administrator's professional judgment in exercising any University duty or responsibility, including designing, conducting or reporting research.

Faculty members are required to file conflict of interest screening forms annually, and more often if prospective new activities pose the possibility of financial conflicts of interest. Faculty who fail to file such forms or to cooperate with University officials in the avoidance or management of potential conflicts will be subject to disciplinary action.

In addition to financial conflicts of interest, faculty must disclose any conflicts of commitment that arise in relation to consulting or other work done for external entities. Further information about conflicts of commitment is included in section VIII above.

## XIV. GRIEVANCE PROCEDURES

Members of the Department with grievances should discuss them with the Chair who will review the matter as appropriate and either seek resolution or explain why resolution is not possible. Content below describes procedures for the review of specific types of complaints and grievances

## A. SALARY GRIEVANCES

A faculty or staff member who believes that his or her salary is inappropriately low should discuss the matter with the Chair. The faculty or staff member should provide documentation to support the complaint.

Faculty members who are not satisfied with the outcome of the discussion with the Chair and wish to pursue the matter may be eligible to file a more formal salary appeal (see the Office of Academic Affairs Policies and Procedures Handbook.

Staff members who are not satisfied with the outcome of the discussion with the Chair and wish to pursue the matter should contact Employee and Labor Relations in the Office of Human Resources.

## B. FACULTY AND STAFF MISCONDUCT

Complaints alleging faculty misconduct or incompetence should follow the procedures set forth in Faculty Rule 3335-5-04.

Any student, faculty, or staff member may report complaints against staff to the Department Chair. The Office of Employee and Labor Relations in the Office of Human Resources can provide assistance with questions, conflicts, and issues that arise in the workplace.

## C. FACULTY PROMOTION AND TENURE APPEALS

Promotion and tenure appeals procedures are set forth in Faculty Rule 3335-5-05.

## D. HARASSMENT, DISCRIMINATION, AND SEXUAL MISCONDUCT

The Office of Institutional Equity exists to help the Ohio State community prevent and respond to all forms of harassment, discrimination, and sexual misconduct.

Ohio State's policy and procedures related to affirmative action and equal employment opportunity are set forth in the university's policy on affirmative action and equal employment opportunity.

The University's policy and procedures related to nondiscrimination, harassment, and sexual misconduct are set forth in university's policy on nondiscrimination, harassment, and sexual misconduct.

## E. VIOLATIONS OF LAWS, RULES, REGULATIONS, OR POLICIES

Concerns about violations of laws, rules, regulations, or policies affecting the university community should be referred to the Office of University Compliance and Integrity. Concerns may also be registered anonymously through the Anonymous Reporting Line.

## F. COMPLAINTS BY AND ABOUT STUDENTS

Normally student complaints about courses, grades, and related matters are brought to the attention of individual faculty members. In receiving such complaints, faculty should treat students with respect regardless of the apparent merit of the complaint, and provide a considered response. When students bring complaints about courses and instructors to the Department Chair, the Chair will first ascertain whether the students require confidentiality or not. If confidentiality is not required, the Chair will investigate the matter as fully and fairly as possible and provide a response to both the students and any affected faculty. If confidentiality is required, the Chair will explain that it is not possible to fully investigate a complaint in such circumstances and will advise the student(s) on
options to pursue, without prejudice as to whether the complaint is valid or not. See Faculty Rule 3335-8-23.

Faculty complaints regarding students must always be handled strictly in accordance with University rules and policies. Faculty should seek the advice and assistance of the Chair and others with appropriate knowledge of policies and procedures when problematic situations arise.

## G. ACADEMIC MISCONDUCT

Faculty members will report any instances of academic misconduct to the Committee on Academic Misconduct in accordance with the Code of Student Conduct. See also Board of Trustees Rule 3335-23-05.

## APPENDIX A: The Allan Markowitz Endowed Chair

The Allan Markowitz Endowed Chair was established by a gift from PhD alumnus Allan Markowitz. The Chair provides annual support for the recipient's scholarly activities, and during the five-year term the recipient of this support is recognized as Allan Markowitz Chair of Astronomy. The annual endowment distribution, less some portion applied by ASC to salary offset, will be provided to the Markowitz Chair as a research fund, to be used at the Chair's discretion consistent with university policies. Funds may be carried over from year to year. Each holder of the Chair will receive the funds from five consecutive annual distributions, beginning with the distribution immediately preceding the appointment, unless he or she vacates the position in fewer than five years.

The department chair of astronomy will announce an anticipated vacancy in the Markowitz Chair as the current appointee approaches the end of a regular term, typically in the spring of the preceding academic year. The Chair may also become vacant if the faculty appointee resigns or retires from the university, the faculty member is appointed to a different endowed position, or the faculty member is on extended leave and not able to use the endowed funds. The department faculty may vote to hold the Chair vacant for use in recruiting an anticipated senior faculty hire; otherwise the nomination and selection procedure below will be followed. The Chair will not be held vacant for more than two consecutive years.

Faculty eligible for nomination are professors with at least $50 \%$ appointment in the Department of Astronomy. There is no restriction on field of research within astronomy and astrophysics. Members of the faculty may not hold two funded endowed positions simultaneously. Distinguished college professors and distinguished university professors may hold the Markowitz Chair simultaneously with their appointments. Consecutive terms in the Markowitz Chair are not allowed, but a former holder of the Markowitz Chair is eligible if another faculty member has held the Chair in the interim.

The department chair will invite nominations from all tenure-track faculty members of the Astronomy Department, with self-nominations allowed. All nominees will be asked to provide a curriculum vitae and a 2-page statement of interest that summarizes their scientific and departmental contributions, their research plans for the upcoming five years, and the ways that the Markowitz Chair funds will support that research.

The criteria for evaluating nominees for the Markowitz Chair are:

1. An exceptional record of cutting-edge research.
2. Contributions and commitment to the department's research, teaching, and service mission.

The department chair will appoint an advisory committee consisting of four Astronomy faculty who are not themselves nominees, representing a breadth of research interests, plus one faculty member from another department. The advisory committee will be given the $c v$ and nomination statements of all nominees. The advisory committee will meet jointly with the department chair to give their input on the Markowitz Chair selection. Informed
by this input, the department chair will present his or her recommendation to the divisional dean of natural and mathematical sciences and the dean of the College of Arts and Sciences. The dean makes the final decision and issues the letter of appointment, which requires final approval by the Office of Academic Affairs and the university's Board of Trustees.

In the event that the department chair is a nominee for the Markowitz Chair, his or her role in the selection process will instead be played by the divisional dean of natural and mathematical sciences or by a designee selected by the divisional dean.

Once the five year funded term of the Markowitz Chair is complete, the holder is eligible for other departmental endowed positions in accord with their own criteria.

## APPENDIX B: The Henry L. Cox Endowed Professorship

The Henry L. Cox Endowed Professorship rotates between the departments of astronomy and physics. The funded term of a given appointment is five years. Consecutive terms cannot be served because the professorship alternates between faculty members whose tenure initiating unit is the department of physics and faculty members whose tenure initiating unit is the department of astronomy. The professorship provides annual support for the recipient's scholarly activities, and during the five-year term the recipient of this support is recognized as The Henry L. Cox Professor. The annual endowment distribution will be provided to the Cox Professor as a research fund, to be used at the Professor's discretion consistent with university policies. Funds may be carried over from year to year. Each holder of the Professorship will receive the funds from five consecutive annual distributions, beginning with the distribution immediately preceding the appointment, unless he or she vacates the position in fewer than five years.

The department chairs of physics and astronomy will announce an anticipated vacancy in the Cox professorship as the current appointee approaches the end of a regular term. The professorship may also become vacant if the faculty appointee resigns or retires from the university, the faculty member is appointed to a different endowed chair, or the faculty member is on extended leave and not able to use the endowed funds. Distinguished college professors and distinguished university professors may hold the Cox Professorship simultaneously with their appointments.

In the event that the professorship becomes vacant in fewer than five years, the department chairs will decide whether to select an appointee from the current department for the remainder of the term or to immediately rotate to the alternate department. The procedures for nomination and selection are the same in either case.

The department chairs will invite nominations from all tenure-track faculty members of the faculty in both departments, with self-nominations allowed. Nominees must be tenured associate professors or professors and may be previous holders of the Cox professorship. All nominees will be asked to provide a curriculum vitae and a 2-page statement of interest.

The criteria for evaluating nominees for the Cox Professorship are:

1. An exceptional record of cutting-edge research.
2. Contributions and commitment to the department's research and teaching mission.
3. Contributions to scholarship at the intersections of astrophysics, cosmology, and the physics of fundamental particles and fields.

The department chairs will appoint a consultation committee consisting of two faculty from each department who are not themselves nominees, plus one faculty member from another department. The consultation committee will be given the $c v$ and nomination statements of all nominees. The department chairs will present their recommendation to the consultation committee in person and solicit the committee's feedback. After considering this feedback, they will present their recommendation to the divisional dean of
natural and mathematical sciences and the executive dean of the College of Arts and Sciences. The executive dean makes the final decision and issues the letter of appointment, which requires final approval by the Office of Academic Affairs and the university's Board of Trustees.

In the event that a department chair is a nominee for the professorship, his or her role in the selection process will instead be played by the divisional dean of natural and mathematical sciences.

Members of the faculty may not hold two funded endowed professorships simultaneously. Once the five year funded term of the Cox professorship is complete, the holder is eligible for other departmental professorships.

# APPENDIX C: Patterns of Administration for the Imaging Sciences Laboratory of the Department of Astronomy of The Ohio State University 

## Mission Statement:

The purpose of the Imaging Sciences Laboratory (ISL) is to support the research and teaching mission of the Department of Astronomy through design, development, construction, deployment, and maintenance of astronomical instrumentation, including telescope subsystems and controls, that enable faculty, staff, and students to engage in forefront research, particularly in those areas that are of great scientific value and strategic importance to the Department. The ISL supports the teaching mission of the Department through training of instrumentation-oriented students and postdocs. The ISL also participates in instrumentation development for non-OSU facilities as possible and practicable, to the extent that these external projects promote the scientific and strategic goals of the Department.

## Operational Philosophy:

The ISL is a Department of Astronomy resource that is funded (a) primarily by the University through the Department of Astronomy and (b) in part through externally funded projects. It follows that allocation of this resource should be determined by the tenure-track faculty in accordance with Department goals. Projects can be initiated by faculty, scientific staff, or ISL staff. Proposed projects will be reviewed by faculty or designates (which can include external experts), depending on the scope of the project. Approved projects will be led (a) by a Principal Investigator (PI) in the case of externally funded projects or (b) by a Project Leader (PL) in the case of projects that are largely funded through internal sources. This distinction is made because PIs have fiscal authority over their OSURF projects whereas only the Vice Chair for Instrumentation (VCI) is authorized to approve charges on Departmental ORGs (see below). For externally funded projects, PIs will have ultimate responsibility and authority for expenditures charged to external awards, but the VCI has authority over use of ISL resources. For internally funded projects, responsibility and authority for both charges and ISL resources resides with the VCI.

PIs and PLs will need to develop their working relationship with the ISL on an individual basis: some PIs like to be involved in development of an instrument, and this is to be encouraged as long as it is not disruptive and does not adversely affect other ISL activities. Other PIs may prefer to supervise activities at a distance and delegate most responsibilities to the ISL. It is the responsibility of the VCI to monitor relationships between PIs and ISL staff and to intervene, along with the Department Chair if necessary, if working relationships become problematic.

As much as possible, the ISL should be responsive to specific requests of PIs. However, PIs must recognize that the ISL often has established "best practices" from years of collective experience, and PIs should make use of this expertise. In particular, if a PI request runs counter to ISL best practices, the PI must accept that deviations from ISL norms that affect cost and schedule may be charged to his or her project. Disagreements between PIs and ISL staff will be resolved by the VCI or, if necessary, the Department Chair.

## Imaging Sciences Committee:

The Imaging Sciences Committee (ISC) provides strategic priorities for the ISL. The ISC reviews and evaluates faculty requests for ISL resources and advises the VCI on ISL resource allocations. The ISC monitors progress on ISL projects to ensure that the ISL is meeting the scientific and strategic needs of the Department.

The members and chair of the ISC are appointed by the Department Chair, although individuals who are PIs on projects in Phase $0-6$ (as described below) are automatically appointed as voting members of the ISC. The Department Chair and VCI are non-voting ex officio members of the ISC; however, either is a voting member if he or she is a PI or PL on an active project. The ISC meets as necessary to evaluate new initiatives and meets at least annually to receive progress reports from the VCI, PIs, and PLs.

## Vice Chair for Instrumentation:

The VCI is the formal point of contact between the faculty and the ISL. The VCI is the executive officer of the ISL and carries the responsibility of ensuring that the ISL is meeting the scientific and strategic needs of the Department based on priorities established by the ISC and approved by the Department Chair. The VCI is appointed by the Department Chair and must be a tenured member of the faculty. The VCI approves internal purchases in the same way a PI approves charges on externally funded projects.

Some management tasks cut across multiple areas of technical responsibility, but are not tasks that need to be carried out by faculty. The VCI may thus choose to delegate some management tasks to ISL staff.

## Oversight by Principal Investigators and Project Leaders:

PIs and PLs are entitled to hold meetings for reports on the status of their projects from the ISL staff working on them. If the PI finds that progress is unsatisfactory, he or she should work with the VCI to resolve issues and should not intervene directly with the ISL staff unless requested to do so by the VCI.

The ISC shall hold regular meetings on at least an annual basis for the purpose of maintaining and improving communication between the ISL staff and the rest of the Department. At regular meetings, the status of each open project will be described. Presentations may be requested of PIs or ISL staff members. The agenda for regular meetings will be set by the VCI, ISC Chair, and the Department Chair. Regular meetings will have three types of sessions which will be employed as appropriate:
(1) Open sessions may be attended by any individual in the Department of Astronomy as well as any external guests (invited by the VCI, ISC Chair, or Department Chair).
(2) Executive sessions are open only to ISL staff and members of the ISC plus any guests approved by the ISC Chair.
(3) Closed executive sessions are open only to members of the ISC plus any guests approved by the ISC Chair.

## Fiscal Authority:

The VCI has signature authority for ISL expenses charged to Departmental ISL ORGs, although purchases of more than $\$ 1000$ must also be approved by the Department Chair. The VCI can delegate this authority to another faculty member or ISL staff member in his or her absence.

## Initiation and Execution of Projects:

Projects proceed through several distinct phases, and since our process is different from that of NASA, we will use numbers rather than letters to describe them to avoid confusion. The process below is intended primarily to describe externally funded major projects. Requests for support for very small projects (requiring less than a few persondays of resources from the ISL) can be made verbally to the VCI, although the ISC and Department Chair should be informed of such approvals by the VCI.

No expenditures can be incurred by any project prior to approval by this process. Expenditures related to work done for an external party cannot be incurred without the prior approval of the Department Chair until the appropriate contracts or memoranda of understanding are signed and in effect.

Phase 0: Project initiation. The purpose of this phase is to provide modest ISL resources to determine the feasibility and scope of a project prior to submission of a formal proposal. Projects that do not require ISL resources for the development of an internal proposal can proceed directly to Phase 1. Informal conversation between the proposer and the VCI, and ISL staff in early stages is encouraged. Written requests for allocations of ISL resources, which can include but are not limited to ISL staff time, will be entertained. To whom such requests are directed depends on the scope of work required:

- Smaller requests (meaning no more than a few person-weeks of effort) must be made to the VCI, who will inform the ISC and Department Chair of all such
requests. At his or her discretion, the VCI can request advice from the ISC for such proposals.
- Larger requests will be considered by the ISC and will be taken to the entire faculty for discussion prior to a decision as required.
Approval at this stage means only that resources will be made available to support preparation of an internal proposal, as described below. Larger requests for resources may be approved conditionally, with a requirement that resources from elsewhere must be secured. If a request for resources is denied, an appeal can be made to the Department Chair.

Phase 1: Internal Proposal. This phase begins with preparation of an internal proposal and ends with acceptance, conditional acceptance, or rejection of the proposal. An internal proposal must contain the following elements:

- A scientific proposal that describes the uniqueness or competitive advantages that the proposed instrument will present relative to other instruments that might be available to address the same science. In the case of facility-class instruments, a description of how the proposed instrument will address the scientific and/or strategic goals of the Department is also required.
- A Statement of Work describing the role of Ohio State, and specifically the ISL, in the proposed project.
- An initial estimate of resources required to carry out the project, broken down by internal (Ohio State) and external resource requirements.
- Plans for team or partnership arrangements, if applicable. This applies in particular for instruments that are proposed for shared facilities such as MDM and LBT or consortium efforts such as SMARTS; levels of partner interest and/or participation should be made clear.
- An explanation of risks and risk-mitigation strategies, including downscope options.

The ISC has discretion as to whether a written proposal or an oral presentation will meet these needs. For larger projects, written proposals should be required. The ISC evaluation should include a science assessment by the ISC and technical evaluation by the ISL. The technical evaluation should include:

- An assessment of whether or not the Statement of Work and request for resources are consistent.
- An assessment of how much of the proposed work can be done with existing resources and lab capabilities, and what new resources or capabilities would be required, and whether or not acquisition of these new resources or capabilities are consistent with current scientific and/or strategic goals of the Department or afford new and possibly unanticipated advantages.
The ISC will consider its own scientific opinion and the technical evaluation of the ISL in formulating a recommendation. If the ISC recommends further consideration of the proposal, it is appropriate at this stage for the VCI and ISL staff to attempt to resolve any differences they have in terms of the Statement of Work and internal resource request. If the proposal is a major project that will require significant ISL resources (such as an LBT facility instrument), the ISC will engage the entire faculty in the discussion (which can
include a formal presentation of the proposal by the project initiator to the faculty) and solicit a recommendation from the faculty prior to passing on its own recommendation.

The ISC and ISL may formally solicit external opinions if this is deemed to be in the best interest of the Department. The Department Chair should be consulted before external opinions are sought.

The ISC will make one of the following recommendations to the Department Chair:

- Approval. The proposal is deemed to be sound scientifically, technically, and fiscally, and is judged (a) to be consistent with scientific and/or strategic goals of the Department and/or (b) to afford potential importance and previously unanticipated advantages to the Department.
- Conditional Approval. The proposal is deemed to be sound scientifically and technically, but requires resources or capabilities that cannot for whatever reason currently be furnished by the ISL. The ISC recommends continuing with an external proposal only if these resources can be identified. This requirement in principle can be met by including the cost of such items in the external proposal; this specifically can refer to ISL staff salaries which can be charged to the project or the cost of work that can be subcontracted.
- Rejection. The proposal is either scientifically, technically, or fiscally flawed, or is inconsistent with Department scientific and/or strategic goals, or the scientific return for the Department as a whole does not merit the requested investment of Department resources.

Phase 2: External proposal. Once a project has been approved, a proposal for external funding can be prepared and submitted. Proposals that have been conditionally approved may be submitted when the conditions imposed by the ISC have been met to the satisfaction of the Department Chair, in consultation with VCI and Chair of the ISC, and, if deemed desirable, with ISL staff members as well. Proposals that involve partner institutions must have a signed Memorandum of Understanding clearing outlining the responsibilities of each partner before a proposal can be submitted.

The final step prior to submission of a proposal to an external agency is submission of an Authorization to Seek Off-Campus Funding (ePA-005 form). The Department Chair will not approve ePA-005 forms for instrumentation proposals that do not have a Phase 1 approval by the ISC and the Department Chair and have not met any conditions required by the ISC prior to submission.

If a proposal is approved by an external agency (such as NSF or NASA), it moves on to Phase 3. If a proposal is rejected by an external agency, it may be resubmitted subject to policies of the external agency, but additional ISL resources in support of it will require a new review: automatic support for resubmission should not be presumed because Department priorities can change.

Phase 3: Project Scheduling. The purpose of this phase is to integrate a newly funded program into the ISL work queue. At this point, the PI (or PL), and VCI develop a work
plan and schedule for the project. Final authority in scheduling use of ISL resources resides with the VCI. If serious differences of opinion cannot be overcome or if the potential impact on the current ISL schedule is deemed to be significant by the VCI, the issue may be taken to the ISC or ultimately to the Department Chair for resolution.

The ISC should be apprised of the work plan and schedule as early as possible.
If the project will produce an instrument or other deliverable for a third party, a formal contract or memorandum of understanding (MOU) must be executed between OSU and the receiving party before further work may proceed. The contract/MOU must clearly specify the scope of work and responsibilities for each party, and the schedule for completion. The VCI will coordinate with the PI/PL in the generation of the contract/MOU, in consultation with the Department Chair and the ISC.

Phase 4: Design and Fabrication. Design and fabrication phases will be carried out by ISL personnel in consultation with the project PI/PL. The VCI is responsible for assigning ISL personnel and ensuring that they have adequate resources to carry out these tasks. Large projects will usually require formal Design Reviews, often mandated by the external funding agencies. The PI/PL will be responsible for organizing these reviews in collaboration with the VCI. Smaller projects should undertake an internal design review before proceeding to fabrication, the scope of this review to be determined by the PI/PL and VCI on a case-by-case basis.

Phase 5: Testing and Quality Assurance. Once an instrument is assembled, it will be tested in the lab before deployment. The PI/PL should work with assigned ISL personnel to carry out the testing and evaluation, and develop a set of performance benchmarks that must be satisfied before deployment or delivery phases can proceed. Acceptance testing may also sometimes involve external personnel (e.g., representatives from a telescope consortium where the instrument will be deployed), and the PI/PL will work with the VCI to coordinate these reviews.

Phase 6: Deployment/Delivery. When an instrument has passed lab acceptance testing and is ready to deploy and commission, the PI/PL shall prepare a detailed commissioning plan, outlining performance goals that the instrument must achieve to be declared "commissioned" and available for use. The PI/PL will work with the VCI and relevant ISL personnel to implement the commissioning plan. If commissioning activities require further work before the instrument can be declared working, the VCI will assign personnel and resources as required. If serious problems emerge that prevent deployment of the instrument, the ISC will review the situation and make recommendations to the VCI and Department Chair for corrective action.

Phase 7: Operations and Maintenance. Once an instrument is deployed, it will require both routine maintenance and occasional repairs to fix emergent problems. Where OSU is obligated by contract or MOU to maintain working instruments, the project PI/PL shall be responsible for on-going oversight of the instrument and monitoring its performance. In cases where the $\mathrm{PI} / \mathrm{PL}$ is no longer at OSU , the VCI will assume responsibility for the
instrument if no other faculty takes it on. Minor or routine problems will be handled on a case-by-case basis, with the VCI responsible for assigning ISL personnel to address problems as they emerge. Planned maintenance of deployed instruments will be coordinated by the PI/PL and VCI, who will assign ISL personnel as required. The VCI should consult with the ISC if instrument problems are beginning to negatively impact other projects.

Upgrades to current instruments will be treated as new projects, and subject to the other phases as described above. An upgrade is defined as any modification of an existing instrument intended to extend or enhance its capabilities beyond its original design performance.

Phase 8: End-of-Life/Decommissioning. When an instrument reaches the end of its useful lifetime, the VCI and PI/PL (if still at OSU) will be responsible for developing a plan for the decommissioning and ultimate disposal of the instrument. If the instrument is to be transferred or sold to another institution, the VCI will work with the Department Chair and the relevant University and funding agency personnel to ensure that all legal requirements are satisfied for transfer of ownership. When an instrument is formally "decommissioned", no more department resources may be expended for further maintenance or modification. A decommissioned instrument may not be reactivated without consultation with the ISC, and re-activation must proceed through the same phases as new projects.

