

The AFM & other Scanning Probe Microscopies Section Committee

Atomic Force Microscopy (AFM) & Scanning Probe Microscopy (SPM) describes a family of techniques, distinct from the Light and Electron Microscopies in that radiation is not used as a probe to interrogate the surface. Instead a physical probe is positioned within a few nanometres of the surface, or in contact with the surface, and the probe is raster-scanned across the surface. A physical property of the surface, to which the probe is sensitive, is used as a control parameter to yield a true 3-dimensional image of the surface. An SPM “image” can contain information from a wide range of forces and interactions and, so SPM can provide quantitative maps of e.g. mechanical, electrical, magnetic, thermal, chemical, optical and electronic properties simultaneously with topography, and both to nanometre, atomic and even subatomic resolution in some conditions. With the development of high-speed SPM these maps can be acquired to time resolutions up to seconds and milliseconds. The probe is often used to obtain local spectroscopic information about the behaviour of a particular property as a parameter such as distance or voltage is ramped. Two important examples of SPM spectroscopy are: Force Spectroscopy, which quantifies the forces felt by the probe as a function of distance with the sample, and Scanning tunneling spectroscopy (STS), an extension of scanning tunnelling microscopy (STM), is used to provide information about the density of electrons in a sample as a function of their energy. AFM is also often used as a nanoindenter to obtain nanometre information about the mechanical properties of the sample as it is mechanically deformed.

The AFM & other Scanning Probe Microscopies Section of the RMS has several distinguishing features:

- We represent a diverse multidisciplinary and interdisciplinary community of researchers and practitioners
- We are developing a number of training short-courses as we look to build and support the community
- We are opening a dialogue with the research councils on mutual training opportunities

General RMS Science Section Committee Information

- The Society currently has six Science Sections – Light Microscopy, Electron Microscopy, Life Sciences, Engineering & Physical Sciences, AFM & other Scanning Probe Microscopy, and Flow Cytometry – as well as the Education and Outreach Committee. In theory, all Members of the Society are members of every Section but, needless to say, Members put effort in to where their own interests and skills lie. In addition to the Science Sections, an Early Career Committee has also been set up, and this includes representatives from all of the science sections.
- The Sections help to chart the direction that the Society takes with regards meetings, courses and book titles. The Sections are heavily involved in the planning of the Microscience Microscopy Congress (mmc), helping to identify the emerging subjects that should be covered by the conference.
- Each Section has a Committee who meet three times per year – usually January/February, May/June and October/November and meetings are always full and interesting!
- All Committee Members should be Members of the Society, or representing a Corporate Member of the Society.
- Once a Member has agreed to join a Section Committee they are expected to attend as many of the Committee meetings as possible so should consider whether they will have the time to do so.
- If you are considering becoming Chair of a Section Committee it is very important that you are aware that, if you are elected, you become a Trustee of the Society. This brings with it a number of added responsibilities and time commitments.
- A Committee shall be elected annually at the Section Annual General Meeting from members of the Royal Microscopical Society.

Objectives of the Society's Committees

- Provide guidance to ensure that the Society delivers a balanced annual programme of events.
- Provide expert input to planning of the Society's scientific meetings.

- Consider the training needs of the microscopy community and ensure that the Society's courses meet these needs.
- Inform members of the Society – via Society Publications, Website and Social Media – of developments in the Section's subject area.
- Provide support and input to the activities of Education and Outreach Committee, the Early Career Committee and infocus magazine.

Nominations and Terms of office for a Science Section Committee Member

- The Sections have up to ten elected members (including the Chair and Deputy Chair) who are elected at the Section's Annual General Meeting. These Committee Members are augmented by up to four co-opted members who may be former Committee Members or people who have been invited with a view to them becoming elected in the future. The immediate Past Chair shall be an ex-officio member of the Committee and will have the title Vice-Chair for one year. An Early Career representative will also be invited to join the committee, and will represent the Section Committee on the Early Career Committee.
- Nominations for election to the Section Committee must be received by the Chief Executive of the Society in writing at least 28 days before the Section Annual General Meeting and must be supported by at least two members of the Society. The consent of the nominee must be obtained.
- In the event of there being more nominations than vacancies on the Committee, a vote shall be taken at the meeting, or via email, and vacancies shall be filled by the nominees obtaining the greatest number of votes.
- Members are elected at the Section's Annual General Meeting (AGM) which usually take place during a Scientific meeting, such as mmc, Frontiers in BioImaging, the SPM meeting or FlowCytometryUK.
- Ordinary members of the Committee may be re-elected at the Section Annual General Meeting until they have served for four years, after which they shall not be eligible for nominations to the Committee for a further two years unless elected Chair or Deputy Chair. During this two year period, they are eligible to be co-opted to the Committee.
- The Deputy Chair shall be elected annually at the Section Annual General Meeting and is eligible for re-election, but must retire after serving three consecutive years. The Section Deputy Chair will represent the Chair at times when the Chair is unavailable to attend Section or Council Meetings.
- The Chair shall be elected annually at the Section Annual General Meeting and is eligible for re-election, but must retire after serving for three consecutive years and shall then serve on the Committee, ex-officio for one year after relinquishing office as Chair. The Chair shall be a member of the Council and serve as a Trustee of the Royal Microscopical Society (by-law 41).
- Members of the Executive Committee or the Royal Microscopical Society are ex-officio members of the Section Committee.
- Others may be invited to attend committee meetings due to the organisation of a specific upcoming event, or where they represent another relevant organisation.

Responsibilities and expectations for a Science Section Committee member

- Each Section is responsible for maintaining a watching brief on its specific subject area and is expected to seek new opportunities to ensure that the meetings and courses offered by the Society remain fresh and are meeting the needs of the community.
- Unless otherwise stated by Council, each Committee should have significant involvement in the organisation of at least one meeting per year.
- A Section Committee can vote to support a non-Society event. In some cases, this will involve financial support. There are sponsorship limits for individual awards and for the total of awards in any financial year, these are set by the Honorary Treasurer. Requests for support outside of these limits should be submitted to the Executive Committee. Such requests will be considered, and recommendations will be made to Council. Council's decision is final. In addition, when planning Society events, Committee members must

seek to identify other organisations that might provide financial support from other societies and bodies but should not include exhibiting companies who will be approached automatically by the Society for sponsorship.

- A Section Medal is presented every other year, with the winner giving an invited talk during a major meeting such as mmc. The Section Committee will judge and decide on the winner of this award.
- There are three meetings held per year and three members of a Committee attending a meeting (one of whom must be the Chair or the Deputy Chair) shall constitute a quorum at a Committee meeting.
- Section Committee Members cannot receive payment or other benefits for their role, but out-of-pocket expenses are reimbursed.
- The Chairs of all Sections meet immediately before each meeting of Council for a Section Chairs Meeting. This is attended by members of the Executive Committee with the purpose being to encourage close and complementary working between the Sections. These meetings are chaired alternately by the two Honorary Secretaries Science. This flow of information is invaluable to Council and it is essential if the Society is to serve the broad range of subjects covered by microscopy.
- The Sections act in the best interests of the Society, but do not act on behalf of the Society. Therefore, they cannot enter into discussions or contracts that commit the Society in any way. Each Section Committee considers matters relevant to the specific section committee subject area and the findings are fed to Council for it to consider and take action if appropriate. Providing that a Section Committee Member adheres to the above, there are no liabilities attached to being a member of a Section Committee.

Science Section Annual General Meeting

- Whenever possible the Section Annual General Meeting shall be held within 10-14 months of the last Section Annual General Meeting with advanced notice of at least three months before the meeting is due to take place. The notice shall also include a statement to the effect that nominations for the committee are invited.
- The Chair of the Section shall present an Annual Report at the Section Annual General Meeting and a summary of this Annual Report will be made available to all members.
- Ten members of the Society shall constitute a quorum at the Section Annual General Meeting.
- Those entitled to vote at the Section Annual General Meetings shall be restricted to all members of the Royal Microscopical Society.