

Laboratory Astrophysics Division of the American Astronomical Society

Annual Report
September 6, 2019



Executive Committee Members

Chair: Phillip Stancil – University of Georgia
Vice Chair: Murthy Gudipati – NASA JPL
Past Chair: Randall Smith – Smithsonian Astrophysical Observatory
Treasurer: Christiaan Boersma – NASA Ames Research Center
Secretary: Rachel L. Smith – NC Museum of Natural Sci., Appalachian State University
Member at Large (Nuclei): Artemis Spyrou – Michigan State University
Member at Large (Molecules): Michael McCarthy – Harvard-Smithsonian Center for Astrophysics
Member at Large (Ices): Ella Sciamma-O'Brien – BAERI, at NASA Ames Research Center
Member at Large (Particles): Kenneth Nollelt – San Diego State University
Member at Large (Plasmas): Mike Hahn – Columbia University
Member at Large (Planetary): Silva Protopapa – Southwest Research Institute

Overview

The Laboratory Astrophysics Division (LAD) came into being at the Anchorage AAS meeting in June 2012. The sixth election resulted in a significant turn-over in the division officers including a new Vice Chair, Treasurer, and Secretary. Further new Members at Large in the areas of Plasmas and Planetary Science were elected. The winners were announced at the LAD business meeting held during the annual LAD/AAS in St. Louis, MO in June 2019. LAD currently has 223 members, with the majority being full members. This is a significant increase from 181 members as of the last Division report. The LAD listserv has 691 subscribers, up from the 556 listed at the time of the last Division report. As of June 30, 2019, our total financial balance was \$27,028, compared to \$22,881 and \$26,472, at the end of CY2017 and CY2018, respectively. For the first two quarters of CY2019, our revenues from dues and contributions totaled \$4843, while our expenses (all due to prizes) was \$2178.

Rachel Smith (Secretary) has taken over maintenance of the distribution list for LAD from the past Secretary, while Ella Sciamma-O'Brien (Member at Large) now updates the Web page on the AAS server. They are supported in these tasks by the IT office. Otherwise, the various activities for the most part take place through email consultation, though we have begun a monthly executive committee conference call (held in August and September so far), where ongoing action items and discussions are bringing forth ideas and plans for enhancing membership and visibility of LAD, as well as new ways of interfacing with the other AAS science divisions.

Highlights for 2018-2019

The officers and committee members have publicized LAD and Laboratory Astrophysics at a number of national and international meetings to encourage the community of users and providers to join LAD (see Chronology below).

Then LAD Vice-Chair Phillip Stancil lead efforts to prepare a report from the NASA Laboratory Astrophysics Workshop. The report, which highlights and prioritizes laboratory astrophysics needs, was completed on Feb. 24, 2019.

At the Summer 2019 AAS meeting, Xander Tielens (Leiden University) gave an extremely well-attended plenary talk for LAD on the topic of “The Role of Dust in the Molecular Universe.” The talk gave an overview of astrochemistry from simple species to complex organic molecules to prebiotic material, focusing on the important impact of interstellar dust grains. The presentation was very animated and well-received by the audience.

The winner of the 2019 Laboratory Astrophysics Prize was Dr. Lucy Ziurys of the University of Arizona. Unfortunately, weather issues prevented her from arriving to the St. Louis meeting in time to give her invited talk. Instead, she will give her Prize talk at the 2020 Summer AAS/LAD meeting in Madison, WI.

The 2019 Early Career Award went to Dr. Brett McGuire from the National Radio Astronomy Observatory. He also gave an invited talk, “GOTHAM and ARKHAM: First Results from Programs to Explore Aromatic Chemistry at the Earliest Stages of Star Formation,” at the 2019 Annual AAS/LAD meeting in St. Louis.

The 2019 Dissertation Prize went to Dr. Cameron Mackie from Leiden University (now at Lawrence Berkeley National Laboratory). He also gave an invited talk, “Producing accurate theoretical anharmonic infrared cascade spectra of PAHs,” at the 2019 Annual AAS/LAD meeting in St. Louis.

A number of nominations are under consideration for next year’s prizes, including the Laboratory Astrophysics Prize, the Early Career Award, and the Dissertation Prize. The first two are expected to be voted upon by the LAD Honors Committee next week, chaired by Phillip Stancil.

A series of six sessions were held at the 2019 LAD Annual Meeting: “Bridging Laboratory and Astrophysics” organized by the LAD Committee. The lead organizer for the 2019 meeting was then Vice-Chair Phillip Stancil. The sessions were organized around two main themes: Exoplanet Atmospheres and Results from *Spitzer*.

Past Secretary Daniel Savin, as Science Editor in Laboratory Astrophysics for the AAS Journals, continued to coordinate the monthly blast of laboratory astrophysics articles sent out to LAD members. Daniel selected the laboratory astrophysics articles published each month in the AAS journals and worked with the AAS journals staff and to send out the blast before the 15th of each month

We have continued to seek connections with other Divisions of the AAS.

A LAD-organized Workshop was held at the 2019 annual Division of Planetary Sciences meeting titled, “Laboratory Studies of Atmospheres and Plumes.” The workshop was organized by then LAD Member at Large Stefanie Milam and current Member at Large Ella Sciamma-O’Brien. It included 5 invited speakers and a panel discussion.

Unfortunately, two proposals for special LAD sessions at the 235th AAS Meeting in Honolulu were not accepted. Planning for the summer 2020 AAS/LAD is in progress.

LAD Events' Chronology:

- Sep 2018: Nominations due for Laboratory Astrophysics Prize (LAP) and Early Career Award (ECA)
- Sep 2018: Honor Committee formed
- Sep 2019: Call sent out for Dissertation Prize
- Oct 2018: AAS Leadership Meeting
- Nov 2018: Completed proposed sessions and speakers for 2019 LAD meeting
- Nov 2018: Reminded AAS office of the joint LAD meeting at the AAS Summer meeting
- Dec 2018: Prepared press release for LAP and ECA winners.

- Dec 2018: LAP and ECA awards announced
- 31 Dec 2018: Nominations for Dissertation Prize due
- Jan 2019: Dissertation Prize winner selected
- Jan 2019: Finalized summer meeting
- Feb 2019: Ask IT staff update LAD membership list to prepare for upcoming election
- Feb 2019: Beginning of 16 week election period. Sent out call for two open Members-at-Large seats (in Molecules and in Particles). Form Nominations Committee.
- Mar 2019: Prepared press release for Dissertation Prize
- 20 March 2019: Dissertation Prize Announced
- Apr 2019: Close of nomination period. Candidate slate received from Nominating Committee
- May 2019: Voting began
- June 2019: Had AAS IT update the LAD Executive Committee mailing list
- June 2019: Sent out final call for nominations for the 2019 Laboratory Astrophysics Prize (LAP) and Early Career Award (EAC) nominees
- 01 July 2019: Closing date for LAP and EAC nominations
- July 2019: Created list of nominees and their institutions and letter writers and their institutions to guide in the formation of an Honors Committee free of any conflicts of interest
- July 2019: Honors Committee formed
- Sept 2019: Select LAP and EAC winners