other MCA-sarcomas and, then, on other types of mouse tumors. Various cellular subpopulations will be isolated by cell sorting and their anti-tumor versus pro-tumor functional activities assessed. Finally, using the data obtained in the mouse studies as a guide, samples will be taken from human cancer patients before, during, and after immunotherapy and analysed and the results linked to clinical outcome.

The research team, consisting of one senior and four young investigators at different levels, is both international and multigenerational. The project will be conducted in the Department of Pathology and Immunology at Washington University School of Medicine in St. Louis, and is scheduled for 2018-2020. Results of the studies will be published in peer reviewed scientific journals with acknowledgement of the second half of the 2017 Balzan Prize to Robert Schreiber for Immunological Approaches in Cancer Therapy. Towards the end of the research project, a Symposium on Immunotherapy of Cancer highlighting the results of this study and studies by other laboratories working in the immuno-oncology area may be organized in conjunction with the Balzan Foundation.

Exploring the Nearest Ultracool Dwarfs for Potentially Habitable Exoplanets Well-suited for Detailed Atmospheric Characterization

Michäel Gillon

2017 Balzan Prize for The Sun's Planetary Systems and Exoplanets

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About Exoplanetology

Our view of our solar system has widened greatly within the last two decades, thanks to the thousands of exoplanet detections achieved since the seminal discovery of 51 Pegasi b in 1995. Most stars of our galaxy harbour their own cortege of planets, and most of these exoplanetary systems have an architecture very different from ours. Their global study has drastically improved our understanding of planetary formation and evolution mechanisms, while revealing their intrinsic stochastic natures. Furthermore, for a fraction of the exoplanets known to transit nearby stars, a detailed characterization is now within reach of our instruments: orbital parameters, precise measurement of the mass and size – the resulting density constraining the bulk composition – and study of the properties of the atmosphere, including its chemical composition.

Within the last decade, several molecules and atoms have already been detected in the atmosphere of highly irradiated giant planets. These pioneering results have inaugurated a new field of astronomy: comparative exoplanetology, the detailed study of planets orbiting other stars than the Sun. The best is yet to come for this nascent