

Resource Summary Report

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BioCurrents Research Center

RRID:SCR_002020

Type: Tool

Proper Citation

BioCurrents Research Center (RRID:SCR_002020)

Resource Information

URL: <http://www.biocurrents.org/>

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Description: The BioCurrents Research Center (BRC) is an integrated technology resource of the NIH:NCRR. The activities of the Center focus on molecular physiology as it relates to the cell function and disease. Our particular interest is how the dynamics of cell responses are reflected in the chemical profiles of microdomains surrounding single living cells. In order to measure complex cellular boundary layers, the BRC has specialized in the development of extremely sensitive signal acquisition and processing methods along with miniaturized electrochemical sensor designs. The technique is non-invasive and termed self-referencing. Since its establishment in 1996, the BRC has directed its technological research and development to the design and application of ultra-microelectrodes (tip diameters of less than 10m) tailored for the detection of specific chemicals. These have been successfully applied to the boundary layer profiles of many different cell types, with thematic strength in diabetes research, reproductive health and development (see collaborative profiles). More recently, it is changing its focus to technical developments, enhancing the integrative approach to cell function. To understand a cell as a dynamic and integrated whole, BRC must be able to examine responses from different domains as near to real time and as synchronously as possible. To this end, it is developing imaging capabilities to work in parallel with electrochemistry and conventional electrophysiological techniques. Imaging includes a spinning disc confocal, as well as a low light/luminescent imager designed and built within the BRC. The technologies developed or under development are in high demand within the biomedical community. Over 40 investigators work with the Center each year in a collaborative or service capacity. Over 80 of our visitor pool is NIH funded, representing approximately 25 NIH divisions and institutes. As part of our training and dissemination program we host occasional workshops at major national and international meetings, train a significant number of new investigators each year and host graduate students undertaking portions of their thesis dissertation using our technologies. In dissemination we advise on, and install, electrochemical systems in off campus research endeavors, both academic and industrial.

Abbreviations: BRC

Resource Type: material resource, instrument supplier

Keywords: electrochemical, electrochemistry, electrophysiological, function, cell, cellular, chemical, confocal, development, diabetes, disease, health, imager, light, microdomain, microelectrode, physiology, reproductive, research, technique, technology

Funding: NCRR P41RR001395

Availability: THIS RESOURCE IS NO LONGER IN SERVICE

Resource Name: BioCurrents Research Center

Resource ID: SCR_002020

Alternate IDs: nif-0000-24482

Record Creation Time: 20220129T080211+0000

Record Last Update: 20260808T190547+0000

Ratings and Alerts

No rating or validation information has been found for BioCurrents Research Center.

No alerts have been found for BioCurrents Research Center.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We have not found any literature mentions for this resource.