VANDERBILT UNIVERSITY MEDICAL CENTER

INNOVATIVE TRANSLATIONAL SHARED RESOURCE (ITR)/ IMMUNOPHENOTYPING SHARED RESOURCE (IPSR)

IN COLLABORATION WITH THE FLOW CYTOMETRY SHARED RESOURCE (FCSR)

E. HUDDLESTON

ELIZABETH.HUDDLESTON@VUMC.ORG

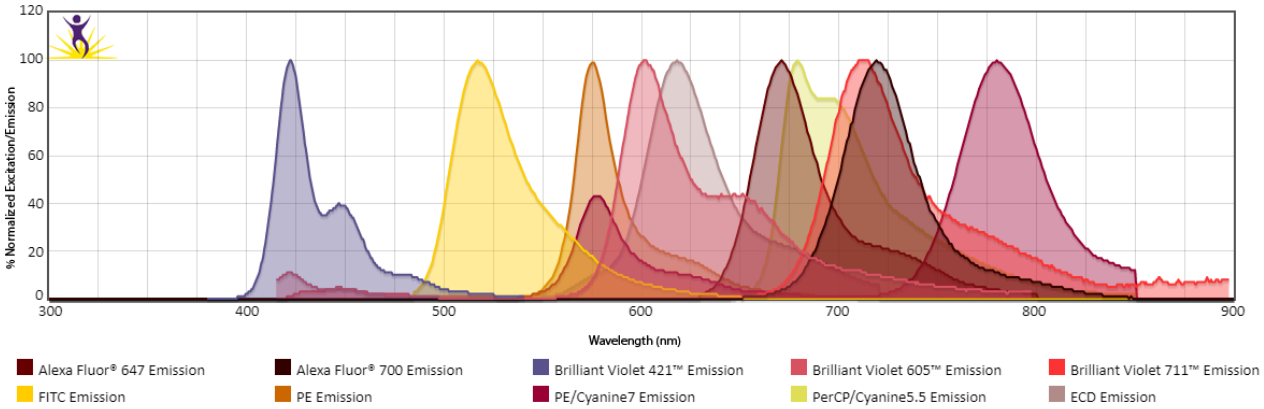
VANDERBILT-INGRAM CANCER CENTER

FULL SPECTRUM FLOW CYTOMETRY: CYTEK AURORA

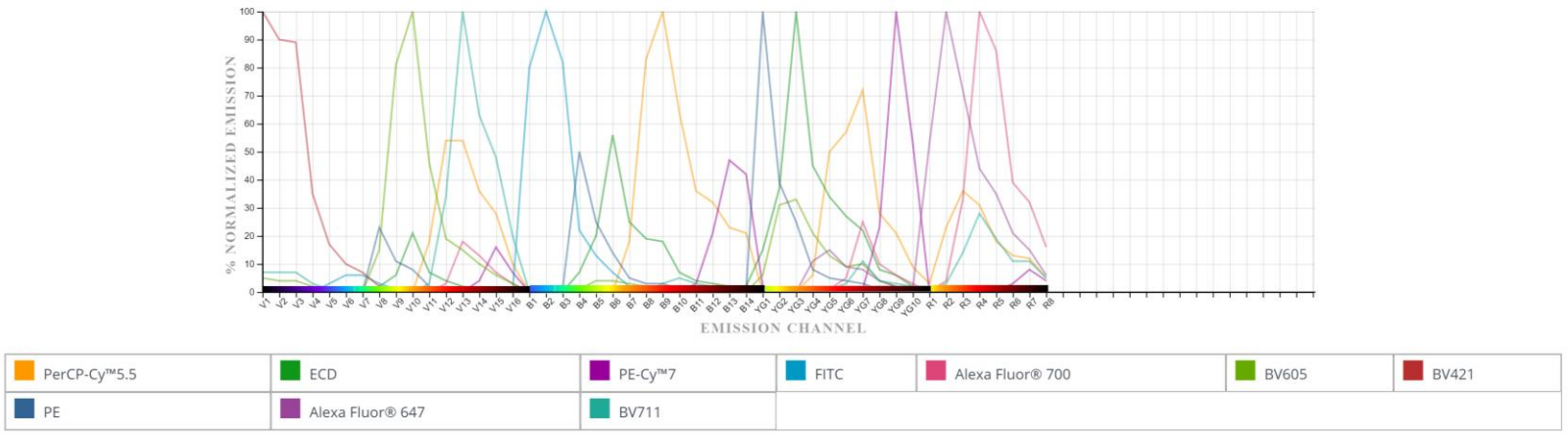
WHAT IS THE CYTEK AURORA?

The 4 laser Aurora in the VUMC Flow Cytometry Shared Resource is a flexible full spectrum cytometer available for deep immune profiling via a multitude of commercially available antibodies and a variety of fluorophores. Forward and side scatter from cells passed through a laser tell us about relative cell size and granularity and fluorochromes bound to cellular markers are used to identify different cell types in a sample through interrogation via spatially separated lasers.

CYTEK®
TRANSCEND THE CONVENTIONAL



Traditional flow cytometry spectrum viewer showing peak emissions

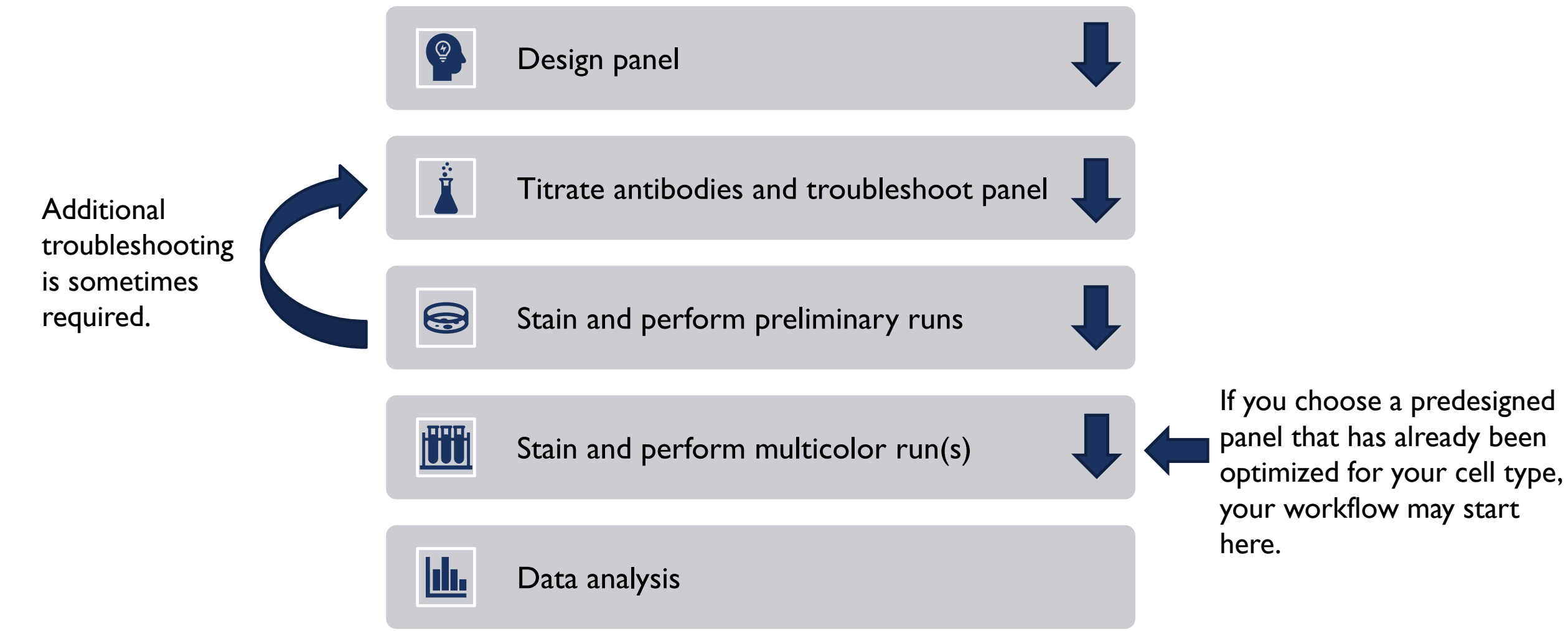


Cytek Aurora full spectrum flow spectrum viewer showing full emissions spectrum

TRADITIONAL FLOW CYTOMETRY VS. FULL SPECTRUM FLOW CYTOMETRY

Traditional flow cytometry looks at the peak emission of each fluorophore, while full spectrum cytometry looks at the full emission spectrum, allowing spectral unmixing of spectrally similar fluorophores. This allows us to use spectrally similar fluorophores in the same panel, increasing the number of cellular markers we can identify in one panel.

PANEL DESIGN WORKFLOW



ITR/IPSR CYTEK SERVICES

WE CAN PROVIDE ANY COMBINATION OF THE LISTED SERVICES FOR YOUR CYTEK PROJECT

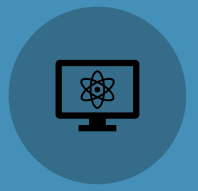
PANEL DESIGN AND ANTIBODY SELECTION

PROTOCOL DEVELOPMENT AND OPTIMIZATION

TRAINING AND CONSULTATION (IN COLLABORATION WITH THE FCSR)

ANTIBODY TITRATION

STAINING



INSTRUMENT RUNS

DATA ANALYSIS AVAILABLE SOON

B Cell Panel

- CD19
- CD20
- IgD
- CD38
- IgM
- CD23
- CD73
- CD183 (CXCR3)
- CD185 (CXCR5)
- CD138

T Cell Exhaustion Panel

- CD45
- CD3
- CD8
- NKG2A
- PD-1
- TIM-3
- CD4
- CD103
- CD185 (CXCR5)

CURRENTLY AVAILABLE PANELS

CURRENTLY AVAILABLE PANELS MAY STILL REQUIRE OPTIMIZATION BASED ON YOUR CELL TYPE

COSTS

- The costs of antibodies can vary greatly and is a considerable expense in any flow cytometry experiment.
- Costs of custom panel design varies based on many factors like antibody titration and troubleshooting, but a recent cost estimate for building a 15-color panel from the ground up was about $22,000 not including antibodies.
- Existing panels can be run at a lower cost because the panel is already optimized, but some optimization may still be required based on your cell type.
- Other costs to consider:
  - ITR/IPSR hourly rate: $99/hour*
  - Cytek Aurora instrument use: $64/hour*
  - Reagents, antibodies, consumables

*subject to change

QUESTIONS?

Contact the ITR/IPSR Scientific Director, Dr. Kim Dahlman:
Kim.Dahlman@vumc.org

Contact the FCSR Managing Director, David Flaherty:
david.k.flaherty@vumc.org

Visit the ITR/IPSR website at:
https://www.vumc.org/itr-shared-resource/welcome

Visit the FCSR website at:
https://www.vumc.org/flow-cytometry/welcome

Click the link to submit a project request:
https://redcap.link/ITRIntake