

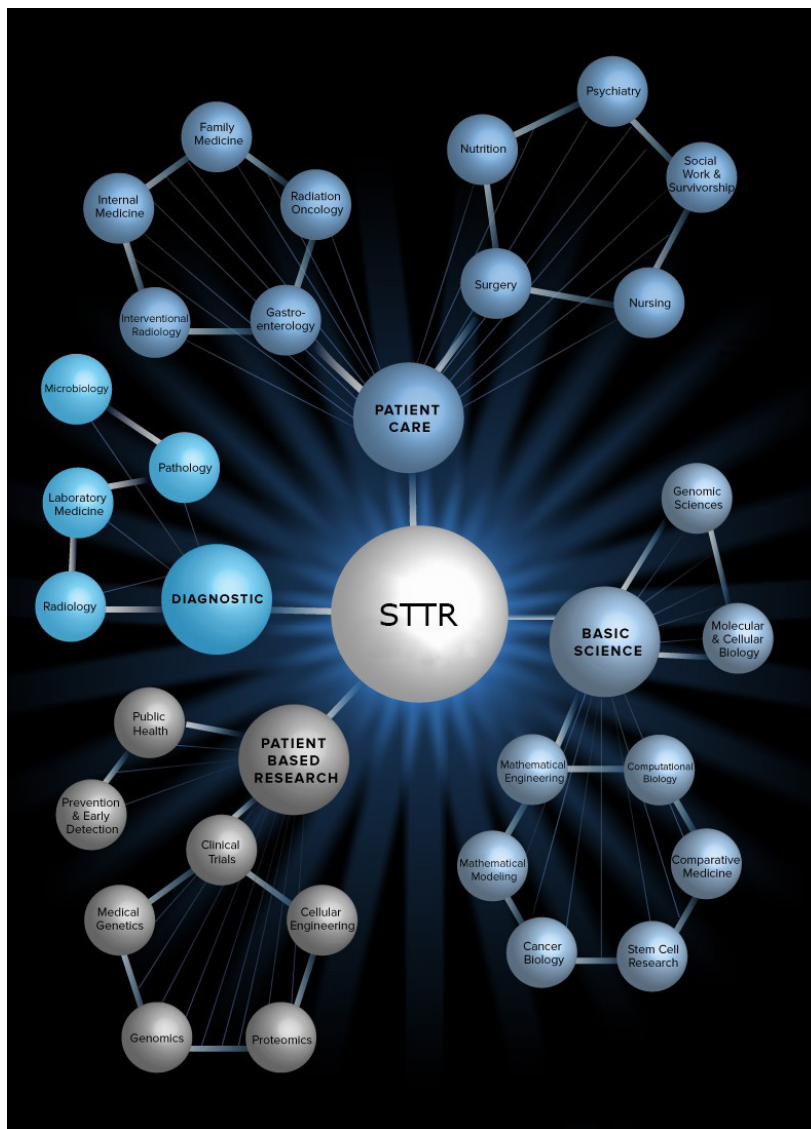
# SEATTLE TRANSLATIONAL TUMOR RESEARCH

FRED HUTCHINSON CANCER RESEARCH CENTER • UW MEDICINE • SEATTLE CANCER CARE ALLIANCE

## SPEEDING CANCER RESEARCH AND IMPROVING CLINICAL CARE

Fred Hutchinson Cancer Research Center, UW Medicine and Seattle Cancer Care Alliance are bridging laboratory sciences and patient care to enhance the knowledge of cancer using population research, preclinical cancer biology, translational imaging, and clinical studies of solid tumors and hematologic cancers.

**Seattle Translational Tumor Research (STTR) creates environments which enable researchers and clinicians to accelerate scientific discovery and translate it into preventions and cures for patients.**



### Unique Support for Faculty and Programs

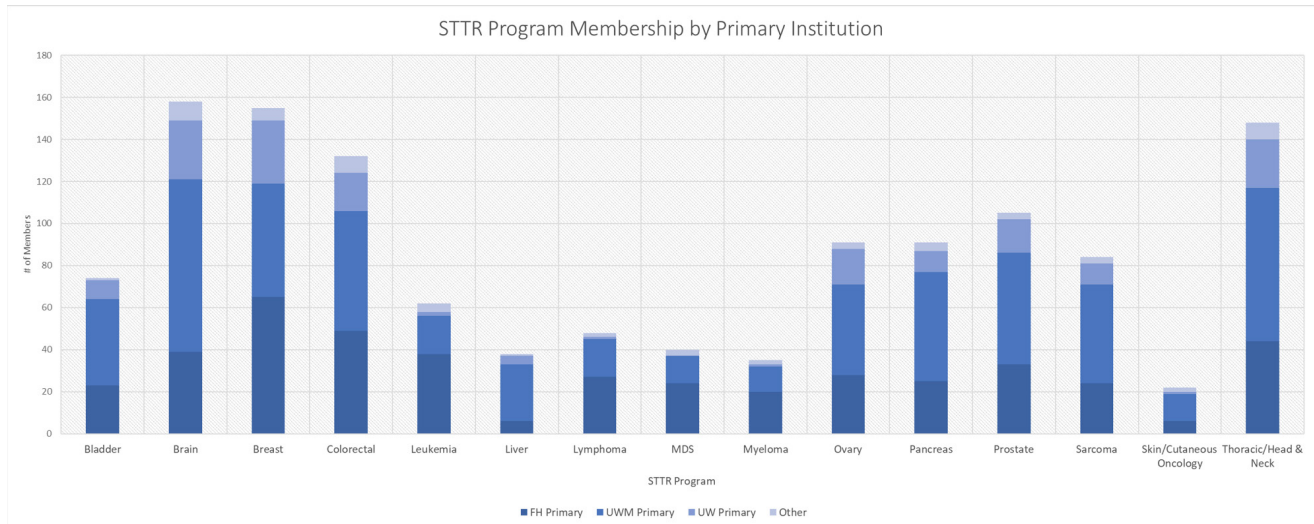
STTR provides a forum for brainstorming and innovation across institutions, divisions, disciplines, and research topics. We facilitate the navigation of various steps in the research pipeline via one-on-one meetings with faculty, small group discussions, large presentations, and retreats. We strive to establish shared research goals and identify diverse expertise to tackle important questions with fresh perspectives and new strategies.

STTR represents the voice of our faculty while acting as agents to build energy and momentum to advance science.

### Learn More About Our Program

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## STRATEGIC ALIGNMENT



### Strategic Accomplishments

- ▶ Built an STTR member portal - one point of access for a breadth of resources
- ▶ Launched Oncoscape v3 - a biotool for visualization of paired clinical & molecular data
- ▶ Partnered with Philanthropy to align fundraising priorities with programmatic strategy
- ▶ Worked with Deputy Directors to inventory translational research needs across all 15 STTR programs, identifying key opportunities for growth
- ▶ Paired clinical data abstraction to amplify value of biospecimens collected by programs

### Bridging Faculty Across Institutions & Disciplines

STTR currently has over 500 members spanning Seattle-area institutions. We have members from Fred Hutch, UW Medicine, Seattle Cancer Care Alliance, the Institute for Systems Biology, Seattle Children's Research Institute, VA Puget Sound Health Care System, and others which we bring together to identify programmatic strengths and opportunities for new research.

### Bridging Faculty with Institutional Departments & Resources

STTR works alongside Fred Hutch departments to drive forward projects which will improve the translational research environment. We participate in projects which aim to streamline processes or align strategic objectives across groups or institutions.

In 2016, STTR staff worked with our Deputy Directors to develop menu-driven fundraising priorities for each program to help streamline the process by which Fred Hutch Development and UW Medicine Advancement interact with our programs.

We also provide a channel for members to link with key contacts across the center including Communications, IT, and Business Development and Industry Relations (BDIR).

## BRIDGING COLLABORATION

### STTRconnect

A searchable database of 800+ local experts within computational, biological, or clinical fields of biomedical research. Highlights of STTRconnect include: ability to search profiles; generate lists of potential collaborators for large grants or projects; and search keywords, collaborative networks, titles and other designations.

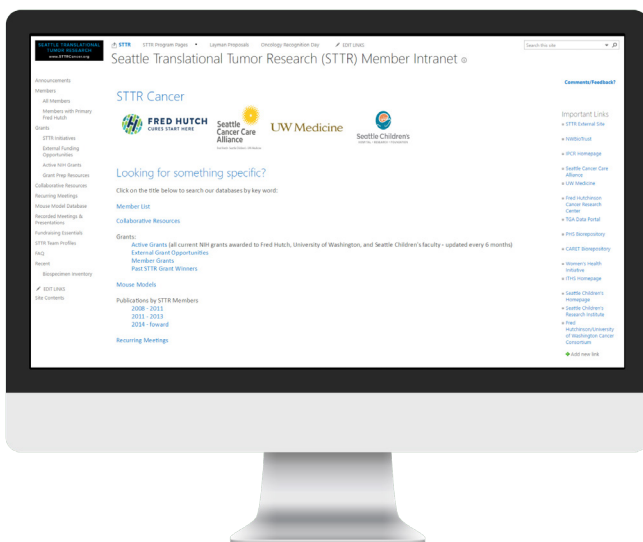


### Translational Research Meetings

STTR Deputy Directors lead regular translational research meetings in which clinicians, researchers, and graduate students share their work. The meetings provide forums to solicit constructive feedback on projects and extend networks of potential collaborators. Many leaders use these meetings to discuss and plan for collaborative, multidisciplinary grant applications.

### Collaborative Forums

- ▶ Ongoing, regular, interdisciplinary translational research meetings facilitate new project ideas & collaborations
- ▶ Semi-annual faculty retreats engage over 200 attendees to share, learn and build new collaborations



### RAINIER - STTR Member Intranet

A password-protected site with access to searchable databases including:

- Member profiles (tumor types of interest, key words, academic appointments, research and clinical interests, publication, and grant history)
- Funding opportunities (internal & external)
- Mouse models database
- Collaborative resources
- Recurring meetings



## FACILITATING CUTTING-EDGE RESEARCH

### Collaborative Grant Planning Sessions

STTR brings together faculty to brainstorm and develop competitive, multidisciplinary grant applications for large collaborative NIH grants.

### Yearly Granting Program

Each year STTR supports ground-breaking, innovative research conducted by our members. Our granting program places a strong focus on collaboration to incentivize cross-disciplinary, trans-institutional efforts and encourage new approaches to cancer research.

Past award types have included: Partial Molecular Profiling Support, Early Phase Clinical Research Support, Oncoscape Biospecimen Utilization Grants, Programmatic Investments, and Transformative Team projects.

Our seed funding has provided pilot data for successful U01, R01, and foundation applications, enabling our faculty to drive forward their novel research.

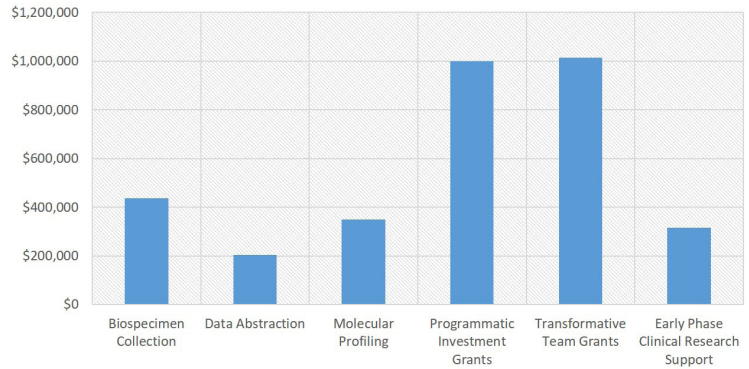
### Granting Road Maps

Do you have a funding strategy for the next 3 years? If not, STTR is able to work with you to develop a Grant Road Map to help you fund your research with NIH or foundation grants. We will create a timeline of milestones and deadlines to help you achieve your grant goals.

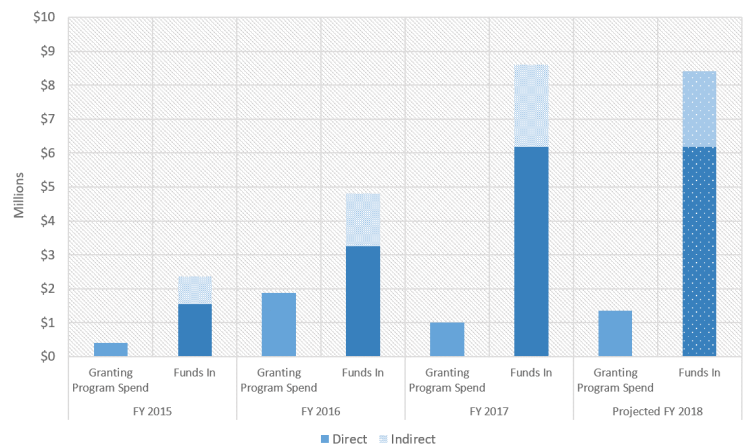
Your Faculty Road Map 2017-2019

SEATTLE TRANSLATIONAL TUMOR RESEARCH		2017	
www.STTRCancer.org		Qtr 1	Qtr 2
Project Manager:		Feb	Mar
Next year's due date TBD		Apr	May
		Jun	Jul
		Aug	
ID	Status	Task Name	Start
1	Complete	Grant	7/10/16
2	Complete	Grant	7/10/15
3	On Schedule	Grant	7/10/15
4	On Schedule	Grant	7/30/15
5	On Schedule	Grant	9/1/15
6	At Risk	Grant #1	8/9/15
7		Start Prep/Alert OSR, collect pilot d	6/1/15
8		Begin Writing	7/1/15
9		LOI Due	9/1/15
10		Begin routing application through	9/19/15
11	On Schedule	Grant #2	10/12/15
12		Start Prep/Alert OSR, collect pilot d	10/12/15
13		Begin Writing	11/1/15
14		LOI Due	12/18/15
15		Begin routing application through	1/1/16
16	On Schedule	Grant #3	12/1/15
17		Start Prep/Alert OSR, collect pilot d	12/1/15
18		Begin Writing	1/1/16
19		LOI Due	2/1/16
20		Begin routing application through	2/19/16
	On Schedule	Foundation #1	12/1/15
		Start Prep/Alert OSR, collect pilot d	12/1/15

STTR Granting Program Funding Awarded 2014-2016



STTR Granting Program Translates Pilot Funds into External Grant Support



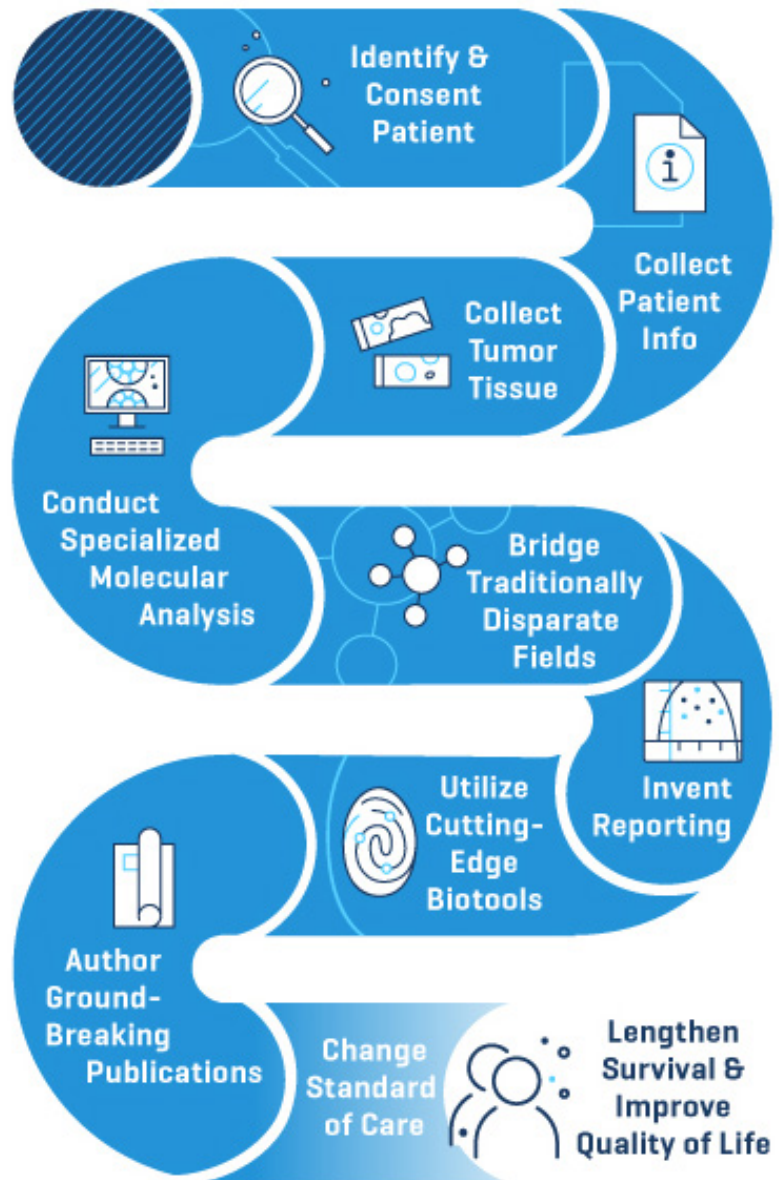
- ▶ Over \$3M in funding support provided through the STTR granting program since 2014
- ▶ Facilitated the development of 4 collaborative grant applications in 2018

# PRECISION MEDICINE PIPELINE DEVELOPMENT

## Specimen Collection & Paired Data Abstraction

Our highest priority is to create research and infrastructure that provides a foundation for personalized precision diagnostics and tailored therapies for cancer patients. 'Precision oncology' is a deceptively simple idea: identifying genes, pathways, microenvironments... etc. that drive a particular cancer and use this information to design precise, targeted therapies for each patient – ultimately reducing tumor burden or eradicating disease altogether. This requires a precision oncology pipeline to identify and collect tumors, link tumors with clinical and molecular data, and provide the tools for analysis and visualization.

Through emphases of our granting program, facilitation of biospecimen collection and profiling, biotool development and strategic alignment, STTR works to improve each step in the pipeline.



Biospecimen Support	Clinical Data Entry
<ul style="list-style-type: none"> <li>▶ Provided funding to support specimen collection &amp; molecular profiling</li> <li>▶ Cataloged 22 biospecimen repositories across institutions with relevance to our 15 programs</li> </ul>	<ul style="list-style-type: none"> <li>▶ Data dictionaries customized per disease program to ensure high-quality clinical data abstraction</li> <li>▶ NLP algorithms in development to increase accuracy &amp; efficiency of clinical data abstraction</li> </ul>

## BIOTOOL DEVELOPMENT

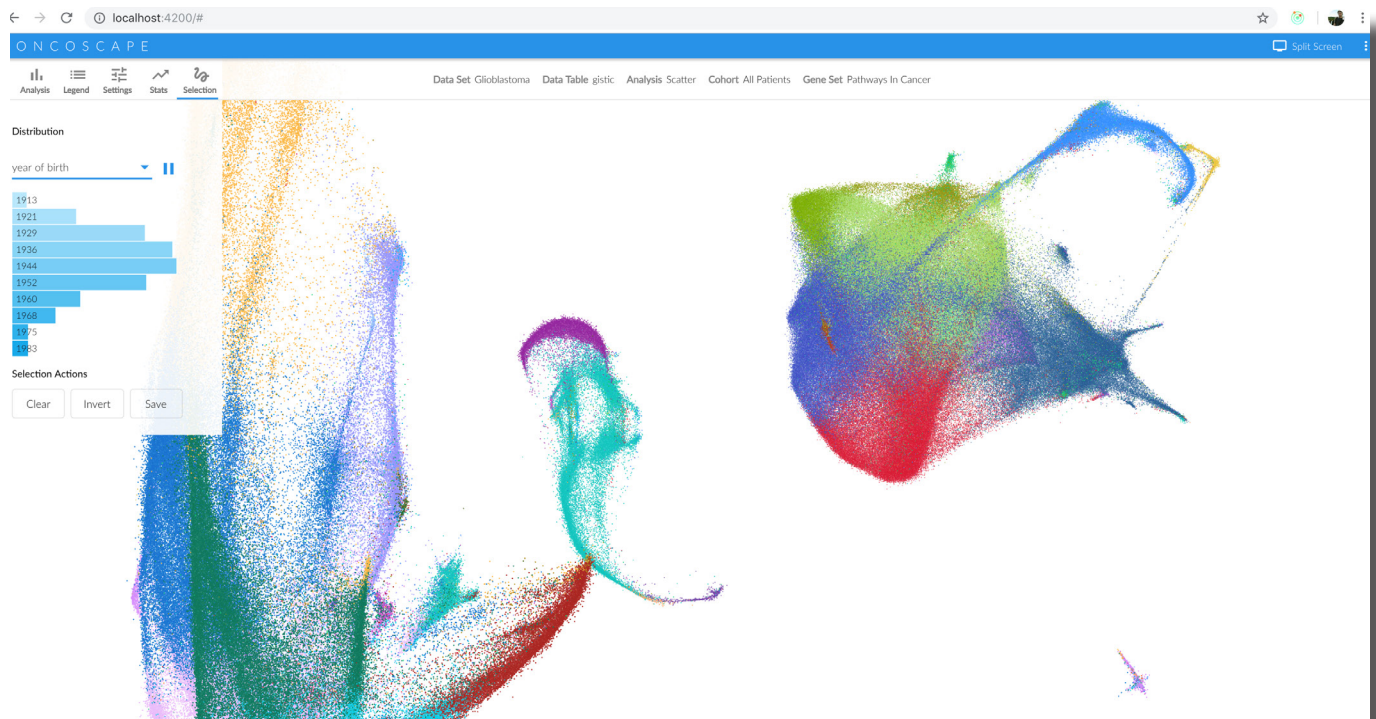
Oncoscope is a data visualization platform that empowers researchers to discover novel patterns and relationships between clinical and molecular data. Through a suite of interoperable tools, Oncoscope offers a unique and intuitive approach to hypothesis refinement. Oncoscope is designed to create a collaborative platform and community that unites the clinical, genetic, and computational fields in an effort to advance the understanding of cancer biology and improve patient care. We are making direct efforts to connect the entire pipeline in translational medicine, reduce duplicative efforts, and create a mechanism for sharing cross-disciplinary research and developments.

While researchers and clinicians now gather millions of bits of data per patient or per experiment, that data is often held in silos by different groups. By providing a portal equipped with rich data, powerful statistics and a simple interface, Oncoscope empowers users to quickly answer questions themselves and expedites discovery of novel patterns and relationships.



### Oncoscope is an essential tool for doctors and researchers interested in:

- Comparing patients or populations across an array of features, like genetic alterations [CNV, IHC, sequencing, expression] or clinical elements [treatment regimens, diagnostics, outcomes]
- Defining cohorts based on selected traits – identifying “patients like me”
- Aligning patient histories according to timeline events: diagnosis, treatment, progression, survival
- Performing powerful and integrated statistical analysis: Principle Component Analysis, Kaplan-Meier curves
- Creating high quality visualizations of molecular/clinical data





## Oncoscape (cont.)

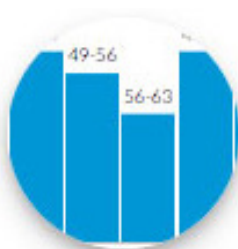
In addition to private investigator datasets, Oncoscape hosts level 3 public TCGA datasets representing gene and patient data downloaded from UCSC Xena. Experiment with Oncoscape Cancer Explorer: [oncoscape.sttrcancer.org](http://oncoscape.sttrcancer.org)

### Iterative Analysis



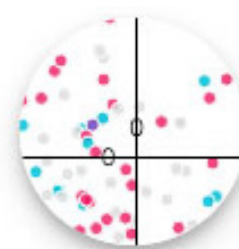
Seamlessly transfer knowledge among analytical tools. Discover new patterns and relationships by connecting diverse questions and answers.

### Cohort Discovery



Easily define patient sets of interest. Build, refine, and scale cohorts based on clinical and/or molecular factors.

### Interactive Visualizations



Access data and methods through a suite of visual tools. Combine the power of analysis and discovery through the simple click of a mouse.



### Oncoscape

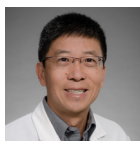
- ▶ Ongoing relationships with major organizations: SARC, the Broad, cBIO, MSKCC, ISB
- ▶ Several Fred Hutch-based labs uploaded their data and are participating in tool development
- ▶ 128 public and 11 private data sets in Oncoscape as of Nov 2018 with over 30 private datasets in queue
- ▶ 34 available tools, including 17 dimension reduction algorithms
- ▶ Reproducible workflows

## STTR DEPUTY DIRECTORS

STTR Deputy Directors develop programmatic strategy to support translational research. They identify opportunities for growth based on program-specific metrics. In addition, our Deputy Directors create a collaborative environment by leading monthly translational research meetings and building centralized resources and infrastructure.



**Bladder**  
Andrew Hsieh, MD



**Liver**  
Raymond Yeung, MD



**Pancreas**  
Sunil Hingorani, MD, PhD



**Brain**  
Eric Holland, MD, PhD



**Lymphoma**  
Ajay Gopal, MD



**Prostate**  
Pete Nelson, MD



**Breast**  
Peggy Porter, MD



**MDS/MPN**  
Joachim Deeg, MD



**Sarcoma**  
Seth Pollack, MD



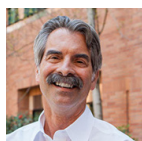
**Colorectal**  
William Grady, MD



**Myeloma**  
Damian Green, MD



**Thoracic/Head & Neck**  
McGarry Houghton, MD



**Leukemia**  
Jerald Radich, MD



**Ovary**  
Elizabeth Swisher, MD



**Skin/Cutaneous Onc.**  
Robert Pierce, MD

## SEATTLE TRANSLATIONAL TUMOR RESEARCH

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