

UNIVERSITY OF PITTSBURGH
NMVB
National Mesothelioma Virtual Bank



Facilitating Translational Research Since 2006

National Mesothelioma Virtual Bank

2017-Annual Face to Face Meeting

(<http://www.mesotissue.org>)

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NMVB- Accomplishments :

- *Continue to serve the translational research needs of the mesothelioma cancer research community.*
 - Collecting pleural and peritoneal malignant mesothelioma tissue samples (fresh frozen, fresh frozen paraffin embedded) and blood products from prospectively consented and retrospectively identified cases.
 - NMVB also provides four distinct tissue microarrays (TMA) for biomarker testing from each of the collaborating institutes.
 - To date, 41 requests have been received and 34 request have been fulfilled. Hundreds of biospecimens are shared to mesothelioma research community to facilitate novel biomarkers and therapeutic technique discoveries.

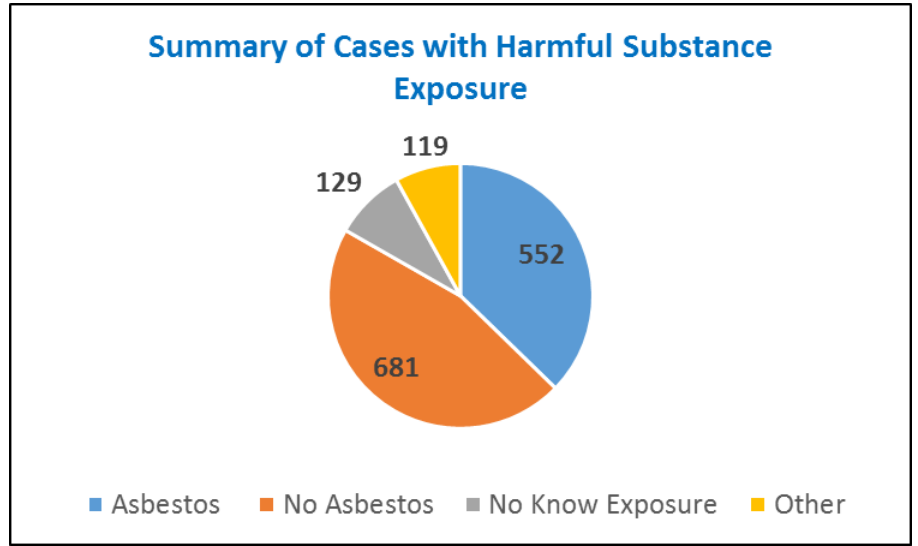
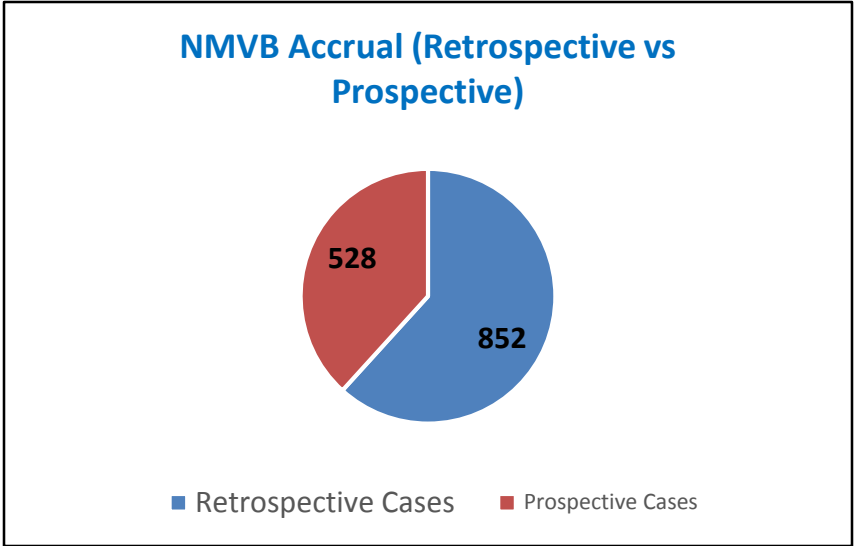
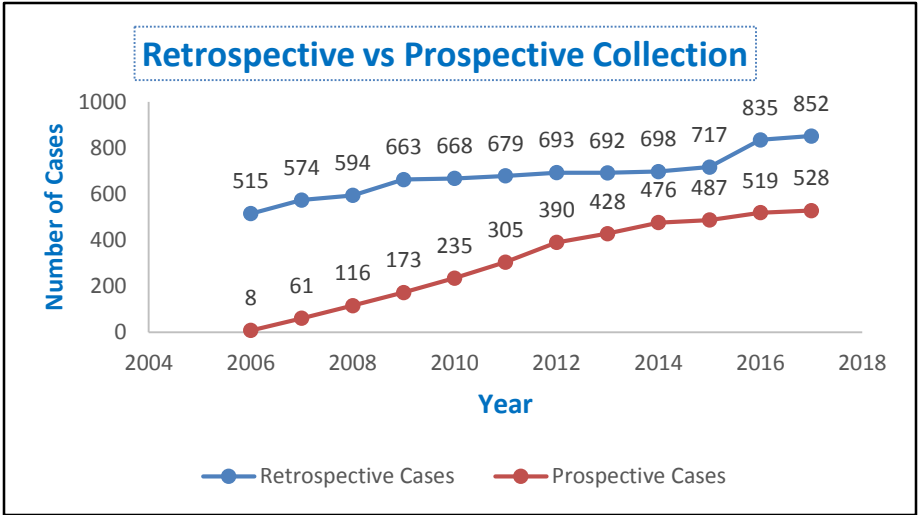
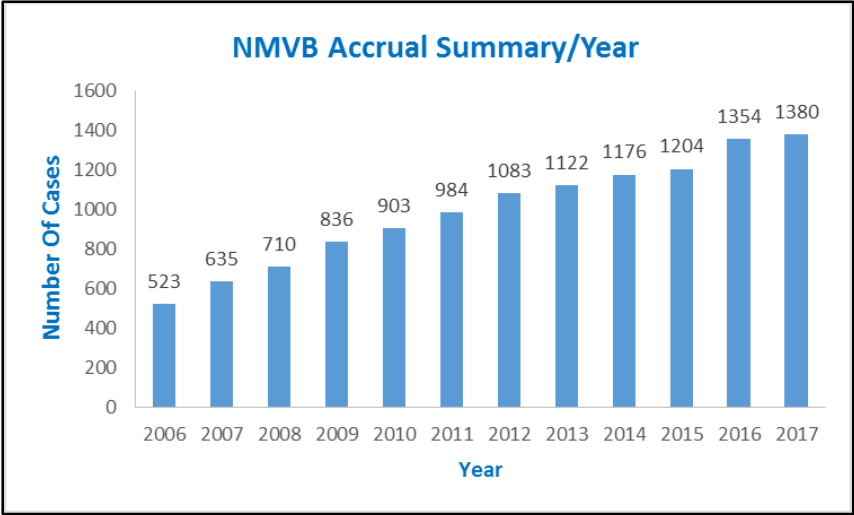
NMVB- Accomplishments (Cont'd..)

- *Expansion of NMVB resource to include new collections and sites:*
 - University of Maryland (UMD) has joined as a full collaboration partner in September 2016. UMD has a robust tumor banking infrastructure under the supervision of Drs. Joseph Friedberg, H. Richard Alexander and Allen Burke.
 - UMD has started its collection in April and has capacity to provide 40 prospectively consented pleural and peritoneal mesothelioma biospecimens (FF, FFPE and Blood Products) per year. In addition, UMD will provide FFPE samples from its archived collected cases.
 - UMD will provide 5th tissue microarray (TMA) and also contribute to the development of Collaborative TMA development.
 - RPCI (Roswell Park Cancer Institute) has implemented prospectively collection malignant mesothelioma specimen collection workflow and providing fresh frozen and blood products since September 2016.

NMVB- Accomplishments (Cont'd..)

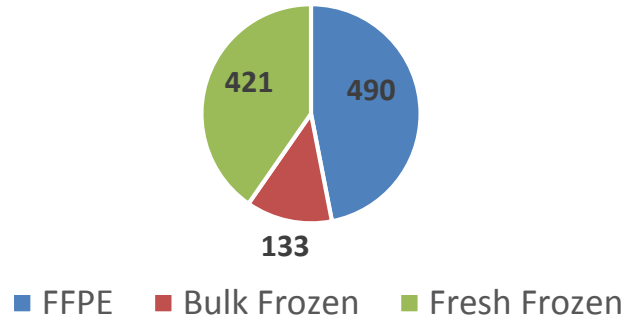
- *NMVB database, for annotation and querying malignant mesothelioma biospecimens:*
 - NMVB database provides data entry interface to annotate biospecimen at demographics, clinical, pathology and follow-up (including staging, treatment and recurrence) dataset level.
 - Public access statistical database for public query provides summary information on all the mesothelioma cases and their associated biospecimens stored into biorepository.
 - Password protected database, provides user authentication level access and provides data entry interface to annotated biospecimens.
(<https://www.data.mesotissue.org/mvb/home.seam>)

NMVB Accrual Summary

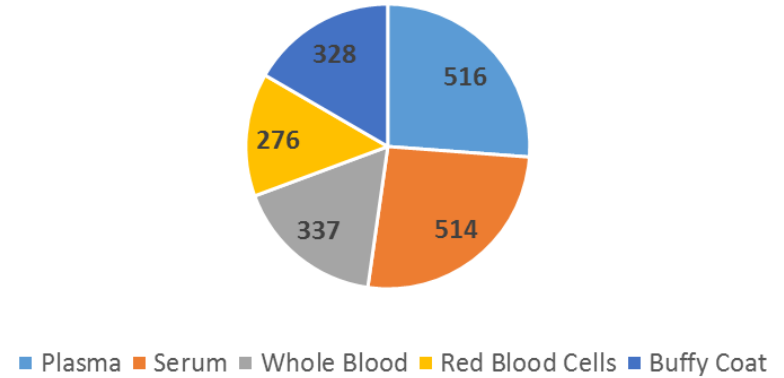


NMVB Accrual Summary:

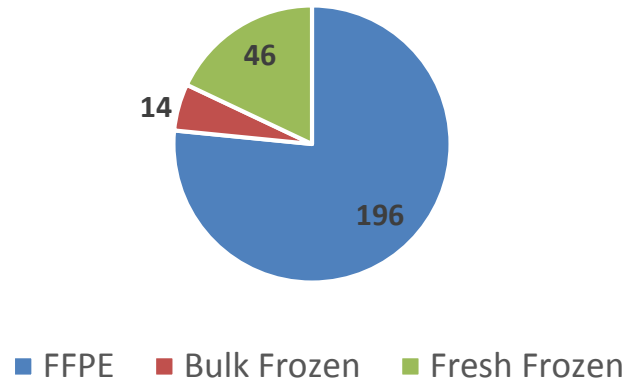
Availability of Resected Tumor Specimens Type /Cases



Availability of Blood Products /Cases



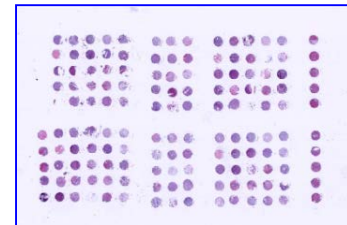
Availability of Biopsy Tumor Specimens Type / Cases



Percentage of Contribution / Each Site:

| Institutions | Retrospective Cases | Prospective Cases | Overall NMVB Total | % contribution |
|---------------|---------------------|-------------------|--------------------|----------------|
| NYU | 185 | 124 | 309 | 22% |
| U Penn | 151 | 176 | 327 | 24% |
| *MSSM | 7 | 40 | 47 | 3% |
| U Pitt | 438 | 188 | 626 | 45% |
| RPCI | 72 | 0 | 72 | 6% |
| Total | 852 | 528 | 1381 | 100% |

*MSSM was joined NMVB from 2010 -2012



NMVB Tissue Microarrays (TMAs):

- Tissue Microarrays (TMA) are used to test simultaneous analysis of molecular targets at the DNA, mRNA, and protein levels under identical, standardized conditions on a single glass slide.
- Four distinct TMA are available – one from each NMVB site. New collaborative site (UMD) is in process of developing 5th TMA. In addition, we are planning to develop a collaborative TMA with contribution of specimens from all sites to address a broader range of research questions.
- These four TMAs represents tumor tissue cores from 195 patients. Each tumor core annotated with tumor type, histological type, grade, stage and all clinical data
- TMA data excel, XML and maps files are available on the web site (<https://mesotissue.org/tmas>).

NMVB Biospecimens Request Status Report:

- To date over 41 requests have been received and 34 have been fulfilled, representing 27 different Universities and Research Institutes (**Two requests are In process**).
- Represent a total of almost 900 patients material shared with the mesothelioma research community.
- This is comprised by 795 paraffin blocks, 220 fresh frozen tissue samples and 742 of blood product samples as well as 178 TMAs and 200 control samples.
- Represents a total of 1935 biospecimens distributed with over 232200 de-identified data elements collected on individual biospecimens on patients in the NMVB database.
 - **Average turnaround from initial request to getting specimens is about 6 -8 weeks.**

NMVB Marketing Efforts:

- NMVB Web site (www.mesotissue.org)
- NMVB News Letter
- NMVB presence on social media, Facebook, LinkedIn, Twitter.
 - Facebook - @nmvb.org <https://www.facebook.com/nmvb.org>
 - Twitter - @nmvbtw <https://twitter.com/nmvbtw>
 - LinkedIn - @nmvb (<https://www.linkedin.com/in/mesothelioma-virtual-bank-302b11131/>)
- Presenting NMVB at national conferences (AMIA, USCAP, Meso-Foundation, iMiG).

<http://www.mesotissue.org/>

National Mesothelioma Virtual Bank

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The National Mesothelioma Virtual Bank (NMVB) collects and distributes tumor tissue and blood samples to the research community from consented patients. The specimens are stored with de-identified clinical data and that is made available for research. Investigators can search the study database to identify and request these materials via the NMVB website. NMVB is the largest and most accessible resource for biospecimens donated by mesothelioma patients.

NMVB currently has 1380 annotated cases and 1702 biospecimens including Paraffin Embedded Tissue, Fresh Frozen Tissue and Blood

Services

Consultation and interpretive services are available: trained pathologists can provide assistance in staining, interpretation, scoring, and basic statistical analysis. In

NMVB Database

Allows researchers to search clinically annotated mesothelioma biospecimens and standardized clinical annotation structure to incorporate data from

Specimens (Availability)

- Fresh Frozen

Goals to Accomplish During 2017:

- Constructing the mesothelioma protein interactome, a project to discover/predict novel Protein-Protein Interactions (PPIs) of genes implicated in mesothelioma genes.
- Continue to enhance marketing efforts to publicize the resource to larger community of investigator to increase the utilization of resource.
- Continue to improve the consenting and collection workflow to increase the accrual of prospective mesothelioma cases.
- Developing collaborative Tissue Microarray slides.
- Continue to engage investigators who has obtained specimens from NMVB resource. To collect information about the publications and grant awards that are originated from the use NMVB resource via online feedback forms (<https://www.mesotissue.org/node/88>).

Acknowledgements

Collaborators:

- Center for Disease Control and Prevention (CDC)
- National Institute of Occupational Safety & Health (NIOSH)
- Mesothelioma Foundation (Meso Fndn)
- Mount Sinai School of Medicine (MSSM)
- New York University (NYU), New York City, NY
- University of Pennsylvania (U Penn), Philadelphia, PA
- University of Pittsburgh (U Pitt), Pittsburgh, PA
- Roswell Park Cancer Institutes (RPCI), Buffalo, NY
- University of Maryland, Baltimore, MD

Leadership:

Michael J. Becich MD, PhD (U Pitt)

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Douglas Hartman MD, PhD (U Pitt)

James Luketich M.D (U Pitt)

James Pingpank, MD (U Pitt)

Carmelo Gaudioso (RPCI)

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David Bartlett, MD (U Pitt)

Wiam Bashra, MD (RPCI)

Glennara Bates (Meso Fndn)

H. Richard Alexander, MD (UMD)

Allen Burke, MD (UMD)

Thank you

PPT slide copies on DBMI thumb drives