

# BioSpecimen Exchange for Neurological Disorders (BioSEND)


*PSP Training Webinar*

# BioSEND Training Webinar Overview

1. Study Reminders
2. Site Equipment
3. PSP Biospecimen Collection Protocol
4. Study Visit Protocol
5. Kits & Samples
  - Requesting Kits
  - Labels
  - Sample Collection & Processing
  - Sample Shipment
5. BioSEND Website
6. Contact Information

# Study Reminders

*Please remember...*

- Biospecimens are limited, valuable resources.
- Standardization and quality are key! 
- Reference the BioSEND Manual of Procedures as needed.
- Do not replace or supplement any kit components without first receiving approval from BioSEND.

# Site Equipment

*The following items are to be supplied by the site:*

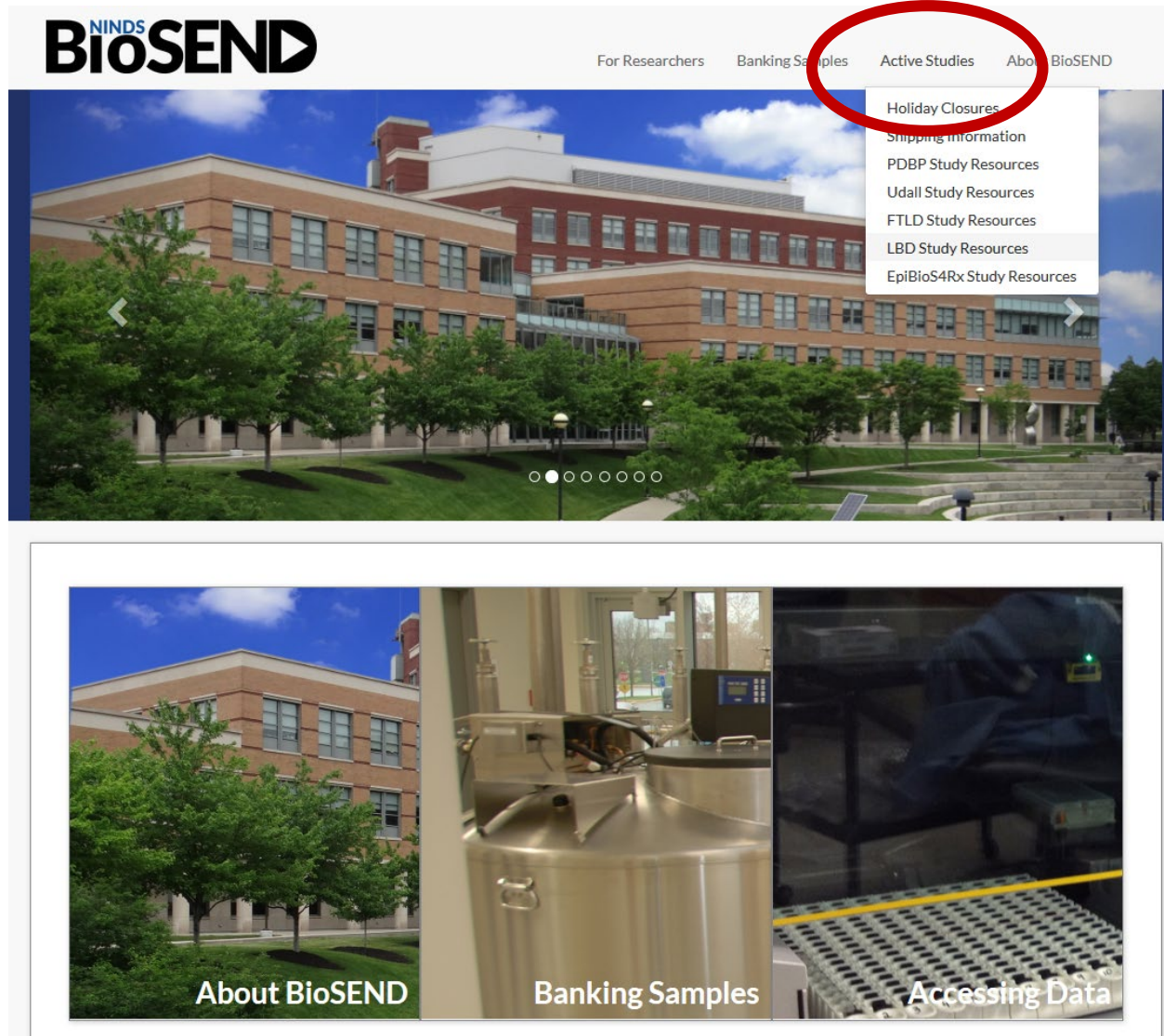
- Personal protective equipment
- Alcohol prep pads
- Butterfly needles and hubs
- Tourniquet
- Gauze pads
- Bandages
- Sharps bin and lid
- Microcentrifuge tube rack
- Test tube rack
- Crushed ice
- Pipettes and pipette tips
- 4°C Centrifuge
- -80°C Freezer
- Dry ice

# PSP Biospecimen Collection Protocol

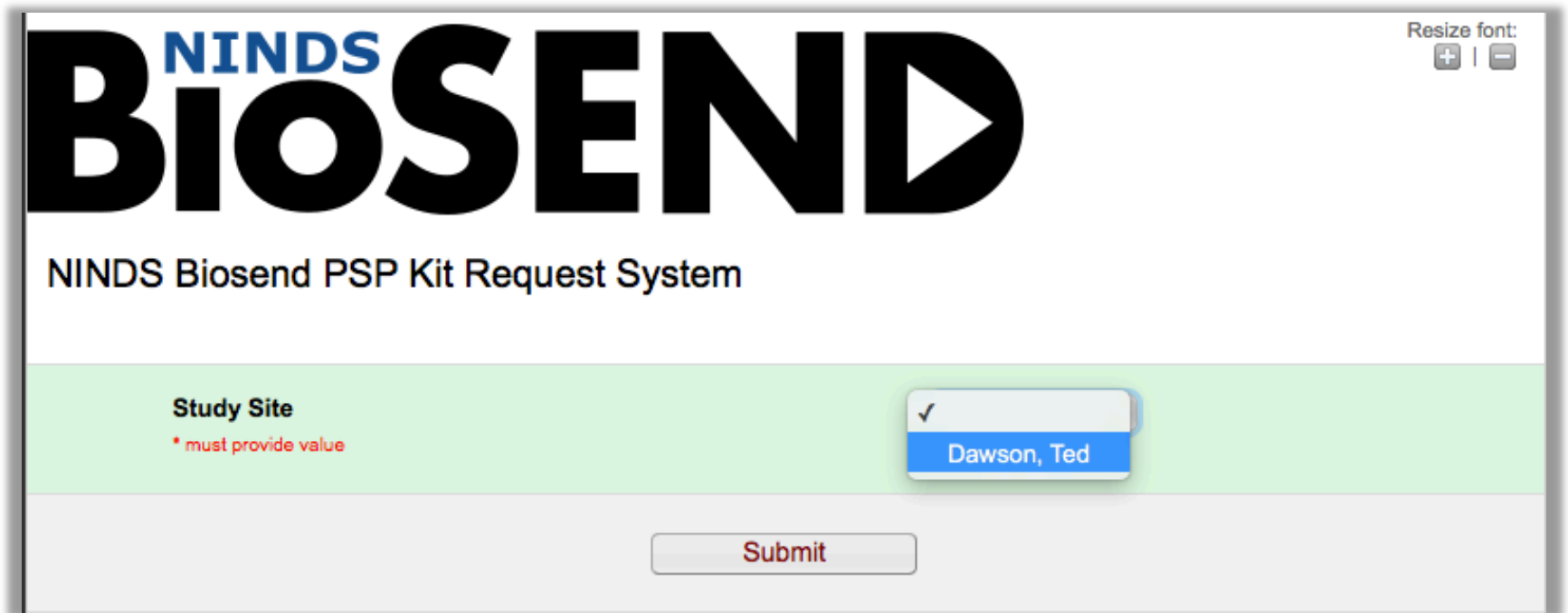
	BL	12M	24M
<b>DNA</b> (6ml)	X		
<b>Whole Blood</b> (6ml)	X	X	X
<b>Plasma</b> (6 x 1ml)	X	X	X
<b>Buffy Coat</b> (2 x 1ml)	X	X	X
<b>RNA</b> (2 x 2.5ml)	X	X	X
<b>CSF</b> (10 x 1ml)	X	X	X

# Requesting Kits

# NINDS BioSEND Website



# BioSEND Kit Request Module



The screenshot shows a web form for the NINDS BioSEND PSP Kit Request System. At the top, the logo features "NINDS" in blue and "BioSEND" in large black letters, with the "D" in "BioSEND" stylized as a play button. Below the logo is the text "NINDS Biosend PSP Kit Request System". In the top right corner, there is a "Resize font:" label with plus and minus icons. The form has a light green background for the input area and a light gray background for the bottom section. A label "Study Site" is followed by a red asterisk and the text "\* must provide value". To the right is a drop-down menu with a checkmark icon and the text "Dawson, Ted". At the bottom center is a "Submit" button.

NINDS  
**BioSEND**

NINDS Biosend PSP Kit Request System

Resize font: + | -

Study Site  
\* must provide value

✓  
Dawson, Ted

Submit

- <http://kits.iu.edu/biosend/psp>
- Choose your site PI from the drop-down list.



# BioSEND Kit Request Module

**NINDS Biosend PSP Kit Request System**

**Study Site**  
\* must provide value

Dawson, Ted ▾

**Johns Hopkins**  
**Anna Hall**  
Green Spring Falls Concourse  
10751 Falls Road, Suite 250  
Lutherville-Timonium, MD 21093  
410-616-2816  
ahall52@jhmi.edu

**Confirm site information:**

- Study site
- Shipping address
- Contact name
- Email

**Is the contact name above correct?**  
\* must provide value

☐ Yes  
☐ No

reset

**Is the shipping address above correct?**  
\* must provide value

☐ Yes  
☐ No

reset

**Is the e-mail address above correct?**  
\* must provide value

☐ Yes  
☐ No

reset

# BioSEND Kit Request Module

<b>Is the contact name above correct?</b> <small>* must provide value</small>	<input type="radio"/> Yes <input checked="" type="radio"/> No	reset
<b>New Contact Name</b> <small>* must provide value</small>	<input type="text"/>	
<b>Is the shipping address above correct?</b> <small>* must provide value</small>	<input type="radio"/> Yes <input checked="" type="radio"/> No	reset
<b>New Shipping Address</b> <small>* must provide value</small>	<div><input type="text"/></div> <div>Expand</div>	
<b>Is the e-mail address above correct?</b> <small>* must provide value</small>	<input type="radio"/> Yes <input checked="" type="radio"/> No	reset
<b>New e-mail Address</b> <small>* must provide value</small>	<input type="text"/>	

- Is the information correct?
- Provide the correct information if needed

# BioSEND Kit Request Module: Kit Type

## Kit Type

**\*\*Please allow two weeks for shipment\*\***

\* must provide value

- ☐ Baseline Visit Kit
- ☐ Annual Visit Kit
- ☐ Supplemental Kit
- ☐ Extra Supplies


Please specify in comments if you need kits before the standard two week shipment time.

# BioSEND Kit Request Module: Baseline Kit

<b>Kit Type</b> **Please allow two weeks for shipment** * must provide value	<input checked="" type="checkbox"/> Baseline Visit Kit <input type="checkbox"/> Annual Visit Kit <input type="checkbox"/> Supplemental Kit <input type="checkbox"/> Extra Supplies  Please specify in comments if you need kits before the standard two week shipment time.
<b>CSF Sprotte® Needle Gauge</b> * must provide value	<input type="radio"/> 22 <input type="radio"/> 24  reset
<b>Baseline Visit Kit Quantity</b> * must provide value	<input type="text"/>  If you need more than 10 kits or labels, please use the file upload option or submit multiple requests.

- BioSEND creates ST numbers for baseline kits
- Enter preferred CSF needle gauge
- Enter kit quantity

# BioSEND Kit Request Module: Annual Visits

Baseline or Annual Visit Kit Quantity	<input type="text" value="2"/>
<small>* must provide value</small>	<small>If you need more than 10 kits or labels, please use the file upload option or submit multiple requests.</small>
<p>If you going to request more than 10 kits/labels or prefer to upload a file with the Biorepository ID and Visit, you may download this template file and fill in the relevant information.</p> <p>Attachment:  <a href="#">BioSEND Kit IDs Template.xlsx</a> (0.01 MB)</p>	
<p>If you are using the provided template to upload Biorepository IDs and Visits, please upload your template file here.</p>	<a href="#">Upload document</a>
1st Kit Visit ID (only if not using file upload option)	<input type="text" value="ST-00012345"/> <small>e.g. ST-00012345</small>
1st Kit Visit Month	<input type="text" value="12 Month"/>
2nd Kit Visit ID (only if not using file upload option)	<input type="text" value="ST-0012346"/> <small>e.g. ST-00012345</small>
2nd Kit Visit Month	<input type="text" value="36 Month"/>

- Up to 10 kits can be requested:
  - Enter the PSP Subject ID - ST Number
    - (Example: ST-00012345)
  - Enter the follow up visit month

# BioSEND Kit Request Module: Supplemental Kit

<b>Kit Type</b> <b>**Please allow two weeks for shipment**</b> <small>* must provide value</small>	<input type="checkbox"/> Baseline Visit Kit <input type="checkbox"/> Annual Visit Kit <input checked="" type="checkbox"/> Supplemental Kit <input type="checkbox"/> Extra Supplies  <small>Please specify in comments if you need kits before the standard two week shipment time.</small>
<b>Supplemental Kit Quantity</b> <small>* must provide value</small>	<input type="text"/>  <small>If you need more than 10 kits or labels, please use the file upload option or submit multiple requests.</small>
<b>Comments</b>	<div></div> <div>Expand</div>
<b>Each Supplemental Kit Contains:</b>  2 100 ml absorbent sheets 2 6-tube bubble pouches 2 Cryoboxes 20 Siliconized sterile cryogenic vials (2 ml) 2 Screw-top centrifuge tubes (15 ml) 2 Screw-top centrifuge tubes (50 ml) 2 Biohazard bags 2 PAXgene® tubes (2.5 ml) 2 Lavender-top EDTA tubes (10 ml) 2 Purple-top EDTA tubes (6 ml) 2 Disposable transfer pipettes (1ml) 2 Warning label packets	

- Contains a variety of extra kit pieces

# BioSEND Kit Request Module: Extra Supplies

## Kit Type

**\*\*Please allow two weeks for shipment\*\***

\* must provide value

- ☐ Baseline Visit Kit
- ☐ Annual Visit Kit
- ☐ Supplemental Kit
- ☒ Extra Supplies

Please specify in comments if you need kits before the standard two week shipment time.

6-Tube Bubble Pouch

- ☐ 2
- ☐ 4

Cryobox

- ☐ 2
- ☐ 4

Siliconized Sterile Cryogenic Vial (2 ml)

- ☐ 10
- ☐ 20

reset

FedEx return Airbill

- ☐ 2
- ☐ 4

reset

- Allows you to choose specific supplies and particular quantities

# BioSEND Kit Request Module: Multiple Orders

## Kit Type

**\*\*Please allow two weeks for shipment\*\***

\* must provide value

- ☒ Baseline Visit Kit
- ☒ Annual Visit Kit
- ☒ Supplemental Kit
- ☒ Extra Supplies

Please specify in comments if you need kits before the standard two week shipment time.

- You can order more than one type of kit in a single kit request



# BioSEND Kit Request Module: Submit

- Click “Submit” to turn in your request.
- The BioSEND staff will notify you that your request has been received and address any issues.

**NINDS BioSEND**  
NINDS Biosend PSP Kit Request System

Resize font: [icon] [icon]

**Study Site**  
\* must provide value  
Dawson, Ted

**Johns Hopkins**  
Anna Hall  
Green Spring Falls Concourse  
10751 Falls Road, Suite 250  
Lutherville-Timonium, MD 21093  
410-616-2816  
ahall52@jhmi.edu

**Is the contact name above correct?**  
\* must provide value  
☒ Yes  
☐ No  
reset

**Is the shipping address above correct?**  
\* must provide value  
☒ Yes  
☐ No  
reset

**Is the e-mail address above correct?**  
\* must provide value  
☒ Yes  
☐ No  
reset

**Kit Type**  
\*\*Please allow two weeks for shipment\*\*  
\* must provide value  
☐ Baseline Visit Kit  
☐ Annual Visit Kit  
☐ Supplemental Kit  
☐ Extra Supplies  
Please specify in comments if you need kits before the standard two week shipment time.

**Comments**  
[Text Area]  
Expand

**Submit**

# Labels

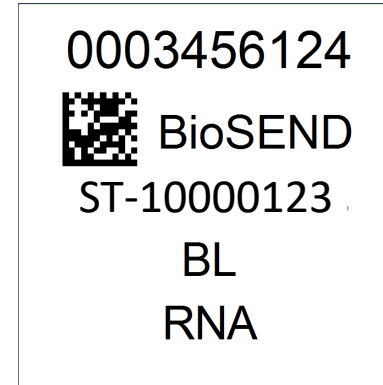
# Types of Labels

## Case Label



**Identify study and PI**

## Specimen Label



**Identify individual biospecimens**

# Case Label



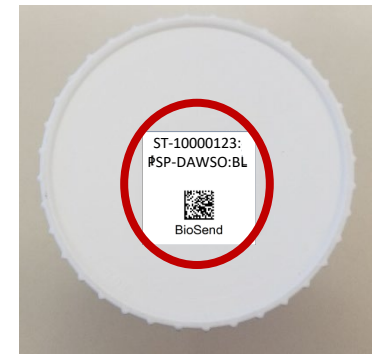
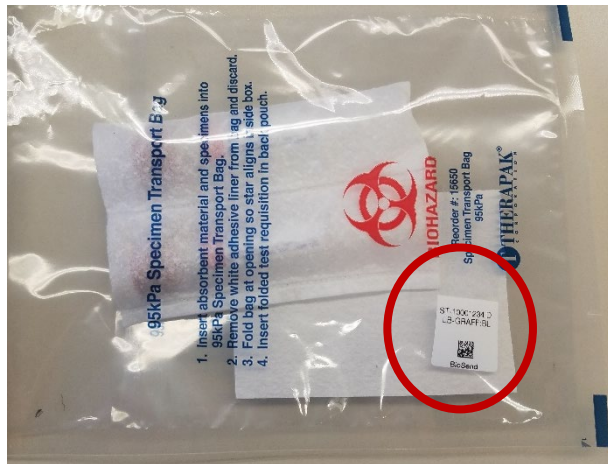
← Subject Number  
← Study – PI  
← Visit

← Biorepository Name

# Case Labels

Case labels are placed:

- On the plastic biohazard bag of the cryovial transport box.
- On the plastic biohazard bag for the PAXgene® tubes.
- On the lid of the shipping canisters.
- *On the lid of frozen shippers*



# Collection and Aliquot Tube Label

0003456124



BioSEND

ST-10000123

BL

RNA



**Biospecimen Number**



**Study = BioSEND PSP**



**Subject Number**



**Visit Type**



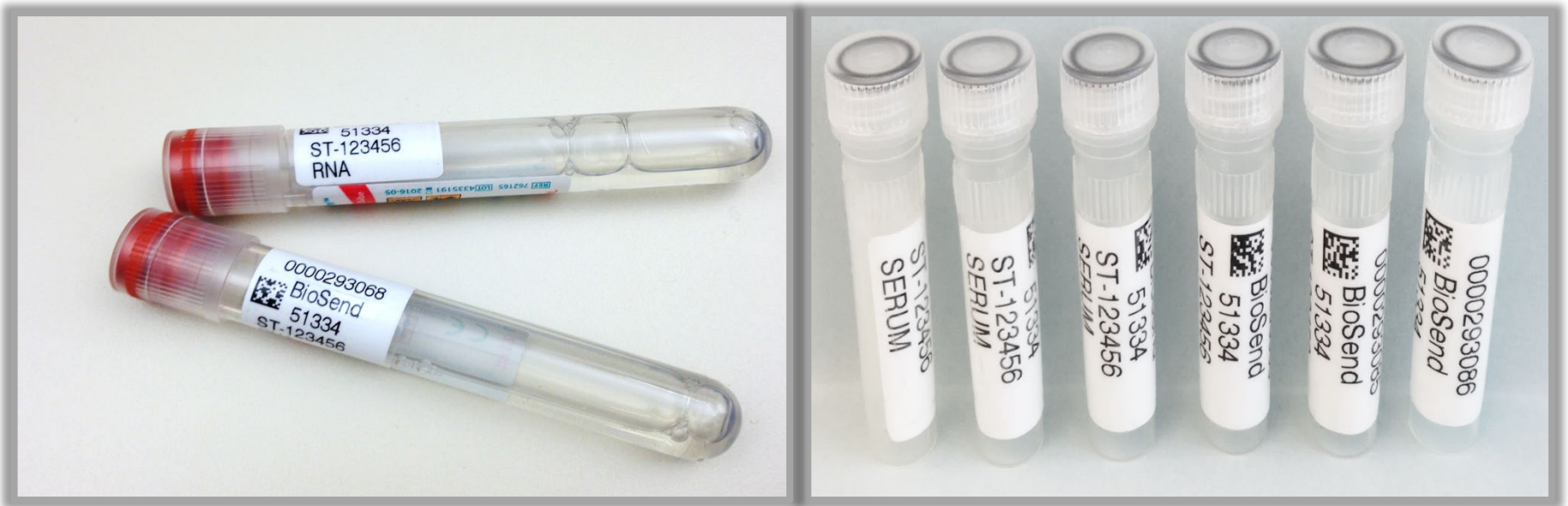
**Specimen Type**

# Collection and Aliquot Tube Label

Collection and Aliquot Tube Labels are placed on:

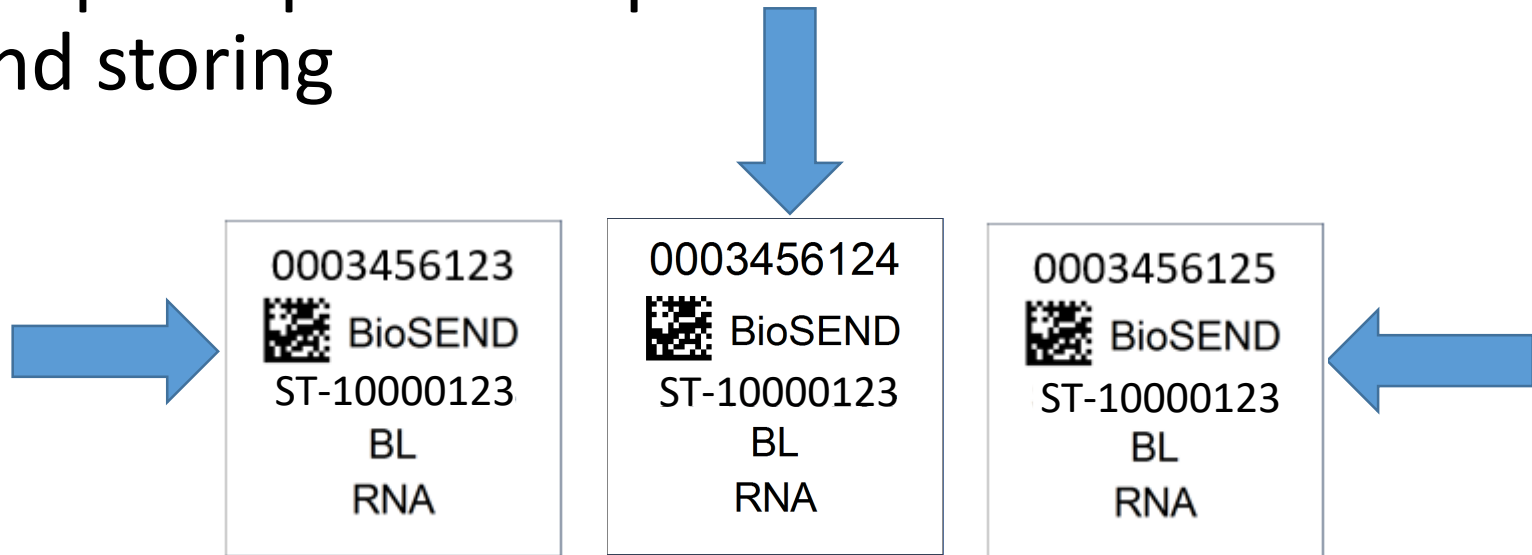
- All collection tubes
- All aliquot tubes (Cryovials)

*Be sure that the tube has the correct specimen type on the label*



# Aliquot Labels

- Keep samples in sequential order when labeling and storing





# Sample Collection & Processing

## *Reminders:*

- Collection of biospecimen blood samples should be from subjects who have been fasting for 8 hours or more. If fasting is not feasible, follow suggested low-fat diet.
- G force  $\neq$  RPM
- All specimens should be frozen and stored UPRIGHT
  - For RNA and whole blood specimens, please freeze samples upright in a non-styrofoam rack
  - For plasma, buffy coat, and CSF aliquots, please freeze samples upright in the cryobox provided

# Calculating Centrifugation Speed

<https://www.eppendorf.com/CA-en/centrifuge-speed-calculator/>

Centrifuge Calculator

**Rotational Speed and centrifugal force**

To calculate the relative centrifugal force at the given rotor speed and given rotor radius, please enter the values in the appropriate fields and press the Calculate RCF key.

The Calculate Speed key provides information on the required rotational speed at the given relative centrifugal force and the given rotor radius.

Please specify centrifuge and rotor or enter rotor's radius directly

5810/5810 R

**Rotors for 5810/5810 R**

- 30-place fixed-angle rotor for 1.5-2.0 ml tubes (F-45-30-11)
- 30-place Aerosol-tight fixed-angle rotor for 1.5-2.0 ml tubes (FA-45-30-11)
- 6 x 85 ml High-speed fixed-angle rotor (F-34-6-38)

= Radius 10 cm

**Relative centrifugal force (RCF)**

RCF 1500 x g

**Speed**

Speed 3663 rpm

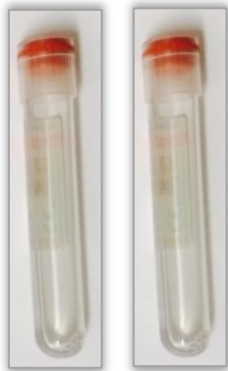
Calculate Speed >>

<< Calculate RCF

***\*The 3663 rpm speed was calculated using a hypothetical radius of 10 cm and a RCF of 1500 x g.***

# Order of Specimen Collection

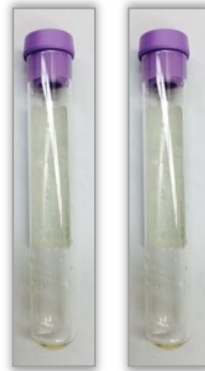
1. PAXgene® tube for RNA
2. EDTA **6 ml (purple top)** blood collection for DNA (only at BL visit)
3. EDTA **10 ml (lavender top)** blood collection for plasma and buffy coat
4. EDTA **6 ml (purple top)** blood collection for frozen Whole Blood



**PAXgene  
(RNA)**



**EDTA  
(DNA)**



**EDTA  
(Plasma)**



**EDTA  
(WB)**

# PAXgene™ Preparation (2.5ml Tube)



## Step One



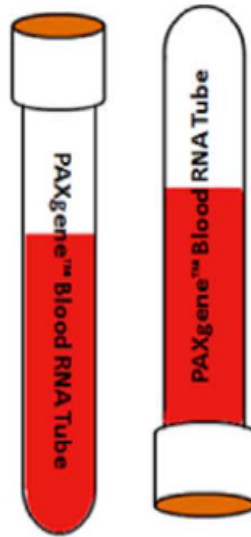
- Store tubes at room temperature.
- Label tubes with pre-printed subject labels prior to blood draw.

## Step Two



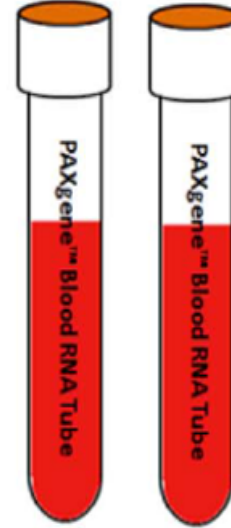
- Collect blood into *one* PAXgene Tube allowing blood to flow for 10 seconds and ensuring blood flow has stopped.

## Step Three



- Immediately after blood draw, invert tubes 8-10 times to mix samples.
- **Repeat steps two and three for second tube.**

## Step Four



- Incubate tubes upright at room temperature for 24 hours before freezing the samples.

## Step Five



- After 24 hour incubation at room temperature, store tubes upright in a -80°C in a wire rack until shipment.



# DNA Preparation (6 ml Lavender Top Tube)



## Step One



- Store tube at room temperature.
- Label tube with pre-printed labels prior to blood draw.

## Step Two



- Collect blood in tube, allowing blood to flow for 10 seconds and ensuring blood flow has stopped.

## Step Three



- Immediately after blood draw, invert tubes three times to mix samples.

## Step Four



- Hold the specimen at room temperature until shipment BioSend.

# Plasma Preparation (10ml Lavender Top Tube)



## Step One



- Store tube at room temperature.
- Label tube with pre-printed subject labels prior to blood draw.

## Step Two



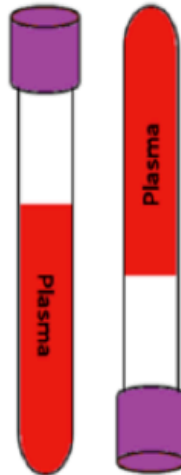
- Label 6 cryovials for plasma and 2 cryovials for buffy coat with pre-printed subject labels prior to blood draw.
- Pre-chill cryovials on wet ice for 5 minutes or longer.

## Step Three



- Collect blood in Plasma Tube allowing blood to flow for 10 seconds and ensuring blood flow has stopped.

## Step Four



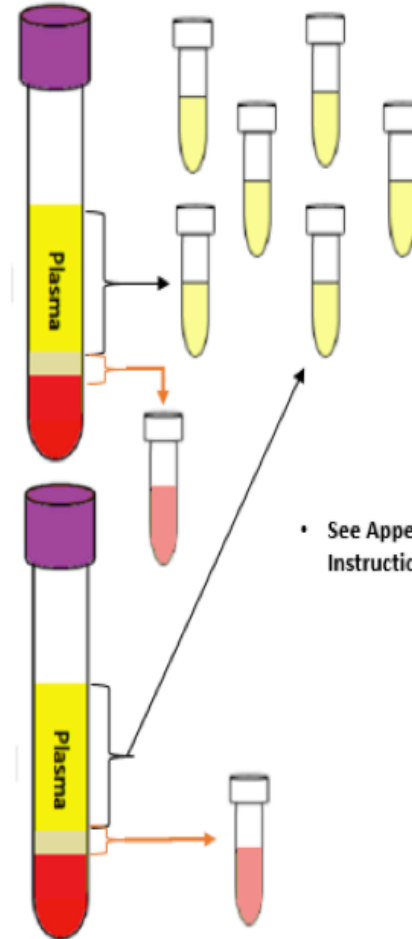
- Immediately after blood draw, invert tubes 8-10 times to mix samples.
- Repeat Steps 3 and 4 for second tube.

## Step Five



- Within 30 minutes of blood draw, centrifuge samples at 1500 x g for 15 minutes at 4°C.

## Step Six and Seven



- Aliquot 1.0mL of plasma into 6 cryovial tubes.
- Store plasma aliquots at -80°C until shipment.
- Return 6 X 1.0 mL plasma aliquots to BioSend

- See Appendix C for Buffy Coat Preparation Instructions.

# Whole Blood (6 ml Lavender Top Tube)



## Step One



- Store tube at room temperature.
- Label tube with pre-printed labels prior to blood draw.

## Step Two



- Collect blood in tube, allowing blood to flow for 10 seconds and ensuring blood flow has stopped.

## Step Three



- Immediately after blood draw, invert tubes three times to mix samples.

## Step Four



- Transfer to -80°C freezer. Store upright and keep frozen until shipment BioSend.

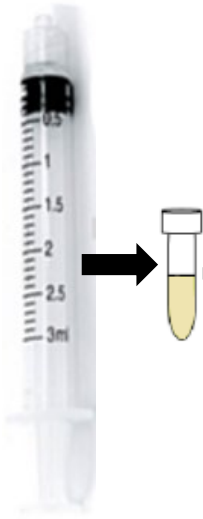
# Lumbar Puncture Procedure

- 24g or 22g spinal needle provided in custom LP tray
- Prepare transfer and aliquot tubes (NOT in LP tray but in kit)
  - **Label first!**
  - **Do NOT** pre-chill aliquot tubes



# CSF Preparation Processing

## Step One



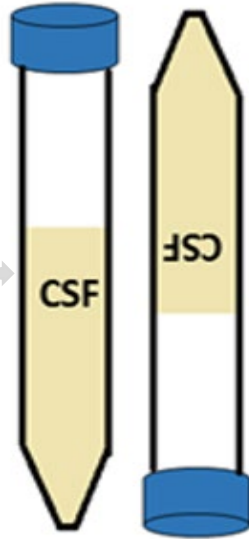
- Collect CSF into the 3 mL luer lock syringe or by gravitational pull.
- Dispense 1-2 mL in a cryovial.
- Send to local lab for testing.

## Step Two



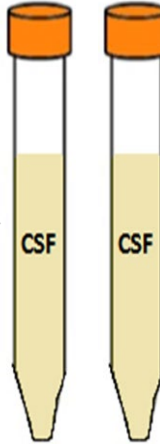
- Collect CSF into 6 mL luer lock syringe or by gravitational pull.
- Collect approved volume into 50 mL conical tube.

## Step Three



- Immediately after collection, invert 50 mL conical tube 3-4 times to mix sample.

## Step Four



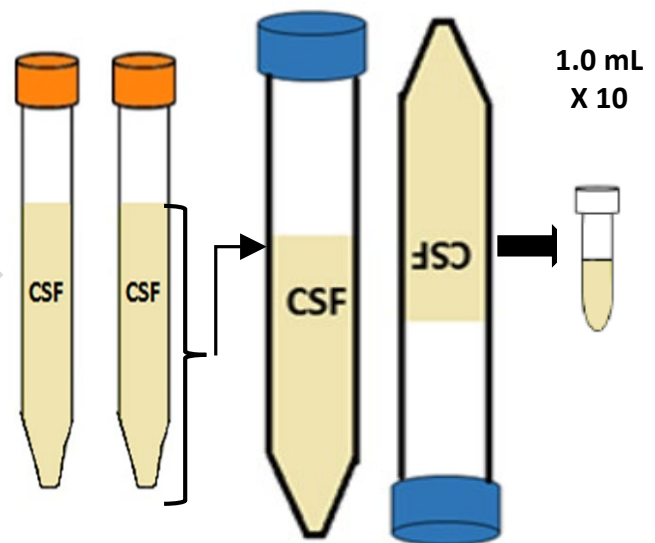
- Transfer CSF into 2 15 mL conical tubes.
- Within 15 minutes of collection, centrifuge samples at room temperature at 2000 x g for 10 minutes.

## Step Five



- Label tubes with pre-printed subject labels prior to collection.

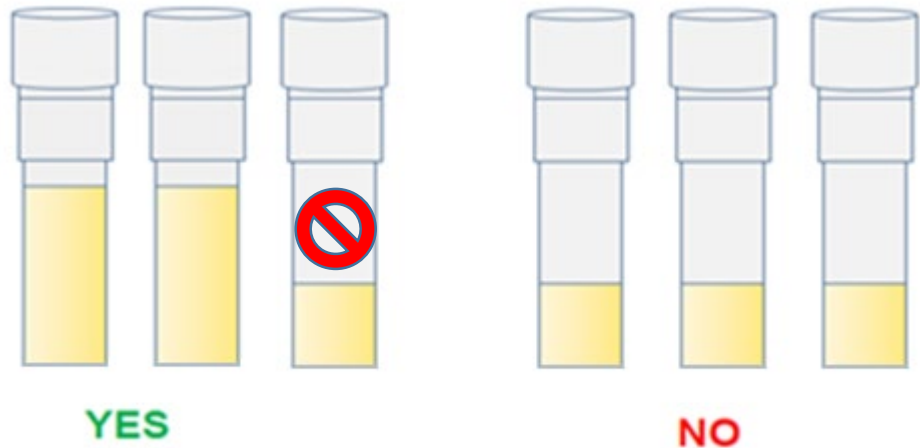
## Step Six



- Using a clean transfer pipette, transfer CSF from both 15 mL conical tubes into a NEW 50 mL conical tube leaving the debris in the bottom.
- Mix the 50 mL conical tube gently by inverting 3-4 times.
- Aliquot 1.0 mL into 10 cryovials, Aliquot residual mL in last cryovial (for site use).
- Store CSF aliquots at -80°C until shipment.
- Return 10 1.0 mL aliquots to BioSend.

# Plasma, Buffy Coat and CSF Aliquots

- Fill cryovials to 1ml
- Over-filled vials may burst in freezer
- Ship material to BioSEND
  - 6 Plasma aliquots
  - 2 Buffy Coat aliquots
  - 10 CSF aliquots
- Do NOT send residual volumes to BioSEND



# Blood Collection: Troubleshooting

## Issue #1: Collection tube with little/no vacuum

- Always check expiration dates before beginning blood draw and discard expired tubes
  - *Tubes expire on last day of month printed on tube*
- Store tubes at ambient temperature
  - *Extreme temperatures can affect vacuum*
- Keep extra tubes from supplemental kit nearby during blood draw to replace “bad” tubes
- If frequent occurrence, report tube type and lot numbers to Indiana University

# Blood Collection: Troubleshooting

## Issue #2: Hemolyzed (pink/red) serum and plasma

Cause: Blood Collection Methods	Corrective Action
Improper venipuncture site	Draw from median cubital, basalic, and cephalic veins from antecubital region of arm
Prolonged tourniquet use	Tourniquet should be released after no more than 1 min, excessive fist clenching should be avoided
Not allowing alcohol to dry on skin before venipuncture	Without touching, allow the venipuncture site to air dry
Lumen of needle too close to inner wall of vein (indicated by slow blood flow)	
Use of too large/small bore needle resulting in excess force applied to blood	Avoid using too small/large needle. Needle size dependent on the subject's physical characteristics & amount of blood to be drawn. Most commonly used sizes are 19 – 23.
Pulling/pushing plunger too fast while drawing/transferring blood	Avoid drawing the syringe plunger too forcefully when collecting blood
	Ensure all blood collection assemblies are fitted securely, to avoid frothing

# Blood Collection: Troubleshooting

## Issue #2: Hemolyzed (pink/red) serum and plasma

Cause: Sample Processing Methods	Corrective Actions
Vigorous mixing/shaking	Gently invert blood collection tube when mixing additive with specimen, follow guidelines in Biologics Manual regarding number of times to invert each type of tube
Not allowing serum to clot for recommended time	Serum tubes without clot activator should be allowed to clot for 60 min in a vertical position
Exposure to excessive heat or cold	Keep samples at ambient temp
Prolonged contact of serum/plasma with cells	Do not store uncentrifuged samples beyond recommended time

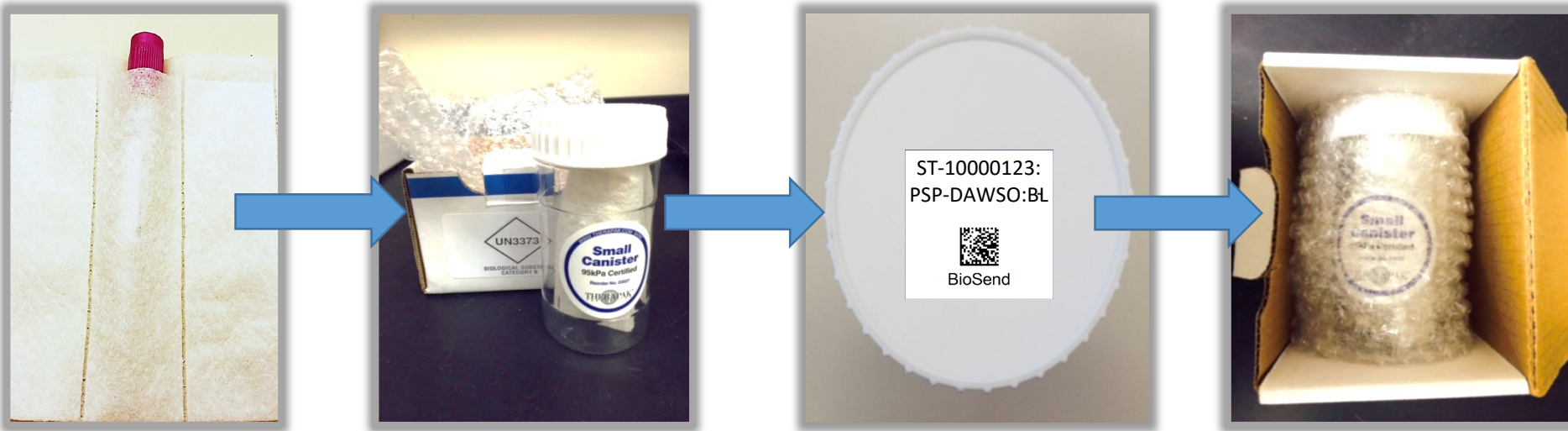
Reference: BD's "Tech Talk" newsletter, Vol. 2, No. 2, October 2003  
([http://www.bd.com/vacutainer/pdfs/techtalk/TechTalk\\_Jan2004\\_VS7167.pdf](http://www.bd.com/vacutainer/pdfs/techtalk/TechTalk_Jan2004_VS7167.pdf))

# Sample Shipment

# Ambient Sample Shipment

- 6 ml purple (EDTA) whole blood for DNA collection tube
  - Collected at BL visit
- **Monday – Thursday only via FedEx® Priority Overnight**
- Schedule FedEx® pickup
- Email Sample Record and Shipment Notification Form including the FedEx tracking number **AHEAD OF SHIPMENT to BioSEND**

# Packaging Ambient Samples



- Insert tube into the tube sleeve.
- Insert the sleeve into the canister.
- Seal the canister tightly.
- Place case label on canister.
- Wrap the canister in the enclosed bubble wrap.
- Place canister into the cardboard box.



# Labeling Ambient Sample Shipments

- Apply the UN3373 label to the outside of the cardboard box.
- Place the box and a copy of the PSP Sample Record and Shipment Notification Form in the Clinical Pak and seal the Pak.
- Complete the “From” portion of the air waybill with your name, address, and phone number.
- Apply the air waybill to the outside of the package.



**From: Please print and press hard.**

Sender's Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

**Internal Billing Reference**

3 To: \_\_\_\_\_

Company: INDIANA UNIV SCHOOL OF MED

Address: 200 W WALNUT ST # 5198

City: INDIANAPOLIS State: IN ZIP: 46202-5198

0121575270

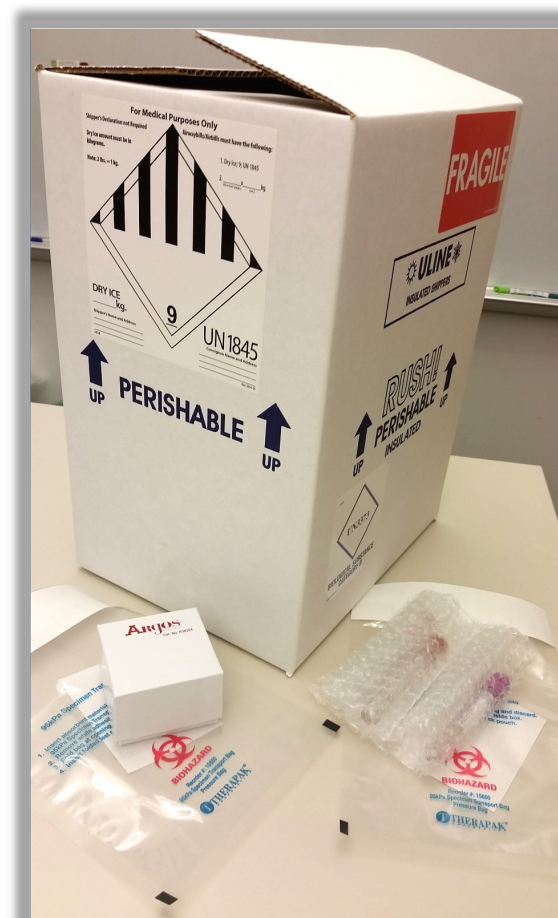
**Deliveries when and where you want.**

# Shipping Ambient Samples

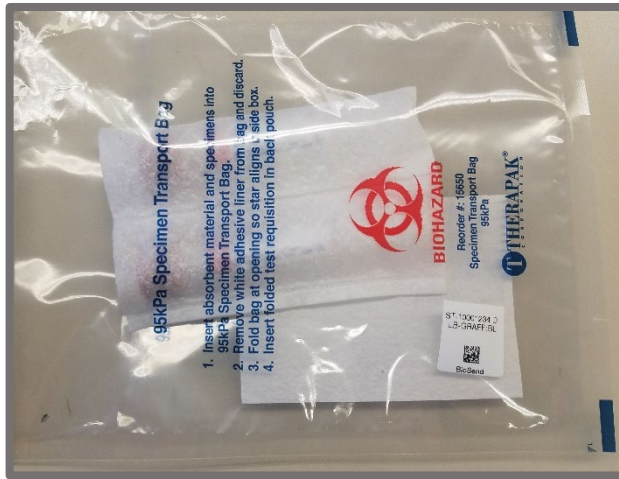
- Ship the sample(s) to BioSEND on the day of collection.
- If this is not possible, hold at room temperature until shipping can be arranged.
- ***Sample(s) must be received at BioSEND within 5 days of collection. Please do not ship these samples on Fridays.***

# Frozen Samples

- **All other samples are shipped frozen**
  - Plasma, buffy coat, CSF, whole blood and PAXgene®
- **Ship Monday-Wednesday Only via FedEx® Priority Overnight**
- Schedule FedEx® pickup
- Email Sample Record and Shipment Notification Form including FedEx® tracking number **AHEAD OF SHIPMENT**



# Packaging and Shipping Frozen Samples



**Pack bags, place upright & side-by-side**

**FILL dry ice to top of box**

# Packaging & Shipping Troubleshooting

## Issue: Broken/Damaged Tubes

Cause	Preventative Action
Over filling tubes	Fill tubes to suggested volume. If any sample still remains, place in an additional tube
Improper packaging	Ensure the tubes are securely placed into the bubble wrap pouch and are placed in a separate bag from the boxed plasma, serum, and CSF.
Rough shipping conditions	Extra bubble wrap may be needed to pad blood tubes
Extreme changes in temperature (ambient→freezer; freezer→dry ice)	Wrapping the tubes in bubble wrap before freezing may help slow the cooling process

# Shipping Frozen Samples

- Hold packaged samples in a -80°C freezer until pickup.
- ***Samples should be received at BioSEND within 2 weeks of collection.***



# Sample Shipment Notification Form

## Sample Record and Shipment Notification

Study:

Site Name:

Principal Investigator:

Coordinator:

Telephone:

Email:

Please list only ONE subject per Sample Record Summary and Shipment Notification Form

GUID:

Subject ID (ST# from pre-printed labels):

Gender:

Visit Type:

Age in Years:

Plus Months:

**Instructions:** Ship Frozen Shipments Monday- Wednesday ONLY! Ambient Shipments (purple-top EDTA tube) may be shipped Monday- Thursday (preferably Monday- Wednesday) provided they are received at Indiana University within five days of collection. This form must be completed for shipment of all research samples. Notify Indiana University (email preferred) and the DMR in advance of shipment using contact information below. Place a copy in the shipment box and file a copy of the completed form in the study binder. Ensure all frozen shipments are completely filled with dry ice.

Date Sample(s) Shipped:

FedEx Tracking Number:

In the table below, please indicate the date of specimen collection and number of tubes/aliquots submitted.

Completed by Submitter/Site			
Dates of Draw	Specimen Type	Number of Tubes/ Aliquots sent to BioSEND	Notation of Problems
	DNA		
	RNA		
	Buffy Coat		
	Plasma		
	Serum		
	CSF		
	Whole Blood		

Contact Information: Indiana University; Email: biosend@iu.edu Ph: 317-278-0594  
Data Management Resource (DMR); Email: PDBP-OPS@mail.nih.gov


# Sample Shipment Notification Form, Online

NINDS

BioSEND

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Sample Record and Shipment Notification



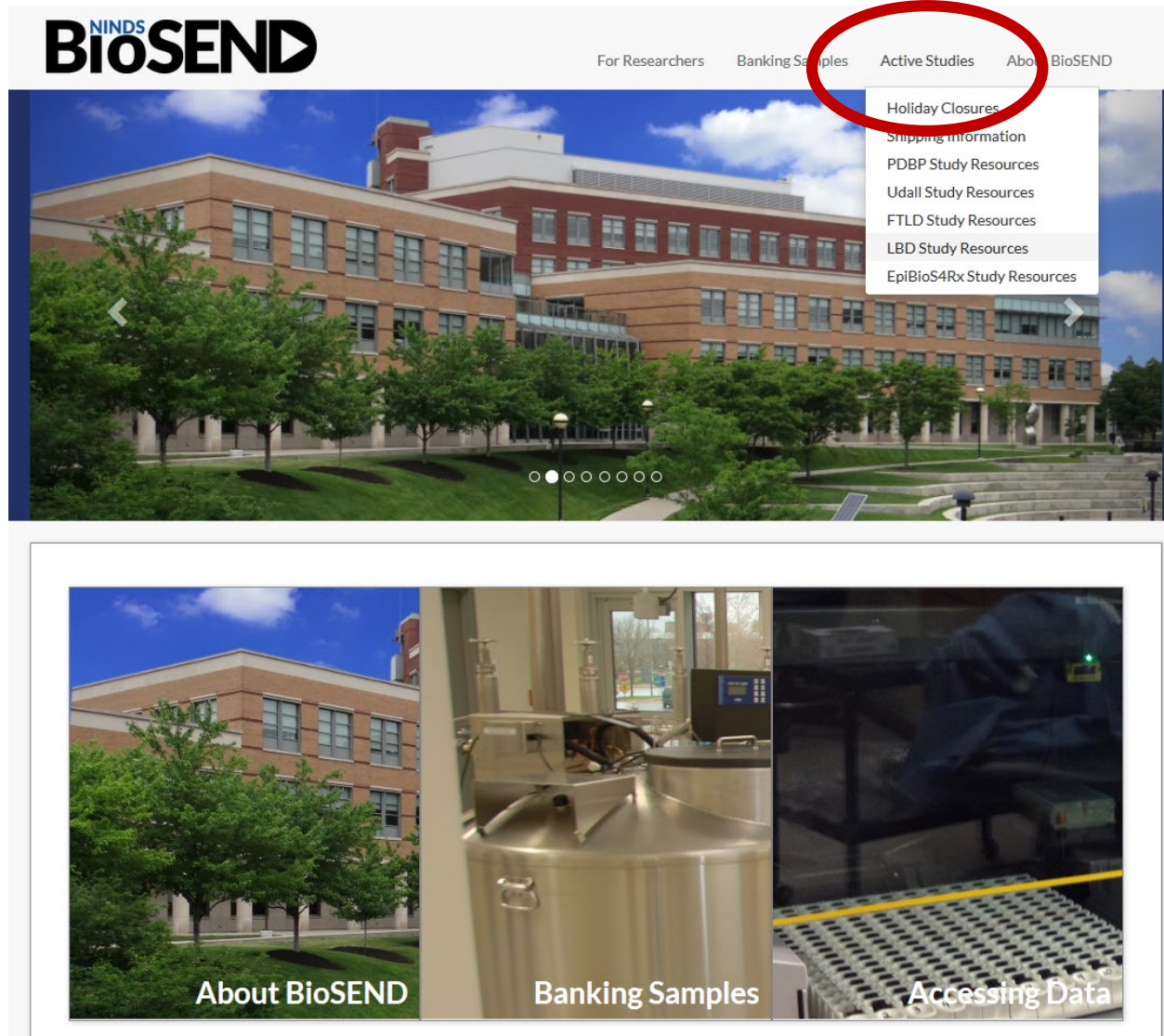
### Sample Information

Date Sample(s) Shipped	FedEx Tracking Number
<input type="text" value="07/27/2017"/>	<input type="text" value="FedEx Tracking #"/>

Draw Date	Specimen Type	# of Tubes Sent	Notation of Problems
<input type="text" value="Draw Date"/>	<input type="text" value="DNA"/>	<input type="text" value="# of Tubes"/>	<input type="text" value="Notation of Problems"/>
<input type="text" value="Draw Date"/>	<input type="text" value="RNA"/>	<input type="text" value="# of Tubes"/>	<input type="text" value="Notation of Problems"/>
<input type="text" value="Draw Date"/>	<input type="text" value="Plasma"/>	<input type="text" value="# of Tubes"/>	<input type="text" value="Notation of Problems"/>
<input type="text" value="Draw Date"/>	<input type="text" value="Serum"/>	<input type="text" value="# of Tubes"/>	<input type="text" value="Notation of Problems"/>
<input type="text" value="Draw Date"/>	<input type="text" value="CSF"/>	<input type="text" value="# of Tubes"/>	<input type="text" value="Notation of Problems"/>
<input type="text" value="Draw Date"/>	<input type="text" value="Whole Blood"/>	<input type="text" value="# of Tubes"/>	<input type="text" value="Notation of Problems"/>
<input type="text" value="Draw Date"/>	<input type="text" value="Buffy Coat"/>	<input type="text" value="# of Tubes"/>	<input type="text" value="Notation of Problems"/>



# NINDS BioSEND Website



# Holiday Closures

Date	Holiday
January 1	New Year's Day
3 <sup>rd</sup> Monday in January	Martin Luther King, Jr Day
4 <sup>th</sup> Monday in May	Memorial Day
July 4	Independence Day (observed)
1 <sup>st</sup> Monday in September	Labor Day
4 <sup>th</sup> Thursday in November	Thanksgiving
4 <sup>th</sup> Friday in November	Friday after Thanksgiving
December 25	Christmas Day

# BioSEND Contact Information

- Questions?

Please contact: Claire Wegel ([cwegel@iu.edu](mailto:cwegel@iu.edu))

- Email: [biosend@iu.edu](mailto:biosend@iu.edu)

# Questions?