

UAMS

UNIVERSITY OF ARKANSAS
FOR MEDICAL SCIENCES



RESIN (Research Support Information Network)

Presented by: Office of the Vice Chancellor for Research

Date: September 4, 2012



Agenda

■ Research Updates & Timely Information:

- ⊕ Office of the VCR
- RSC
- IRB
- IACUC
- COM Finance & Admin
- ⊕ UAMS Library
- BioVentures
- ⊕ Biomedical Informatics

- COI
- ORSP
- ORC
- DLAM
- OGSP
- ⊕ TRI/Core Facilities
- ⊕ UAMS Library
- ⊕ Grants Accounting



Molecular Imaging Facility

Michael J. Borrelli, Ph.D., Core Director

■ Core Instruments and Services

■ 7 T Bruker MRI

- T1, T2, T2*, Diffusion MRI, MRS, DTI, and more

■ Siemens FOCUS 220 MicroPET

- Quantitative and ultrasensitive imaging of Biomolecules, Drugs, nanoparticles, etc.

■ Siemens 11 MeV Cyclotron and Radiochemistry Lab

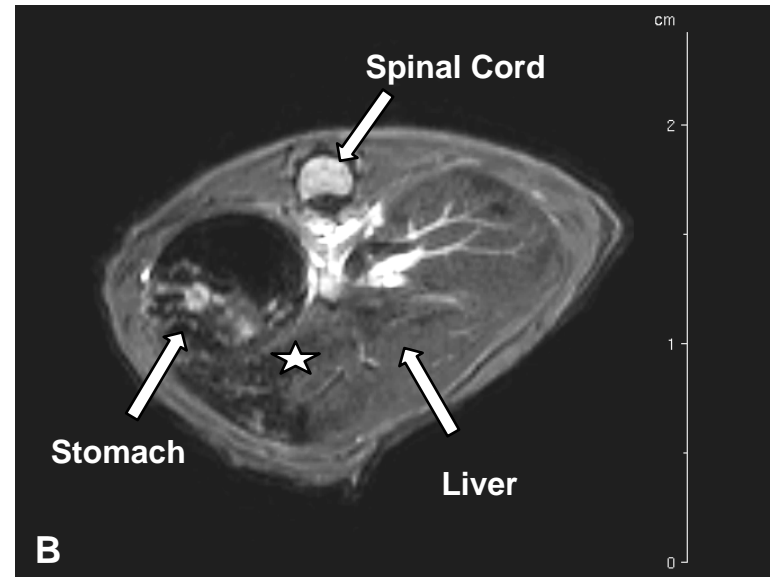
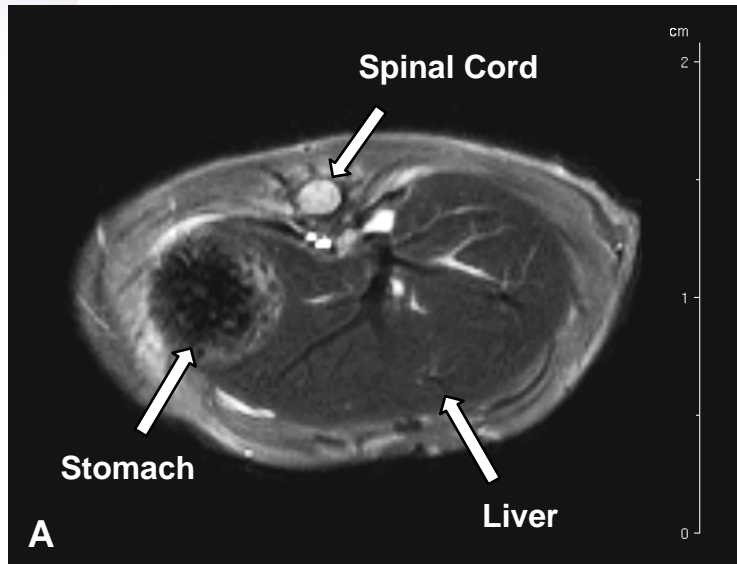
- Production of PET Isotopes: ^{18}F , ^{11}C , ^{13}N , ^{15}O , ^{124}I , ^{89}Zr
- Labeling of biomolecules Drugs, NPs, etc. with PET Isotopes. Custom Labeling and many, standard, “off the shelf” items



Molecular Imaging Facility

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■ MRI Imaging of Liver Damage



Courtesy of Laura James, M.D.

- A. MRI image of normal mouse liver
- B. Mouse liver showing damage from acetaminophen overdose. The darker-appearing regions of the liver adjacent to the star (★). The presence and extent of this damage to the liver was subsequently confirmed by microscopic histopathology of the excised liver.

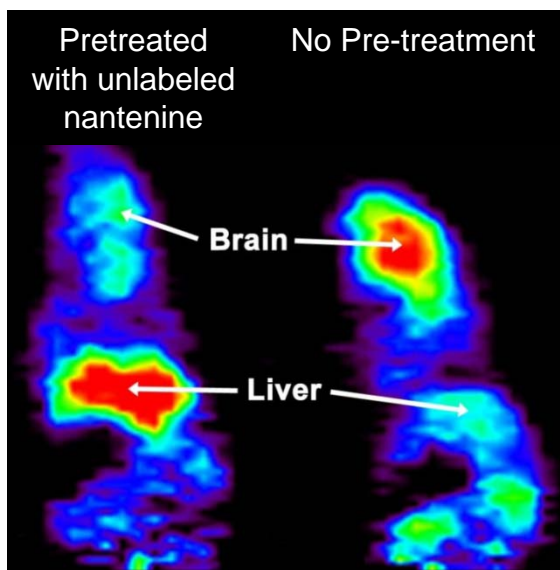


Molecular Imaging Facility

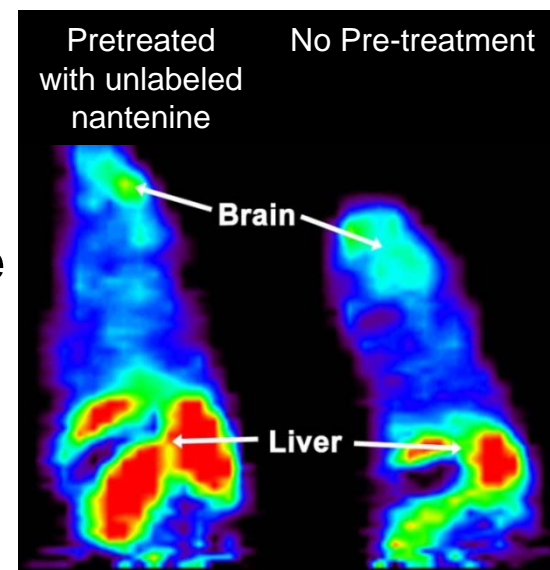
Michael J. Borrelli, Ph.D., Core Director

■ Uptake, Distribution, and Clearance on Nantenine in Mice

Uptake



Clearance



Courtesy of Bill Fantegrossi, Ph.D.

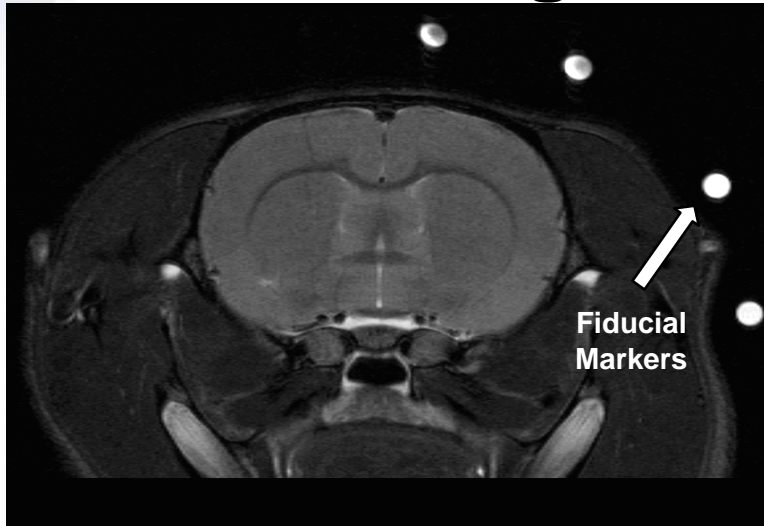
- Nantenine is a tracer/mimic for the drug Ecstasy
- Nantenine was labeled with C-11 and a PET scan acquired over 1 hour
- Mice pretreated with unlabeled Nantenine showed no uptake of radiolabeled Nantenine in the brain because cold nantenine blocked receptors
- High C-11 Nantenine in the liver demonstrated metabolism of C-11 Nantenine
- Mice not pretreated with cold nantenine showed definite C-11 Nantenine uptake in the brain in the early part of the scan
- Increased activity was later detected in the liver as the compound was cleared from the brain.



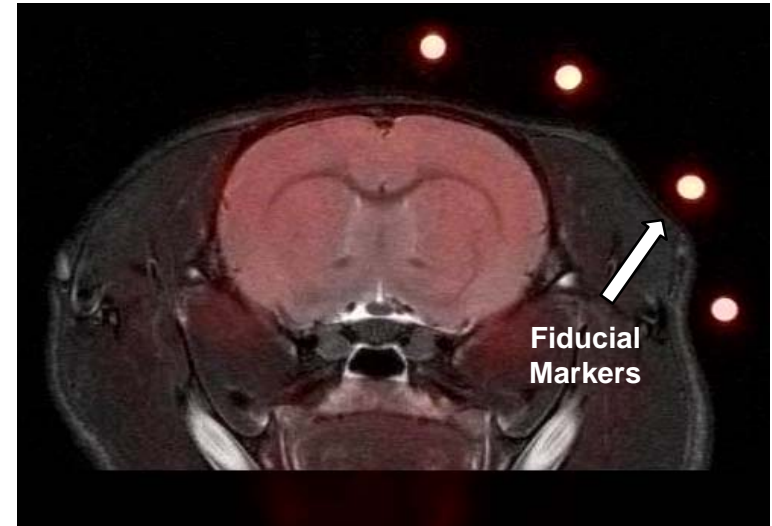
Molecular Imaging Facility

Michael J. Borrelli, Ph.D., Core Director

■ MRI-PET Image Fusion



7 T MRI Image of Normal Rat Brain



MRI-PET Image of Normal Rat Brain

- Fiducial markers containing ^{18}F and CuSO_4 are used to assure proper alignment of PET and MRI images
- Functional MRI (fMRI) images can also be fused in to show sections of brain undergoing higher activity during a specific task (e.g. eye blinking, eating response, etc.)
- Response time of fMRI is faster than ^{18}F -FDG uptake.



Molecular Imaging Facility

Michael J. Borrelli, Ph.D., Core Director

■ Summary

- 7 T MRI can perform same imaging sequences as clinical MRIs and more
- MicroPET provides spatial and quantitative information about injected markers. Potential unlimited because of custom marker production capability
- MRI-PET provides excellent morphological information (MRI) combined with sensitive marker activity/kinetics
- Longitudinal imaging studies with same animals are less expensive and have better experimental biostatistical significance
- Free use of Imager Analysis Laboratory



NIH Public Access Policy: Tips for Compliance

Susan Steelman, MLIS; Assoc. Prof.; Head of Educ. & Ref. Services

■ The Law – Which Articles Are Covered?

- All articles resulting from NIH funded projects
 - Grants funded Oct. 2007-Present OR
 - Contracts signed April 7, 2008 – Present)
 - Direct or Indirect

- In a Peer-reviewed journal (includes review articles)

- Available in PMC w/in 12 months of publication



NIH Public Access Policy: Tips for Compliance

Susan Steelman, MLIS; Assoc.
Prof.; Head of Educ. & Ref. Services

■ Did You Know???

An article & PI will show up on non-compliant list if the article has not been deposited to PubMed Central within...

3 months of publication



NIH Public Access Policy: Tips for Compliance

Susan Steelman, MLIS; Assoc. Prof.; Head of Educ. & Ref. Services

■ Why Care?

■ Possible Penalties Include...

- Special conditions placed on awards
- Suspension, termination or withholding of support
- NIH seek recovery of funds
- Grantee barred from future NIH funding



NIH Public Access Policy: Tips for Compliance

Susan Steelman, MLIS; Assoc. Prof.; Head of Educ. & Ref. Services

TIP #1 - Thinking of Publishing?

- Verify existence of statement in copyright agreement re: permission to submit manuscript
- If statement is not in the publisher's standard agreement, see this form letter at:

2

<http://www.library.uams.edu/schpub/Publisher%20letter%20-%204-3-08.pdf>

Get permission in writing !!!!



NIH Public Access Policy: Tips for Compliance

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TIP #2 - Has the Article been Accepted?

- Start the submission process to NIHMS immediately
- Author can set embargo date

2



NIH Public Access Policy: Tips for Compliance

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TIP #3 - Communication

- **Communicate with any recipients of sub-awards**
 - Are they preparing an article?
 - Who on their team will be doing the submission?
- **Communicate with any co-authors**
 - Identify who will do submission & be designated Reviewing Author

2



NIH Public Access Policy: Tips for Compliance

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TIP #3 - Know What You CAN DO

- Know the difference -- PMID# vs. PMCID# vs. NIHMS#
- Only authors (who have signed the copyright) have right to do final approval on manuscripts mockup
- Only manuscripts may be submitted - NOT full text from publisher's site
- Understand that publishers may submit manuscript but Reviewing Author must still do approvals!

2



NIH Public Access Policy: Tips for Compliance

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TIP #4 - Call Us for Help

- UAMS Library's Participation in NIH Pilot Project
- We can provide customized non-compliance reports
- We can communicate with NIH if there are questions
- Call us at: [686-6737](tel:686-6737) or email: SteelmanSusanC@uams.edu

2



Update on UAMS Data Trust

William Hogan, MD, Assoc. Prof. and Chief, Division of Biomedical Informatics

■ Outline

- What is it?
- Where are we now?
- Where are we going?



Update on UAMS Data Trust

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■ What is it?

An enterprise-wide data warehouse, which is
*...an organizational system that derives insight and knowledge from all or significant parts of the data that an enterprise's various business systems collect**

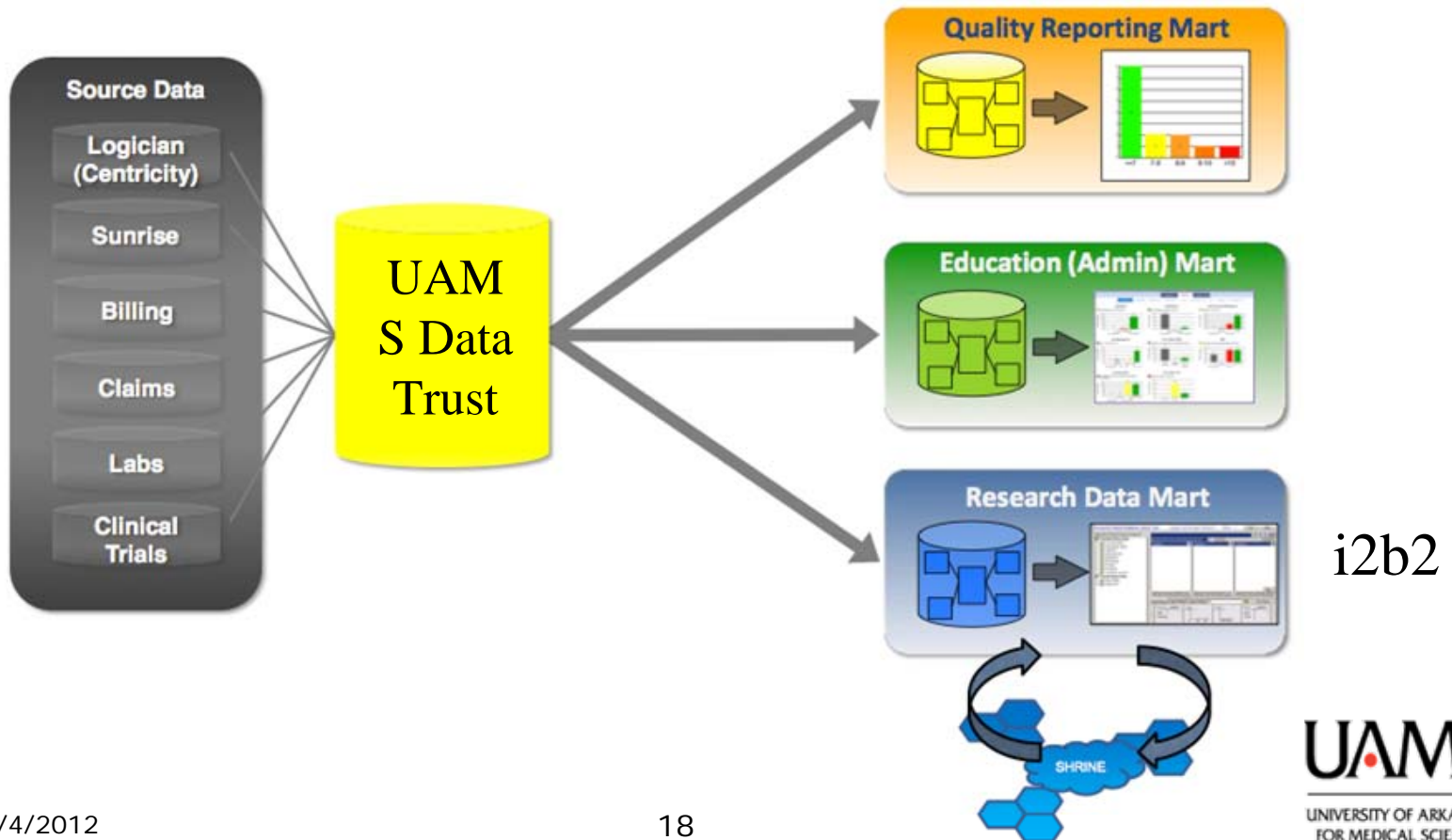
*Adapted from <http://searchsqlserver.techtarget.com/definition/data-warehouse>



Update on UAMS Data Trust

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■ Where are we?





Update on UAMS Data Trust

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Data type	2012-08	% growth last period	% growth since 2011-11
Patients	796,705	1.79	18.11
Encounters	16,916,224	3.64	49.93
Diagnoses	22,973,922	4.55	116.25
Procedures CPT	9,835,137	3.37	1277.36
Procedures ICD	890,079	5.44	18.63
Laboratory results	*19,485,400	*-59.35	*-55.17
Vital - BP Systolic	3,206,089	8.96	32.73
Vital - BP Diastolic	3,203,908	8.97	32.74
Vital - Pulse	2,115,202	4.07	13.53
Vital - Temp	2,462,300	10.11	38.43

*Cause under investigation, but likely a technical issue



Update on UAMS Data Trust

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Data type	2012-08	% growth last period	% growth since 2011-11
Height	777,909	7.36	25.31
Weight	1,723,692	6.09	20.36
BMI	700,609	7.56	481.66
Medications - Ordered	2,724,408	8.52	30.27
Medications - Administered	3,815,888	9.24	33.04
Medications - Prescribed	2,102,698	3.61	13.79
Vaccine - Administered	156,485	2.17	12.11
Vaccine - Ordered	3,857	5.82	40.61
MSDRG	398,090	3.49	125.86
Discharge Disposition	562,965	3.93	86.65
Length of Stay	757,435	3.95	59.67



Update on UAMS Data Trust

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■ Where have we been?

- Delivered 15 data sets for research
- Enabled 50+ researchers to conduct 500+ queries
- Finalized UAMS policies surrounding honest broker systems



Update on UAMS Data Trust

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■ Examples

- Patients who underwent partial nephrectomy in past 7 yrs
- Patients admitted with Li intoxication in past 10 yrs
- Anaphylaxis in the perioperative setting
- Acute hemolytic transfusion reactions in the perioperative setting
- Patients with CKD stage 3 or higher
- Patients who had surgery and received Ofirmev drug **one** time
- Patients with penetrating keratoplasty who subsequently had graft rejection, study period: 1/1/2000 to 1/1/2010
- Patients who had transurethral resection of bladder tumor with accidental perforation of the bladder
- Biological factors influencing cardiac cachexia
- Effect of anticholinesterase inhibitors on cardiac health of elderly
- Patients with Myeloid leukemia and Lymphoid leukemia



Update on UAMS Data Trust

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■ Where are we going?

- Incorporate all five AHEC EHRs
- Biweekly data update
- New version of i2b2 (key new functionality includes ability to get counts by year)
- Strengthening processes around governance
- Approval for honest broker system

By end
of 2012



Update on UAMS Data Trust

William Hogan, MD, Assoc. Prof. and Chief, Division of Biomedical Informatics

■ Acknowledgements

- Irfan Chaudhry and the Data Trust team
- Kyla Alexander and Honest Broker System team
- Translational Research Institute and award UL1TR000039 from NCATS



Grants Management Program Alumni

Cindy Martin, Chair GMPA

- **Grants Management Program Alumni**
 - Who?
 - What?
 - When?
 - Where?
 - Why?



Grants Management Program

Alumni Cindy Martin, Chair GMPA

- **Who is the Grants Management Program Alumni (GMPA)?**
 - We are a professional organization whose members consist of the graduates of a Grants Management Certification Program.



Grants Management Program Alumni

Cindy Martin, Chair GMPA

- **What does GMPA do?**

- **Mission**

- The mission of the UAMS Grants Management Program Alumni is to provide support to grants managers at UAMS in order to strengthen their abilities to successfully and efficiently manage grants and grant-related activities.



Grants Management Program

Alumni Cindy Martin, Chair GMPA

- **When should someone join the program?**
 - Directly administers a grant
 - Provide administrative support for a person who has grant funding (e.g., Ie-HR, purchasing, etc.)
 - Manages a departmental/division budget that includes grant funding
 - Is interested in why there are so many rules regarding grant funding and would like to know if the rules are real



Grants Management Program Alumni

Cindy Martin, Chair GMPA

- **Where do I go to sign up?**

<http://intranet.uams.edu/finance/grants/Alumni/alumni.asp>



Grants Management Program Alumni

Cindy Martin, Chair GMPA

■ Why?

- Federal Rules, Regulations, and Processes
- State Rules, Regulations and Processes
- Institutional Rules, Regulations and Processes
- The more we understand, the more we can assist our investigators in navigating the system



Cancer Institute Update

Shirley Gray, Administrator

- External Advisory Board meeting
 - Are we meeting the criteria for the Six Essential Characteristics required of NCI-designated centers?
 - Structure of research programs
 - Appropriate criteria for membership
 - Appropriate individuals in leadership roles?
 - What should our top priorities be for the next six months?



Cancer Institute Update

Shirley Gray, Administrator

- Report from External Advisory Board
 - Strong institutional commitment
 - Outstanding facilities
 - Strong cancer focus; explore other relevant NIH-funded areas at UAMS to expand collaborations
 - Strong collaboration and coordination within research programs; limited inter-programmatic interactions
 - Strong background and authority of center director



Cancer Institute Update

Shirley Gray, Administrator

- Recommended priorities
 - Recruit more physician scientists in order to address gap of basic to clinical translation
 - MIRT: Continue to integrate into institute structure; develop inter-programmatic collaborations
 - Experimental Therapeutics: Integrate more clinical effort; include physician leadership
 - Cancer control program: focus efforts more clearly on issues that led to Arkansas' high cancer burden



Next RESIN

Next RESIN

- **October 2, 2012 @ 12:00p.m.**
- **Location - Walton Auditorium**, Winthrop P. Rockefeller Cancer Institute, 10th floor
- All RESIN presentations archived on the UAMS Research website
 - http://www.uams.edu/research/RESIN_Achive.asp