

# Spring SUP Newsletter

April 2016

## Message from the President

Dear Microscopists,

Here are a few brief notes to remind you to visit our website for more information.

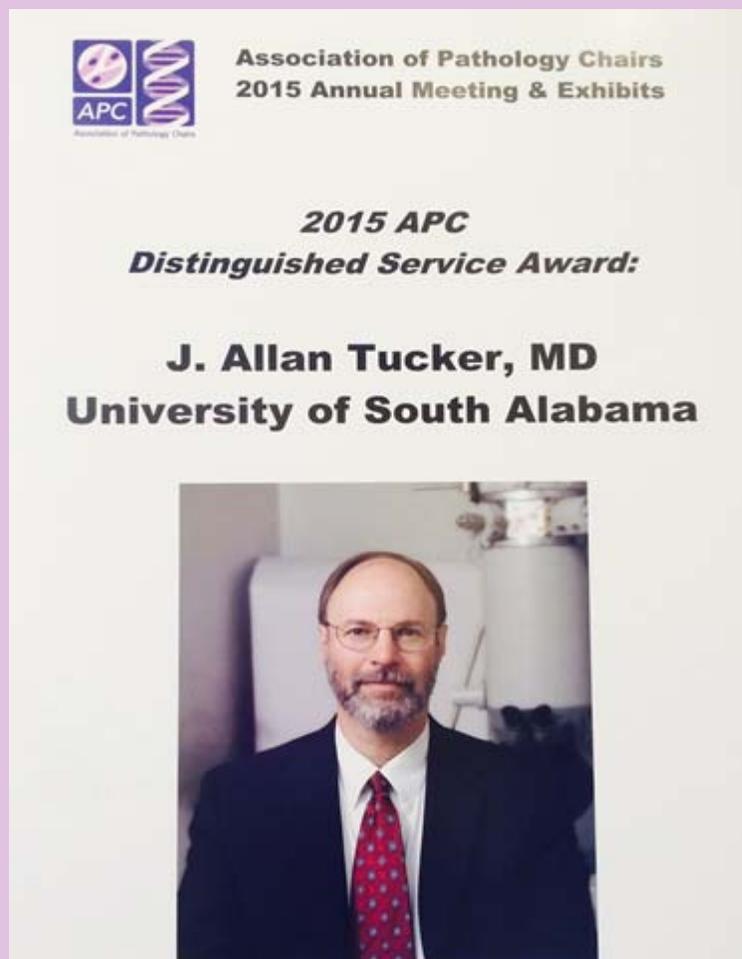
Yours sincerely,

Sara Miller, President SUP



## J. Allan Tucker Obituary

It is with very heavy heart that I write to tell you that our good friend and colleague Dr. Allan Tucker passed away last week from cancer. He was diagnosed with glioblastoma shortly after our UltraPath meeting in Asheville. Allan was an expert diagnostician, an avid teacher and supporter of trainees, and an untiring servant of the microscopy community, having been an officer of many societies, including president and treasurer of SUP. An impressive obituary, provided by Paul Taylor at the University of South Alabama, is on our website (<http://www.ultrath.org/>). He will be greatly missed.



## SUP at USCAP 2016

Our SUP companion meeting to USCAP was a big success and was well attended. It was organized by Dr. Guillermo Herrera on Small Blue Cell Tumors. Presentations were by Drs. Elizabeth Pavlisco and Victor Roggli, John Hicks, Elba Turbat-Herrera, and Cyril Fischer.

### Awards

The winner of the **Ghadially Award** at USCAP was Dr. Raquel Albero whose poster was on **“Complementary Value of Electron Microscopy and Immunohistochemistry in the Diagnosis of Non-Small Cell Lung Cancer”**

The poster displays the following content:

### Complementary Value of Electron Microscopy and Immunohistochemistry in the Diagnosis of Non-Small Cell Lung Cancer

Raquel Albero<sup>1</sup>, Lara Pijuan<sup>1</sup>, Mercedes Simón<sup>1</sup>, Nuria Jaanpere<sup>1</sup>, Inés Vázquez<sup>1</sup>, Adán Lloret<sup>1</sup>, Jessica Mena<sup>1</sup>, Ignacio Sánchez<sup>1</sup>, Sergio Romero<sup>1</sup>, Anna Llorca<sup>2,3</sup>

<sup>1</sup>Pathology Department, Hospital del Mar, Barcelona, Spain. <sup>2</sup>Pathology Department, Instituto Clínico Neumológico, Milan, Italy. <sup>3</sup>Autonomous University of Barcelona, Barcelona, Spain. <sup>4</sup>Virgen Reina University, Sevilla, Spain.

**Background**  
Lung cancer is the most common cause of cancer-related mortality around the world, in spite of improvements in diagnostic techniques and new treatments. Over the last years, the pathological classification has been widely redefined by cytogenetics and molecular data. Consequently, therapeutic targets related to mutations of EGFR, KRAS, KIF5B, and MET have been identified for patients with adenocarcinoma (ADC). Thus, it is crucial to accurately distinguish between ADC and squamous cell carcinoma (SCC) in poorly differentiated cases. Immunohistochemistry (IHC) is a very helpful technique in making the differential diagnosis. However, there is a subset of cases that remains classified as Non-Small Cell Lung Carcinoma, NOS (NSCLC-NOS) after IHC, in this setting. Electron Microscopy (EM) can be a useful tool, as it identifies the identification of very small, inter or intracellular glandular lumina, that are the clue for ADC, even when they are not identified by light microscopy analysis. Furthermore, in very little amount of tissue it is needed for EM and paraffin-embedded tissue can also be pretty informative in this differential diagnosis. These advantages are particularly relevant in this setting, as the postmortem diagnosis of these cases is usually based on small biopsies or cell-blocks obtained from cytological preparations, from which all ancillary immunohistochemical and molecular studies must be derived. The aim of this study was to determine the value of EM and IHC in the NSCLC-NOS subclassification.

**Results**  
IHC results concurred with the final diagnosis in 36 cases (75%) (Kappa=0.517) and the identification of ADC by IHC had a sensitivity of 73%, specificity of 100%, positive predictive value (PPV) of 100% and final negative predictive value (NPV) of 62.4%. EM results agreed with the final diagnosis in 30 cases (72.9%) (Kappa=0.471). For the diagnosis of ADC, IHC failed to recognize 10 cases (TTT-1 and P40 negative) and in all of them EM was conclusive, while in 20 cases with inconclusive EM, IHC gave the diagnosis. Thus, the values obtained for EM were identical to those of IHC: sensitivity 73%, specificity 100%, PPV 100% and NPV 62.4%. Combining results of IHC and EM, 47 cases (97.9%) were coincident with the final diagnosis (Kappa=0.943). (See Table). Illustrated examples of the combined use of IHC and EM are shown (Figures 1-3).

Table	Kappa	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
IHC	0.517	73	100	100	62.4
EM	0.471	73	100	100	62.4
IHC + EM	0.943	100	100	100	100

**Conclusion**  
The results of this retrospective study suggest that EM can provide useful information, in order to subtype NSCLC-NOS, mainly in recognizing poorly differentiated ADC, and that it has a particularly helpful role in cases in which IHC shows inconclusive results. Even in great samples retrieved from paraffin, EM is a cost-effective tool, very sensitive and extremely specific, that may have an indirect impact on prognostic and therapeutic decisions in this kind of patients.

Nothing to disclose - The authors of this abstract have indicated that they have no conflicts of interest that relate to the content of this abstract.

The winner of the **Tucker Award** at USCAP was Dr. Guanjun Xia whose poster was on **Drug Induced Phospholipidosis in Kidney: Ultrastructural Features**. Below is a very thoughtful and appreciative letter from him. It shows how important and meaningful these recognitions are to our young colleagues.

**Subject:** Thanks a lot from Guanjun! RE: J. Allan Tucker Pathologist-in-Training Awardee for USCAP-SUP 2016:

Dear Dr. Hicks,

How are you?

This is Guanjun (GJ) Xia from Drexel. Very nice to meet you on the USCAP meeting, I was so lucky to have the poster right next to yours, I did learn quite a few from you, the whole morning event is still very vivid in my mind, : )

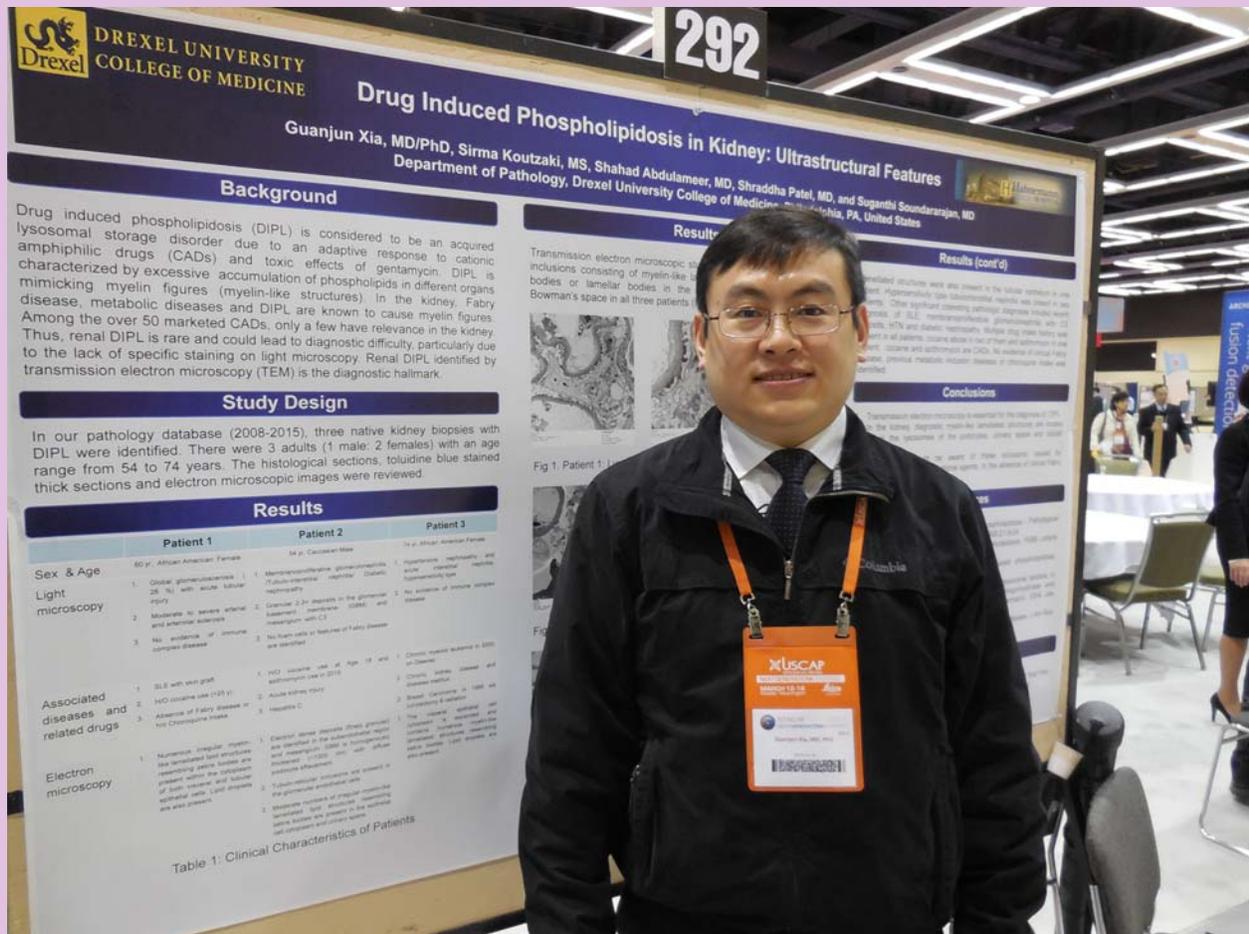
Very sorry for the late contact, because this month, I am on Surgical Path rotation, and due to the USCAP meeting, I had to spend more time to catch up after coming back, thanks for your great considerations!

It is my greatest honor to get this Pathologist-In-Training Award from USCAP-SUP, I am so thrilled, I also shared this great news with my friends and family, thank you and the committee so very much.

And I am very sorry for the sad news of Dr. Tucker, so this award is really very meaningful for me and will encourage me to pursue a great and wonderful pathologist's life like Dr. Tucker, I hope I could achieve it. Dr. Tucker will be forever and sincerely remembered and missed in my heart! May his great soul rest in peace! All the best, Thank you a lot again! Please keep in touch, very appreciate your great help! Have a nice week!

Yours Truly,

GJ



## Orenstein Newsletter Nuggets

In our last newsletter (online at <http://www.ultrapath.org/>), Dr. Jan Orenstein wrote a thoughtful article on various ultrastructural issues. Please take a moment to read it and send comments, either to me ([saram@duke.edu](mailto:saram@duke.edu)) or directly to him ([jmo@gwu.edu](mailto:jmo@gwu.edu)). If you wish to remain anonymous, so note this and send them to me; I will then remove identifying information and send them to Jan for his comments. His goal is to generate discussions and interest in various pathology topics, as well as to provide a mechanism for communication and learning.

## UltraPath XVIII

Please make your plans to join us in Lisbon July 11-15, 2016. Dr. Antonio Pedro Alves de Matos has a spectacular program planned. Please see the meeting website for details ([congress.UltrathXVIII.org](http://congress.UltrathXVIII.org)). Also, note that abstracts are due.

The Ghadially and Tucker awards (two awards) for best presentation by a trainee (undergraduate, medical, graduate, resident, fellow, or postdoctoral student) will again be offered for competition. The prizes are a plaque and \$500.

## New Officers

Nominations are being sought for President and Australian Councilor. If you wish to nominate someone or are interested in running, please contact Dr. Josep Lloreta Trull ([jlloreta@imas.imim.es](mailto:jlloreta@imas.imim.es)).