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## EDUCATION SESSIONS

An Efficient Clinical Pathology TEM Workflow From Specimen Acquisition Through Automated Preparation And Electron Microscopy

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Tuesday, Sep 12, 2023 3:30 PM - 4:30 PM EDT

Session Code: VP-21

CEU: 1.00

## Description

This Workshop will present how the ARUP Laboratories, one of the USA's largest clinical pathology reference labs, efficiently handles over 25 patient clinical renal biopsy Electron Microscopy (EM) specimens every week, for a typical total of 1300 specimens/year. The ARUP EM lab also annually processes a variable number of skeletal and heart muscle biopsies. ARUP is a CAP, ISO-15189 and CLIA-certified diagnostic lab with more than 35 years of experience. Every morning about 4-15 patient renal 18G needle biopsies are received in bar-code labeled vials containing cacodylate buffered glutaraldehyde-paraformaldehyde fixative, after overnight fixation. Each needle biopsy is then cut into 2-3mm long segments. Up to 8 segments are then loaded into a single mPrep/s specimen capsule (s-capsule, Microscopy Innovations) and capped in place with a second barcode labeled s-capsule to identify the patient. Up to 16 capped capsules, for up to 16 patients, are then loaded on an ASP-1000 (Automated Specimen Processor, Microscopy Innovations) instrument for EM processing. The ASP follows our 2-hour long programed EM prep protocol, for rinses, OsO<sub>4</sub>, uranyl acetate, ethanal dehydration, 100% acetone, and ending in 100% epoxy infiltration, using reagents we load into microwell plates. Our ASP protocol is programmed to pause mid-protocol to alert the lab for the timely addition of acetone and epoxy resin, but otherwise the ASP operates without intervention. At the conclusion of the 2 hour protocol, the ASP provides a "processing completed" alert, and the patient labeled s-capsules containing 100% resin infiltrated biopsy specimens are then removed from the ASP. Each patient's labeled capsule is then placed in a separate petri dish containing a flat embedding mold that has been prepared with the number of epoxy filled and labeled embedding wells that is equal to the number of biopsy segments for this patient. The biopsy segments are then removed from the patient's s-capsule and orientated in a labeled resin-filled mold. Blocks are then polymerized overnight at 70 Celsius.

General Anatomic Pathology

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## Speaker(s)



Steven Goodman

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