



Animal Model Workshop

RCC PDX Models at MD Anderson Cancer Center: A Legacy Story

Niki Zacharias Millward

Associate Professor
Department of Urology, MDACC

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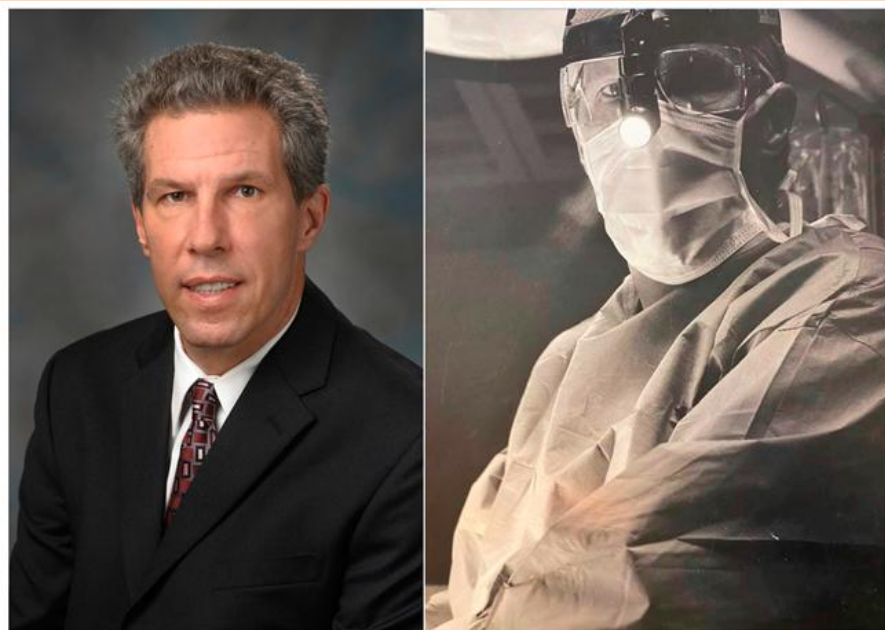
Session 6: PDX Models



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Early Adopter of PDX Models



Dr. Christopher Wood



Great Clinical Team



Dr. Jose Karam



Dr. Surena Matin



Dr. Brittney Cotta



Dr. Pavlos Msouel

Marisa Lozano, Assoc Dir, Res Planning & Development
Shanna M Pretzsch, Supervisor of Clinical Studies
Dedicated research staff for consenting, tissue bank for
obtaining fresh tissue.



Great Lab Team and Fellows



Dr. Daniel Shapiro



Zacharias Millward/MDACC

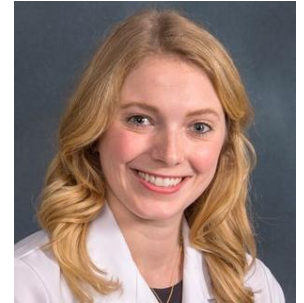
Dr, Manuel. Ozambela



Dr. Alberto Pieretti



Dr. Elizabeth Ellis



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MDACC RCC Models

Model Name	RCC Subtype	Treatment	Pathological Tumor Stage	Reference
M-80	Clear Cell (10% Sarcomatoid)	Post	T3aN1M1	1
M-48	Papillary (type 1)	Naïve	T3aN1M0	1
M-55	Papillary (type 2)	Naïve	T3aN0M0	1
M-62	Clear Cell	Naïve	T3N0M1	1
RMC2X	Renal Medullary Carcinoma	Naïve	T3aN1	2
RMC32X	Renal Medullary Carcinoma	Post	T3aN1	2,3
FH-RCC1X	FH-deficient RCC	Post	T3aN1M1	3
M-90	Clear Cell (10% Sarcomatoid)	Post	T3aN1	
TRCC1X	Translocation Xp11.2	Post	T4N1M1	
CHRC1X	Sarcomatoid Chromophobe (PDX)	Naïve	T3aNXM0	
RMC39X	Renal Medullary Carcinoma	Post	T1aNx	
M-93	Clear Cell (10% Sarcomatoid)	Post	T3aN1M1	
M-11	Clear Cell	Naïve	T3aN0M0	

1. Karam J.A.; ...Wood C.G. *Eur Urol* **2011**, 59(4), 619-28.
2. Shapiro D.D.; Zacharias N.M.; ... Karam, J.A.; Msaouel, P. *Clin Transl Med* **2023**, 13(5), e1267.
3. Zacharias N.M.; Ozambela M.; ...Pieretti A.;.. Karam, J.A.; Msaouel, P. *Mol Cancer Ther* **2025**, July

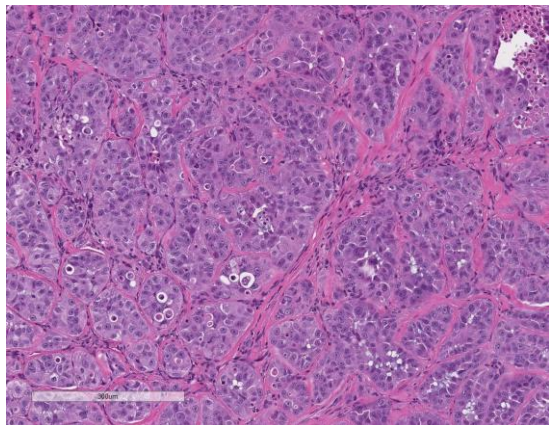
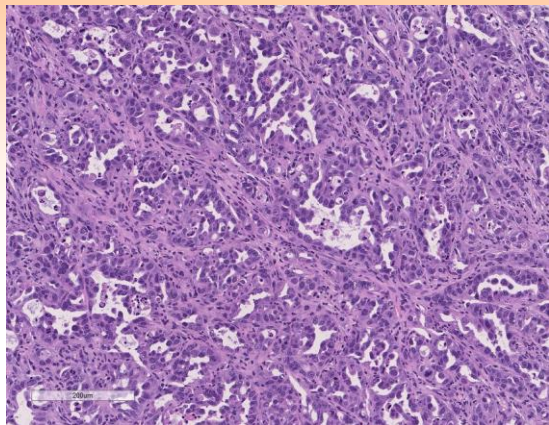
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Models



RMC

- **RMC32X**, 28 yr, Male, pT3aN1M1, paclitaxel + cisplatin, then carboplatin prior to resection

FH-deficient RCC

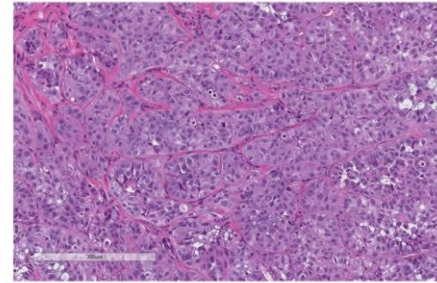
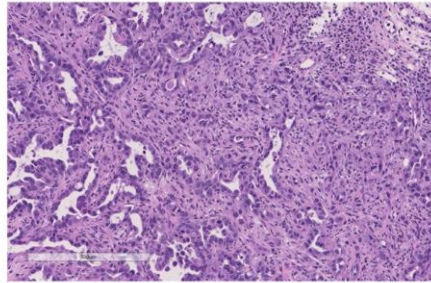
- **FH-RCC1X**, 24 yr, Female, pT3aN1M1, Germline mutation in FH, erlotinib + bevacizumab prior to resection



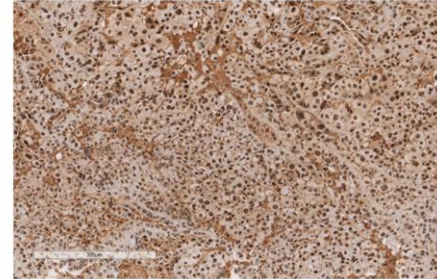
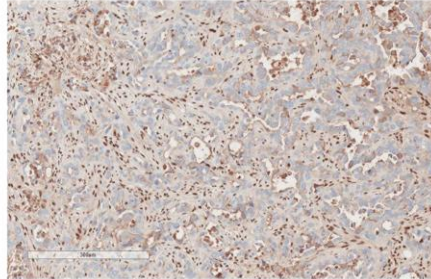
RMC32X

FH-RCC1X

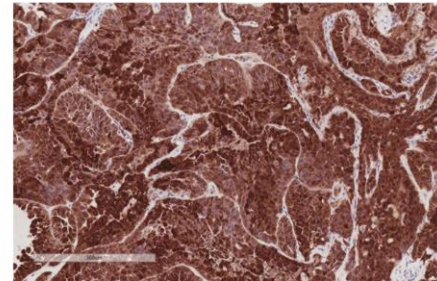
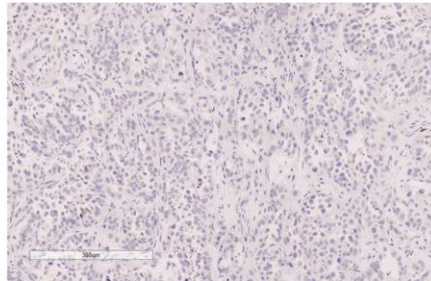
H & E



INI-1
SMARCB1



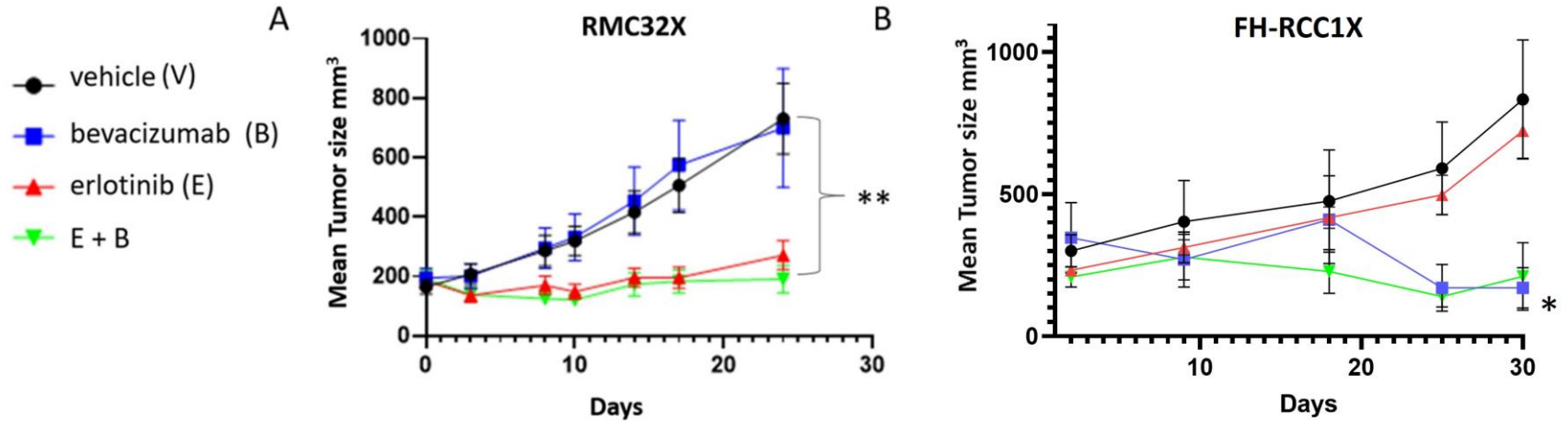
2-SC
S-2-succino-cysteine



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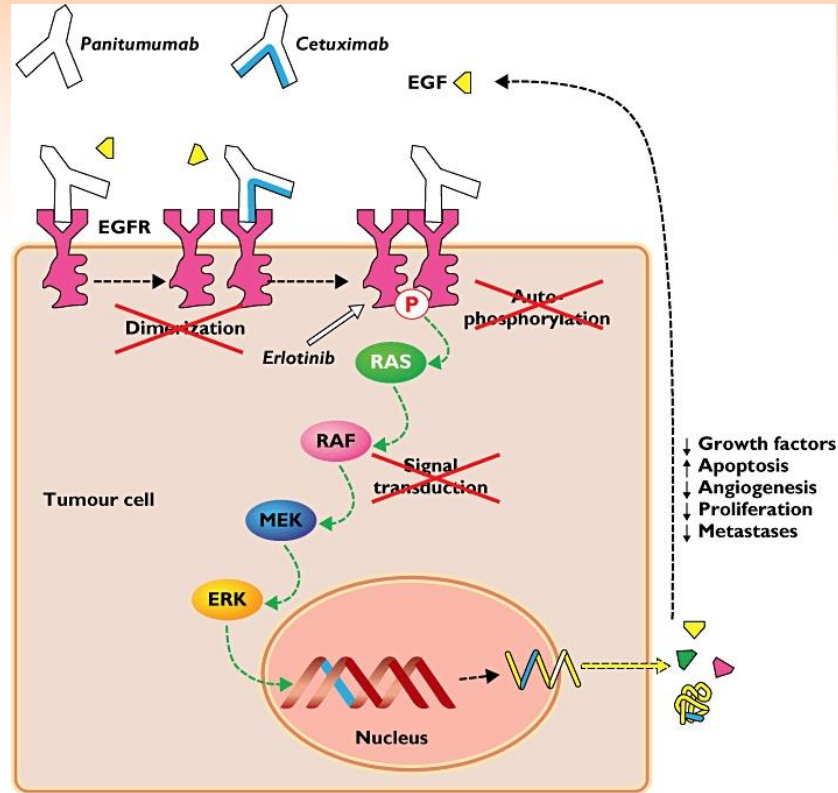
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Models



** , P < 0.0001; * P < 0.02

Panitumumab



Conclusions

- PDX Models are great tools for determining fundamental differences between RCC subtypes.
- PDX Models are great tools for testing subtype specific therapies.



Funding

- Independent Research Grant; University of Texas MD Anderson Agency; PI. Niki Millward
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- Chromophobe RCC Focus Award; Kidney Cancer Association; PI. Niki Millward
- Chromophobe RCC Focus Award; Kidney Cancer Association; PI. Elizabeth Ellis

Our patients and their families!

