

# Ryan Matthew Kemper, B.A.

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## EDUCATION

### Bachelor of Arts in Chemistry and Biology

August 2018 - May 2022

*The University of North Carolina at Chapel Hill*

Graduated: May 2022

Graduated with Highest Distinction

Cumulative GPA: 3.80 Science GPA: 3.77

## PROFESSIONAL AND RESEARCH EXPERIENCE

### Research Specialist

May 2022 – Present

*Eshelman School of Pharmacy, The University of North Carolina at Chapel Hill*

The Daniel Crona Laboratory

- Managed inventory and ordering of laboratory supplies.
- Coordinated upkeep, certification, and maintenance of laboratory equipment.
- Maintained established laboratory safety standards according to Environment, Health, and Safety guidelines.
- Established relationships with sales and product representatives to aid in bringing new technology to the laboratory.
- Trained new lab employees and students on procedures and standard practices in this group.
- Drafted and finalized standard operating procedures for common laboratory techniques.
- Maintained “Outstanding” laboratory safety assessment grade in annual inspection by Environment, Health, and Safety.

### Interim Laboratory Manager

November 2021 - May 2022

*Eshelman School of Pharmacy, The University of North Carolina at Chapel Hill*

The Daniel Crona Laboratory

### Research Assistant

November 2018 - Present

*Eshelman School of Pharmacy, The University of North Carolina at Chapel Hill*

Primary Research Advisor: Daniel Crona, Pharm. D., Ph.D., CPP

### Ongoing Projects:

#### Discovery of a first-in-class MPP8 antagonist to prevent and reverse lineage plasticity in prostate and bladder cancer

*Principal Investigator: Daniel Crona, Pharm.D., Ph.D., CPP*

- Performed experiments to determine the IC<sub>50</sub> dose of provided compounds in selected prostate cancer cell lines.
- Used shRNA-mediated transfection to knock-down MPP8 in selected prostate cancer cell lines.
- Performed Western Blot and RT-PCR experiments for both compound and shRNA in prostate and bladder cancer.
- Generated preliminary data for three grant submissions, all of which were funded.

#### Evaluation of the effects of birabresib (OTX-015) on ARID1A-mutant bladder cancer

*Principal Investigator: Daniel Crona, Pharm.D., Ph.D., CPP*

- Performed experiments to determine the IC<sub>50</sub> dose of birabresib in selected ARID1A proficient/deficient bladder cancer cell lines.
- Used siRNA-mediated transfection to knock-down downstream effectors of ARID1A in proficient/deficient cell lines.
- Performed Western Blot and RT-PCR experiments to evaluate the effect of birabresib and siRNA on selected gene and protein expression.
- Generated and prepared samples for RNASeq library generation and lentiviral-mediated pooled CRISPR screen.
- Analyzed cell cycle inhibition with birabresib using flow cytometry.
- Generated preliminary data for grant submission and first-author abstract submission to AACR National Meeting and two internal UNC symposia.

#### Evaluation of novel dCas9 technology in gene modulation central to prostate cancer pathogenesis

*Principal Investigators: Daniel Crona, Pharm.D., Ph.D., CPP. Nathaniel Hathaway, Ph.D.*

- Learned proper lentiviral safety as well as production, collection, and infection techniques.
- Generated and maintained virally infected cell lines to aid experimental directives.
- Assessed knockdown of androgen receptor expression after gRNA transfection via RT-qPCR.

## CERTIFICATIONS

<b>Dangerous Goods Shipping</b> UNC Environment, Health, and Safety	March 2022 - Present
<b>Analytical X-Ray Operator</b> UNC Environment, Health, and Safety	March 2022 - Present
<b>HIPAA Compliant</b> UNC School of Medicine	December 2018 - Present
<b>CITI Good Clinical Practice</b> CITI Program	January 2019 - Present
<b>Human Subjects Research</b> CITI Program	January 2019 - Present
<b>Biological Safety Level 2 Compliant</b> UNC Environment, Health, and Safety	June 2017 - Present
<b>Microsoft Office 2013 Master Certification</b> Microsoft Corporation	January 2017

## PROFESSIONAL AFFILIATIONS

<b>American Association for Cancer Research (AACR)</b> <ul style="list-style-type: none"><li>• Student Member</li></ul>	February 2022 - Present
<b>Student National Pharmaceutical Association (SNPhA)</b> <ul style="list-style-type: none"><li>• Student Member</li></ul>	September 2019 - September 2020

## HONORS AND AWARDS

<b>Highest Distinction</b> <i>University of North Carolina at Chapel Hill</i>	May 2022
<b>Phi Beta Kappa Inductee</b> <i>University of North Carolina at Chapel Hill Alpha Chapter</i>	October 2021
<b>Dean's List</b> <i>University of North Carolina at Chapel Hill</i>	Fall 2018, Fall 2019, Fall 2021
<b>Coach Bob Pittard Scholarship</b> <i>WakeEd Partnership</i> <ul style="list-style-type: none"><li>• Competitive renewal 2019-2022</li><li>• First-ever and only four-year recipient of the award.</li></ul>	May 2018 – May 2022
<b>Green Hope Athletic Booster Club Scholarship</b> <i>Green Hope Athletic Booster Club</i>	May 2018 – May 2019
<b>Assured Admission Candidate: Excel@Carolina</b> <i>University of North Carolina at Chapel Hill</i>	May 2018 – May 2022

## PRESENTATIONS AND PUBLICATIONS

### **Publications**

\*Indicates authors contributed equally to work

1. Zhu J\*, Wu S\*, Beechinor R; **Kemper R**; Bukkems L, Mathot R, Cnossen M; Gonzalez D, Chen S-L, Key N, Crona DJ. Pharmacokinetics of Perioperative FVIII in Patients with Hemophilia A: An External Evaluation and Development of a Population Pharmacokinetic Model for UNCMC Patients. *Haemophilia*. 2021 Nov; 27(6): 974-983. E-Pub 2021 Aug 18.
2. Szeto AH, Bucci T, Deal AM, Zhu A, Ahmad M, Cass A, Sketch MR, **Kemper R**, Zeidner J, Foster M, Muluneh B, Crona DJ. Response to tyrosine kinase inhibitors in real-world patients with chronic myeloid leukemia. *Annals of Pharmacotherapy*. E-Pub 2021 Sep 18.
3. Dennison T, Heiling H, Deal AM, Brunk K, **Kemper R**, Crona DJ, Faso A. Tolerability of palbociclib in younger and older patients with advanced breast cancer. *Journal of Oncology Pharmacy Practice*. E-Pub 2021 Nov 09.

### **Abstracts and Presentations** (presenting author underlined)

\*Indicates authors contributed equally to work

1. Dunlap T, Weiner D, **Kemper RM**, Devane SC, Ptachinski J, Crona, DJ. Busulfan population pharmacokinetics improves exposure prediction in adult allogeneic hematopoietic stem cell transplant. Abstract to be presented as a poster at the 2022 ACCP Virtual Poster Symposium, May 24-25, 2022.

2. **Kemper RM**, Mewada H, Damrauer, JS, Hardy PB, Frye SV, Pearce KH, Raab J, Kim WY, Crona DJ. *ARIDIA* mutated bladder cancer cells are sensitized to BET protein inhibition with OTX-015. Abstract presented as a poster at the 23<sup>rd</sup> Annual Celebration of Undergraduate Research in Chapel Hill, North Carolina, April 2022.
3. **Robinson JE**, **Kemper RM**, BATTERY P, James LI, Crona DJ. Exploring the role of MPP8 in epithelial to mesenchymal transition mechanisms: establishing preliminary conditions and resources for future investigations. Presented as a poster at the Research and Scholarship in Pharmacy (RASP) Student Poster Session at the UNC Eshelman School of Pharmacy in Chapel Hill, North Carolina, April 2022.
4. **Kemper RM**, Mewada H, Damrauer, JS, Hardy PB, Frye SV, Pearce KH, Raab J, Kim WY, Crona DJ. *ARIDIA* mutated bladder cancer cells are sensitized to BET protein inhibition with OTX-015. Abstract presented as a poster at the AACR Annual Meeting in New Orleans, Louisiana, April 2022.
5. **DeVane SC**, Zhu J, **Kemper RM**, Dunlap T, Crona DJ, Weiner DL, Ptachinski J, Shaw JR, Grgic T, Trepte M, Nguyen V, Armistead PM, Riches M. Development of a Population Pharmacokinetic Model to Optimize Tacrolimus Dosing in Adult Recipients of Allogeneic Hematopoietic Stem Cell Transplant. Abstract presented as a poster at HOPA Annual Conference, Boston, MA, April 2022.
6. **Kemper RM**, Mewada H, Damrauer, JS, Hardy PB, Frye SV, Pearce KH, Raab J, Kim WY, Crona DJ. *ARIDIA* mutated bladder cancer cells are sensitized to BET protein inhibition with OTX-015. Abstract presented as a poster at the Carolina Chromatin and Epigenetics Symposium, March 2022.
7. **Dennison T**, Heiling H, Deal AM, Brunk K, **Kemper R**, Crona DJ, Faso A. Risk Factors Associated with Palbociclib-Induced Neutropenia, Dose Reductions, and Tolerability in Women with Advanced Breast Cancer. In preparation for presentation at the 2021 HOPA Virtual Conference; April 14, 2021.
8. **Zhu J**, Wu S, Beechinor R, **Kemper R**, Bukkems L, Mathot R, Cnossen M, Gonzalez D, Chen S, Key N, Crona DJ. External Evaluation and Development of a Simplified Perioperative FVIII Population Pharmacokinetic Model for Adult Hemophilia A Patients Undergoing Surgeries at UNC Medical Center. Presented at the 2020 Virtual ACCP Meeting; September 2020.
9. **Werner T**, **Kemper R**, Szeto AH, Cipriani A, Crona DJ. Impact of Type 2 Diabetes Mellitus on Renal Cell Carcinoma Prognosis. Presented at the 2020 ACCP Meeting (virtual), October 19-30, 2020.
10. **Zhu J**, Wu S, Beechinor R, **Kemper R**, Bukkems L, Mathot R, Cnossen M, Gonzalez D, Chen S, Key N, Crona DJ. External evaluation of a perioperative FVIII population pharmacokinetic model for hemophilia A patients. Presented at the 10th Symposium on Hemostasis; April 2020 (virtual).

#### **Publications in Preparation, Submitted, or Revision:**

*\*Indicates authors contributed equally to work*

1. Crona DJ\*, **Kemper RM**, Messmore A, Drier A, Zhu J, Bell EF, Sketch MR, Boland AM, Garrett A, Mitchell KH, Tomlins SA, Wang L, Dees EC, Godley PA, Dunn MW, Rose TL, Basch E, Milowsky MI, Whang YE\*. Next generation sequencing of primary prostate cancer tumors reveals actionable opportunities for clinical management. In preparation for submission to *Urol. Oncol.*
2. Patel S, **Kemper RM**, Saha MK, Jain K, Crona DJ, Derebail VK. Apixaban use for prevention and treatment of venous thromboembolism patients with nephrotic syndrome: a systematic, retrospective study. In preparation for submission to *KI Reports*.
3. Werner T\*, **Kemper RM\***, Szeto AH, Cipriani A, Crona DJ. Impact of Type 2 Diabetes Mellitus on Renal Cell Carcinoma Prognosis. In revision for later publication.
4. **Kemper RM**, Klein AL, Hardy PB, Feng W, Robinson JE, Mewada H, Torrice CD, Maffuid KA, James LI, Kim WY, Frye SV, Gupta GP, Pearce KH, Crona DJ. Evaluation of the effects of combined chemical inhibition of PARP and BET proteins in preclinical models of urothelial bladder cancer. In preparation for Summer 2022 submission.
5. Dunlap T, Weiner DL, **Kemper RM**, Zhu J, Symonds A, DeVane SC, Miller JA, Riches M, Shaw JR, Armistead PM, Ptachinski J, Crona DJ. Model-guided dosing of busulfan in patients receiving allogeneic hematopoietic stem cell transplant. In preparation for Spring 2022 submission to *Clinical Pharmacology and Therapeutics*.
6. **Kemper RM\***, Mewada H\*, Suzuki O, Bodwell BP, Frick AD, Zhu J, Foyt J, Etheridge A, Healy E, Trask OJ, Thomas R, Innocenti F, Wiltshire T,\*\* Crona DJ.\*\* A high-throughput cellular genetics approach identifies *Rdx* as a candidate gene associated with sorafenib-mediated apoptosis signaling and cytotoxicity. In preparation for Summer 2022 submission to *Cancer Research*.
7. **Kemper RM\***, Day J\*, Muluneh B, Crona DJ, Reeves B. Direct Oral Anticoagulants as Secondary Prophylaxis in Classical Myeloproliferative Neoplasms: A Retrospective Review. In preparation for Summer 2022 submission.

## **TEACHING RECORD: RESEARCH**

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### **Professional:**

*Doctor of Pharmacy (Pharm.D.)*

Sara Jubas, B.S.

August 2021 – December 2021

Jacob Robinson, B.S., M.S.

May 2021 – May 2022

- “Epithelial to Mesenchymal Transition Mechanisms in Metastatic Prostate Cancer: The Role of MPP8”

### **Ph.D. Research Rotation**

*Doctor of Philosophy (Ph.D.)*

Stephany Gonzalez Tineo, B.A.Sc

Anticipated August 2022

Abigail Klein, B.S.

January 2022 – May 2022

- “Evaluation of the effects of combined chemical inhibition of PARP and BET proteins in preclinical models of urothelial bladder cancer”

### **Undergraduate:**

*Bachelor of Arts and Sciences (B.A., B.S. Candidates)*

Cameron Grant, B.S. Candidate

Anticipated August 2022

Bhavika Chirumamilla, B.S. Candidate

Anticipated August 2022

Dominic Tecza, B.S., B.A.

August 2021 – May 2022

- “Impact of Type 2 Diabetes Mellitus on Renal Cell Carcinoma Prognosis”

Heemaja Mewada, B.S., B.A.

November 2020 – May 2022

- “Evaluation of the effects of combined chemical inhibition of PARP and BET proteins in preclinical models of urothelial bladder cancer”
- “A high-throughput cellular genetics approach identifies *Rdx* as a candidate gene associated with sorafenib-mediated apoptosis signaling and cytotoxicity”

### **Postdoctoral Researchers**

*Postdoctoral Scholars and Professional Research Staff*

Surya Tripathi, Ph.D.

Anticipated July 2022

Manfred Meng, Ph.D.

March 2022 – Present

- “Evaluation of the effects of combined chemical inhibition of PARP and BET proteins in preclinical models of urothelial bladder cancer”

### **High School Students**

Isaac Lund

Anticipated June 2022

## **TEACHING EXPERIENCE: DIDACTIC**

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### **Supplemental Instructor**

August 2021- May 2022

*The University of North Carolina at Chapel Hill*

Microbiology 251: Introductory Medical Microbiology

### **Peer Mentor**

January 2020 – May 2021

*The University of North Carolina at Chapel Hill*

Microbiology 251: Introductory Medical Microbiology

## **VOLUNTEER AND LEADERSHIP EXPERIENCE**

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### **NOBCCHE Mentor**

September 2021 – May 2022

*The University of North Carolina at Chapel Hill*

- Mentored a first-year student through class registration, research involvement, and overall adjustment to life at UNC during his first semester.

### **UNC Newman Catholic Student Center**

*Large Group Music Director*

August 2020 – May 2021

- Managed music selection, creative decisions, rehearsal, and live sound for weekly events.
- Collaborated with other student leaders for programmatic decision making.

*Large Group Band Member*

August 2019 – December 2021

- Attended weekly rehearsals and events.
- Managed live sound.

## **OTHER WORK EXPERIENCE**

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### **Music Director, Youth Music Ministry**

January 2022 – Present

St. Mary Magdalene Catholic Church, Apex, NC.

- Managed music selection and coordination with parish officials for weekly programming decisions for Mass.
- Coordinated the audition and involvement of new members interested in joining the group.

### **Young Innovators Program Intern**

June 2017 - August 2017

Eshelman School of Pharmacy, The University of North Carolina at Chapel Hill

*Primary Research Mentor: Dhiren Thakker, Ph.D.*

- One of 24 local high school students selected to participate in a summer research immersion sponsored by the Eshelman School of Pharmacy.
- Attended various seminars and facility tours to obtain a working knowledge of the field of pharmaceutical research, as well as insight into the profession of pharmacy.
- Learned basic science techniques through observational learning in a laboratory setting.

Determining if MATE1 Transporter in Endometrial Cancer Cells is a Factor in the Efficacy of Cancer Treatments in Conjunction with the Drug Metformin

*Principal Investigators: Dhiren Thakker, Ph.D., Aruljothi Muralidharan, M.S., Ph.D.*

**References available upon request.**