



**OPEN SESSION**

---

1. Convene Meeting  
*David L. Boliek Jr., Chair*
2. Roll Call  
*Malcolm Turner, Secretary*
3. Election of Officer  
*David L. Boliek Jr., Chair*
4. Statement of Ethics  
*David L. Boliek Jr., Chair*
5. Consent Agenda
  - Approval of November 3-4, 2021 Minutes (Regular Meeting) Attachment A
  - Approval of December 9, 2021 Minutes (Special Meeting) Attachment B
  - Approval of December 14, 2021 Minutes (Emergency Meeting) Attachment C
  - Approval of Revised 2022 BOT Meeting Dates Attachment D
6. Board of Trustees Chair's Remarks  
*David L. Boliek Jr., Chair*
7. Student Body President's Remarks  
*Lamar Richards, Student Body President*
8. Chancellor's Remarks  
*Dr. Kevin Guskiewicz, Chancellor*
9. Presentation on Research Enterprise at UNC  
*Terry Magnuson, Vice Chancellor for Research and Weatherspoon, Distinguished Professor of Genetics*  
*Lindsey James, Assistant Professor, School of Pharmacy*  
*Gerald Meyer, Director of Center for Hybrid Approaches in Solar Energy to Liquid Fuels, Professor, Department of Chemistry*
10. \*Report of the Audit, Compliance, and Risk Management Committee  
*Marty Kotis, Committee Chair*
11. \*Report of the Strategic Initiatives Committee  
*Perrin Jones, Committee Chair*
12. \*Report of the Finance, Infrastructure & Audit Committee  
*John Preyer, Committee Chair*
13. \*Report of the University Affairs Committee  
*Rob Bryan, Committee Chair*

14. \*Report of the External Relations Committee  
*Allie Ray McCullen, Committee Chair*

**CLOSED SESSION**

---

15. \*Report of the External Relations Committee  
*Allie Ray McCullen, Committee Chair*

16. \*Report of the University Affairs Committee  
*Rob Bryan, Committee Chair*

17. Legal Update  
*Charles Marshall, Vice Chancellor and General Counsel*

**OPEN SESSION**

---

18. Adjournment  
*David L. Boliek Jr., Chair*

**BOARD OF TRUSTEES MEETING**  
**The University of North Carolina at Chapel Hill**  
**November 3, 2021**

The Board of Trustees met in regular session on Wednesday November 3, 2021, at the Carolina Inn, Chancellor's Ballroom. Chair Boliek convened the meeting at 10:03am.

**NOVEMBER 3, 2021 SESSION**

Because this was a non-voting, information-only session, neither the roll call nor the statement of ethics was necessary for this session.

Vice Chancellor for Human Resources and Equal Opportunity and Compliance Becci Menghini, Interim Associate Vice Chancellor for Equal Opportunity & Compliance Elizabeth Hall, Executive Director of Strategy, Policy, and Special Project Katie Nolan held a Title IX and the University's Discrimination and Harassment Policy training session that all Trustees are required to complete.

To conclude their presentation, they entertained questions from the board.

**BOARD OF TRUSTEES MEETING**  
**The University of North Carolina at Chapel Hill**  
**November 4, 2021**

The Board of Trustees met in regular session on Wednesday November 4, 2021, at the Carolina Inn, Chancellor's Ballroom. Chair Boliek reconvened the full Board meeting at 9:09 a.m.

**NOVEMBER 4, 2021 SESSION**

Chair Boliek introduced the special guests, UNC Clef Hangers, who sang the national anthem and Carolina in my Mind for the Trustees and attendees.

**ROLL CALL**

Secretary Malcolm Turner called the roll and the following members were present:

Teresa Artis Neal	Allie Ray McCullen
David L. Boliek, Jr., Chair	Ralph W. Meekins, Sr.
Rob Bryan	Vinay Patel
R. Gene Davis, Jr.	John P. Preyer, Vice Chair
Dr. Perrin Jones	Malcolm K. Turner, Secretary
Marty Kotis	Ramsey White

Trustee Lamar Richards was not in attendance at roll call and joined at a later time.

Secretary Turner indicated that there was a quorum.

**STATE GOVERNMENT ETHICS ACT**

Chair Boliek read the following statement:

As Chair of the Board of Trustees, it is my responsibility to remind all members of the Board their duty under the State Government Ethics Act to avoid conflicts of interest and appearances of conflict of interest as required by this Act. Each member has received the agenda and related

information for this Board of Trustees' meeting. If any Board member knows of any conflict of interest or appearance of conflict with respect to any matter coming before the Board of Trustees at this meeting, the conflict or appearance of conflict should be identified at this time.

### **CONSENT AGENDA**

The following items were presented for approval on the consent agenda:

- Approval of September 22-23, 2021 Minutes (Regular Meeting)
- Approval of October 7, 2021 Minutes (Special Meeting)
- Approval of Final Delegated Authority Resolution
- Approval of Human Resources Petition to Seek Elected Office
- Revisions to Title IX Appeal Procedures

(ATTACHMENTS A-E)

Chair Boliek added the resolution passed in the Strategic Initiatives Committee with respect to support of the military and military students to the consent agenda. Trustee Davis made a motion to approve the consent agenda. Trustee Artis Neal seconded.

### **BOARD OF TRUSTEE CHAIR'S REMARKS**

- Chair Boliek began his remarks by thanking faculty, staff, students, parents, and Board members as the Holiday season begins and the end of the Fall semester approaches.
- Chair Boliek announced the 2021 William Richardson Davie Award recipients:
  - Tim Moore
  - Roy Cooper
  - Robyn Hadley
  - Jean Allman Kitchen
  - Roy Williams
  - Wanda Williams
- The Chair congratulated the awardees and shared his appreciation for the diversity and impact of the recipients.
- The Chair concluded his remarks by calling upon Chancellor Kevin Guskiewicz for his remarks.

[A copy of these remarks is in the Office of the Assistant Secretary and at [bot.unc.edu](http://bot.unc.edu)]

### **CHANCELLOR'S REMARKS**

- Chancellor Guskiewicz began his remarks by thanking the Chair, President Richards, staff, faculty, and Board members for their service to the university.
- The Chancellor shared highlights from the Fall semester – Class of 2020 Commencement, Tar Heel Bus Tour Reunion, and welcoming the largest and most diverse first-year class.
- The Chancellor congratulated the recipients of the William Richardson Davie Award.
- The Chancellor provided AAU Meeting highlights; stating that shared challenges discussed were vaccines, AAU institutions and HBCU partnerships, assisting in moving NC A&T to r1 status through collaboration on research projects.

- The Chancellor recognized the Vaccine Requirement Executive Order from the Biden Administration for employees.
- The Chancellor addressed the Mental Health Crisis and its impact on the community; sharing the universities' commitment to investing more resources into counseling, crisis intervention, cultural support systems, and implementing more events similar to the Mental Health Summit held on November 15, 2021.

[A copy of these remarks is in the Office of the Assistant Secretary and at [bot.unc.edu](http://bot.unc.edu)]

### **STUDENT MENTAL HEALTH AT CAROLINA**

Chancellor Guskiewicz introduced Dr. Samantha Meltzer-Brody, Assad Meymandi Distinguished Professor and Chair, Director, UNC Center for Women's Mood Disorders and Amy Johnson, Vice Chancellor for Student Affairs. Dr. Meltzer-Brody and Vice Chancellor Johnson began their presentation by discussing the scope of the national mental health crisis and the impacts it has had on UNC's students and campus. Vice Chancellor Johnson shared information on localized and broad-based support that are available to students, as well as campus prevention and post-prevention plans.

To conclude their presentation, they entertained questions from the board. This presentation can be found on [bot.unc.edu](http://bot.unc.edu) and on file in the Office of the Assistant Secretary.

(ATTACHMENT F)

### **INTRODUCTION TO THE NORTH CAROLINA STUDY CENTER**

Chancellor Guskiewicz introduced Madison Perry, Executive Director of the North Carolina Study Center to present to introduce the board to the faith-based Christian study center that opened in 2015. The study center provides UNC students hospitality, education, and community between the hours of 8am-10pm.

To conclude their presentation, they entertained questions from the board. This presentation can be found on [bot.unc.edu](http://bot.unc.edu) and on file in the Office of the Assistant Secretary.

(ATTACHMENT G)

### **REPORT OF THE FINANCE, INFRASTRUCTURE, & AUDIT COMMITTEE**

Trustee Preyer presented the report from the Finance, Infrastructure, and Audit Committee. The following items were presented to the committee for action.

#### **Annual Endowment Fund Report**

Board of Governors' regulations require that the institution's Board of Trustees submit to the Board of Governors an annual report on the endowment fund. The annual report for the fiscal year ending June 30, 2021 is attached. The Endowment Board approved this report at its meeting on October 21, 2021.

(ATTACHMENT A)

### **Property Disposition by Sublease**

UNC-CH currently leases an approximately 23k sf, two story office building at 521 S. Greensboro, Carrboro, NC. UNC-CH has leased this building on behalf of the Frank Porter Graham Child Development Institute since 2005. FGP has, in the past two years, consolidated its operations and freed up the first floor of this building to be used by other entities. UNC-CH has two users on the 2<sup>nd</sup> floor (TEACCH and School of Public Health), but the first floor is mostly vacant. CHCSS has agreed to terms to sublease the 90% of the first floor for the remaining term of the lease, until 12/31/23. The sublease will generate approximately \$170,000 in savings in each of the next two years. In keeping with existing delegated authority, all leases with a value in excess of \$150,000 on an annual basis require Board of Trustees approval.

(ATTACHMENT B)

### **Property Acquisition by Lease – Renaissance Computing Institute**

UNC-CH's Renaissance Computing Institute (RENCI) leases approximately 25,000 square feet of office space from Europa Center, LLC at 100 Europa Drive, Chapel Hill. This lease expired September 31, 2021 and they currently occupy the space on a month-to-month basis. UNC-CH has negotiated to renew this lease for the same space for two years. The new rate negotiated is less than the current rate yielding a savings for the University over the next two years of about \$50,000. RENCi has occupied this space since 2016. In keeping with existing delegated authority, all leases with a value in excess of \$150,000 on an annual basis require Board of Trustees approval.

(ATTACHMENT C)

### **Tuition and Fee Proposals**

Nathan Knuffman, Vice Chancellor for Finance and Operations, presented recommendations from the Tuition and Fee Advisory Task Force. The Finance, Infrastructure, and Audit Committee approved the tuition and fee proposals as presented.

(ATTACHMENT D)

A motion came from committee to approve the annual endowment report, property disposition item, property acquisition item, and the tuition and fee proposals. Trustee Davis seconded, and they passed.

Trustee Preyer continued and shared the items for information only:

- Preliminary Design Review – Kenan Football Center Addition Design
- Carolina Research Ventures Board Appointment

A full review of the committee meeting are in the committee minutes in the Office of the Chancellor.

### **REPORT OF THE UNIVERSITY AFFAIRS COMMITTEE**

Trustee Bryan presented a review of the University Affairs Committee meeting. There were no action items for this committee in open session. Trustee Bryan shared the items presented for information:

- Faculty Update given by Mimi Chapman

- Carolina Next – Strategic Initiative #7: Globalize by Barbara Stephenson

A full review of the committee meeting are in the committee minutes in the Office of the Chancellor.

### **REPORT OF THE EXTERNAL RELATIONS COMMITTEE**

Trustee White presented a review of the External Relations Committee meeting. There were no action items for this committee in open session. Trustee White shared the items presented for information:

- The Campaign for Carolina by David Routh
- University Communications Update by Beth Keith and Tanya Moore
- Public Affairs Update by Clayton Somers

A full review of the committee meeting are in the committee minutes in the Office of the Chancellor.

### **MOTION TO CONVENE IN CLOSED SESSION**

On motion of Secretary Turner, and seconded by Trustee Bryan, the Board voted to convene in closed session pursuant to North Carolina General Statutes Section 143-318.11 (a) (1) (to prevent the disclosure of privileged information under Section 126-22 and the following); and also pursuant to Section 143-318.11 (a) (2), (3), (5), (6), (7), and (9).

### **RECONVENE MEETING IN OPEN SESSION**

Secretary Turner made a motion to return to open session. Trustee Artis Neal seconded, and it passed.

### **OPEN SESSION**

### **REPORT OF UNIVERSITY AFFAIRS COMMITTEE**

Trustee Bryan referred members to the November Human Resource items and School of Medicine Administration Compensation Plan item submitted for action. Trustee Bryan made a motion to approve the items. Trustee Kotis seconded, and it passed.

### **ADDITIONAL MOTION**

Trustee Kotis raised a motion to move that the university shall not discriminate against preferential treatment against any group or company on the basis of race, sex, color, or ethnicity. Seconded by Trustee McCullen. Trustee Kotis shared that it is a priority to ensure fairness in the application process. Secretary Turner called the vote by roll call, with the motion failing to pass on a vote of 11-2. Trustee McCullen and Kotis voted in favor of the motion and Trustees Artis Neal, Boliek, Bryan, Davis, Jones, Kotis, McCullen, Meekins, Preyer, Turner, and White voted against the motion.

### **ADJOURNMENT**

There being no further business to come before the Board, Chair Boliek called for a motion to adjourn. Trustee Davis made the motion; Chair Boliek seconded, and it passed. Chair Boliek adjourned the meeting at 1:08pm.

**BOARD OF TRUSTEES MEETING**  
**The University of North Carolina at Chapel Hill**  
**December 9, 2021**

The Board of Trustees met in a special meeting session on Thursday, December 9, 2021 via zoom teleconference hosted in 105 South Building with the Chair and Vice Chair present. Chair Boliek convened the meeting at 10:34 a.m.

**WELCOME**

Chair Boliek shared a few logistics to begin the meeting. Due to recent amendments to the North Carolina General Statutes concerning virtual meetings by public bodies, all votes will be by roll call.

**ROLL CALL**

Secretary Turner called the roll and the following members were present in person unless otherwise noted to be via zoom as provided below:

Teresa Artis Neal	Allie Ray McCullen
David L. Boliek, Jr., Chair	Ralph W. Meekins, Sr.
Rob Bryan	Vinay Patel
R. Gene Davis, Jr.	John P. Preyer, Vice Chair
Dr. Perrin Jones	Lamar Richards
Marty Kotis	Malcolm K. Turner, Secretary
	Ramsey White

Secretary Turner indicated that there was a quorum.

**PRESENTATION OF AGENDA**

Chair Boliek asked Assistant Secretary Somers to distribute the agenda to the board as the first order of business and to post it concurrently on bot.unc.edu.

**STATE GOVERNMENT ETHICS ACT**

Chair Boliek read the following statement:

As Chair of the Board of Trustees, it is my responsibility to remind all members of the Board of their duty under the State Government Ethics Act to avoid conflicts of interest and appearances of conflict of interest as required by this Act. Each member has received the agenda and related information for this Board of Trustees' meeting. If any Board member knows of any conflict of interest or appearance of conflict with respect to any matter coming before the Board of Trustees at this meeting, the conflict or appearance of conflict should be identified at this time.

**MOTION TO CONVENE IN CLOSED SESSION**

On motion of Secretary Turner, and seconded by Trustee Davis, the Board voted to convene in closed session pursuant to North Carolina General Statutes Section 143-318.11 (a) (1) (to prevent the disclosure of privileged information under Section 126-22 and the following); and also pursuant to Section 143-318.11 (a) (2), (3), (5), (6), (7), and (9). Secretary Artis Neal called the vote by roll call. The motion passed unanimously by roll call vote.

**RECONVENE MEETING IN OPEN SESSION**

A made a motion to return to open session. It was duly seconded, and the motion passed.

**OPEN SESSION**

Chair Boliek reconvened the meeting in open session Trustee Preyer made a motion to approve a personnel action the Board had approved in closed session, the approval of action item one on the agenda. Secretary Turner called the vote by roll call, with the motion passing on a vote of 12-



1. Trustees Artis Neal, Boliek, Bryan, Davis, Jones, Kotis, McCullen, Meekins, Preyer, Turner, and White voted for the motion, and Trustee Richards voted against the motion.

Chair Boliek called for a motion to approval action items two and three from the closed session agenda. Trustee Davis motioned and seconded by Trustee White. Secretary Turner called the vote by roll call, with the motion passing on a vote of 12-1. Trustees Artis Neal, Boliek, Bryan, Davis, Jones, Kotis, McCullen, Meekins, Preyer, Turner, and White voted for the motion, and Trustee Richards abstained from the vote.

### **ADJOURNMENT**

There being no further business to come before the Board, Chair Boliek called for a motion to adjourn. Trustee Davis made the motion; Trustee Patel seconded, and Secretary Turner called the vote by roll call. The motion passed unanimously by roll call vote. Vice Chair Davis adjourned the meeting at 12:17 pm.

---

Clayton Somers, Assistant Secretary

**BOARD OF TRUSTEES MEETING**  
**The University of North Carolina at Chapel Hill**  
**December 14, 2021**

The Board of Trustees met in an emergency meeting session on Thursday, December 14, 2021 via zoom teleconference in 311A South Building. Chair Boliek convened the meeting at 1:32 p.m.

**WELCOME**

Chair Boliek shared a few logistics to begin the meeting. Due to recent amendments to the North Carolina General Statutes concerning virtual meetings by public bodies, all votes will be by roll call.

**ROLL CALL**

Secretary Turner called the roll and the following members were present in person unless otherwise noted to be via zoom as provided below:

Teresa Artis Neal	Allie Ray McCullen
David L. Boliek, Jr., Chair	Ralph W. Meekins, Sr.
Rob Bryan	Vinay Patel
R. Gene Davis, Jr.	John P. Preyer, Vice Chair
Dr. Perrin Jones	Lamar Richards
Marty Kotis	Malcolm K. Turner, Secretary
	Ramsey White

Secretary Turner indicated that there was a quorum.

**PRESENTATION OF AGENDA**

Chair Boliek asked Assistant Secretary Somers to distribute the agenda to the board as the first order of business and to post it concurrently on bot.unc.edu.

**STATE GOVERNMENT ETHICS ACT**

Chair Boliek read the following statement:

As Chair of the Board of Trustees, it is my responsibility to remind all members of the Board of their duty under the State Government Ethics Act to avoid conflicts of interest and appearances of conflict of interest as required by this Act. Each member has received the agenda and related information for this Board of Trustees' meeting. If any Board member knows of any conflict of interest or appearance of conflict with respect to any matter coming before the Board of Trustees at this meeting, the conflict or appearance of conflict should be identified at this time.

**OPEN SESSION**

**CHAIR REMARKS**

Chair Boliek thanked the Board members for their commitment to the university and taking time to attend the emergency meeting. The special meeting convened on December 9, 2021 was to discuss and consider certain confidential personnel matters and returned to open session to vote on three personnel matters. The Board must abide by Open Meetings Law and the State Human Resources Act.

The Open Meetings Law requires that all votes be cast in open session or by written ballot outside of a scheduled meeting. The State Human Resources Act mandates that the Board protect confidential personnel information from disclosure.

Chair Boliek referred to the measures taken by the Board to protect against the premature disclosure of confidential personnel information when taking votes in open session. The

university releases information regarding personnel matters following the completion and the specific information related to the action is publicly available under the State Human Resources Act.

Chair Boliek referred to the December 9, 2021 roll call vote in open session to prevent the premature disclosure of confidential personnel information associated with the appointment of the Executive Vice Chancellor and Provost. Chancellor Guskiewicz requested additional time to finalize the appointment with Dr. Chris Clemens and release an announcement.

#### **EHRA NON-FACULTY HR ACTIONS**

Chair Boliek called for a motion to approve Dr. Chris Clemens as Executive Vice Chancellor and Provost effective February 1, 2022. Vice Chair Preyer made a motion to accept the recommendation, and Trustee Patel seconded. Secretary Turner called the vote by roll call, with the motion passing on a vote of 12-1. Trustees Artis Neal, Boliek, Bryan, Davis, Jones, Kotis, McCullen, Meekins, Preyer, Turner, and White voted for the motion, and Trustee Richards voted against the motion.

Chair Boliek referenced the personnel matters of current employees, Dr. Amy L. Hertel to be appointed as Executive Vice Provost and Dr. Christi Hurt as Chief of Staff to the Chancellor. Chair Boliek called for a motion to approve the proposed salaries for the Executive Vice Provost and Chief of Staff such that the Chancellor may proceed with any additional approvals needed in the completion of the appointments and to the extent necessary ratify the actions taken to approve these salaries previously on Thursday, December 9<sup>th</sup>, 2021. Vice Chair Preyer made the motion to approve the appointments and salaries and seconded by Trustee Davis. Secretary Turner called the vote by roll call, with the motion passing on a vote of 12-1. Trustees Artis Neal, Boliek, Bryan, Davis, Jones, Kotis, McCullen, Meekins, Preyer, Turner, and White voted for the motion, and Trustee Richards abstained from the vote.

#### **ADJOURNMENT**

There being no further business to come before the Board, Chair Boliek called for a motion to adjourn. Trustee Davis made the motion; Trustee Patel seconded, and Secretary Turner called the vote by roll call. The motion passed unanimously by roll call vote. Vice Chair Davis adjourned the meeting at 1:58pm.

---

Clayton Somers, Assistant Secretary

## MEMORANDUM

To: Members of the Board of Trustees

From: David Boliek, Chair

Date: January 28, 2022

RE: Revised 2022 Meeting Dates

---

Due to conflicts, the September and November 2022 BOT meetings need to be rescheduled. Please see below the updated 2022 meeting dates for approval.

March 23 – 24

May 18 –19

July 27 – 28

Revised to September 28 – 29 (Previously September 21-22)

Revised to November 9 – 10 (Previously November 16-17)



# RESEARCH at THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

# A BILLION DOLLAR ENTERPRISE

**\$1.16B**

in Annual Research Expenditures

**\$1.07B**

in New Research Awards for FY21, making it the best fiscal year for external funding

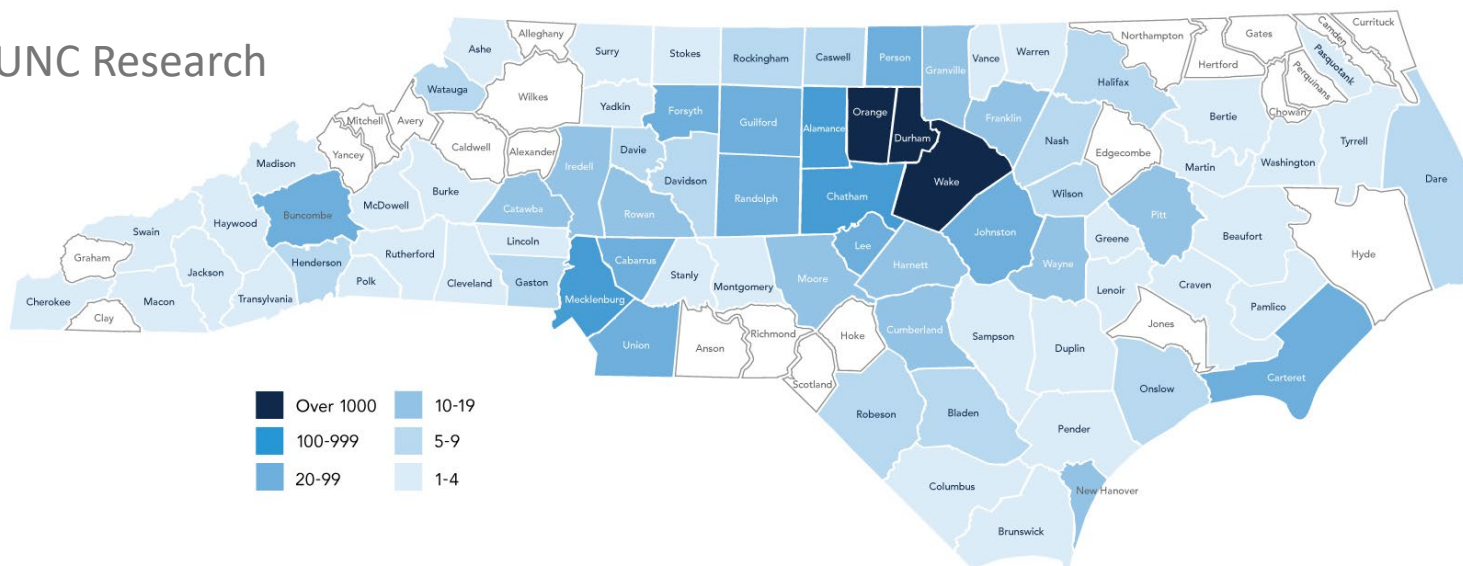
**10,420** NC employees supported by UNC Research

**\$385M** in salaries

**\$96M** in purchases

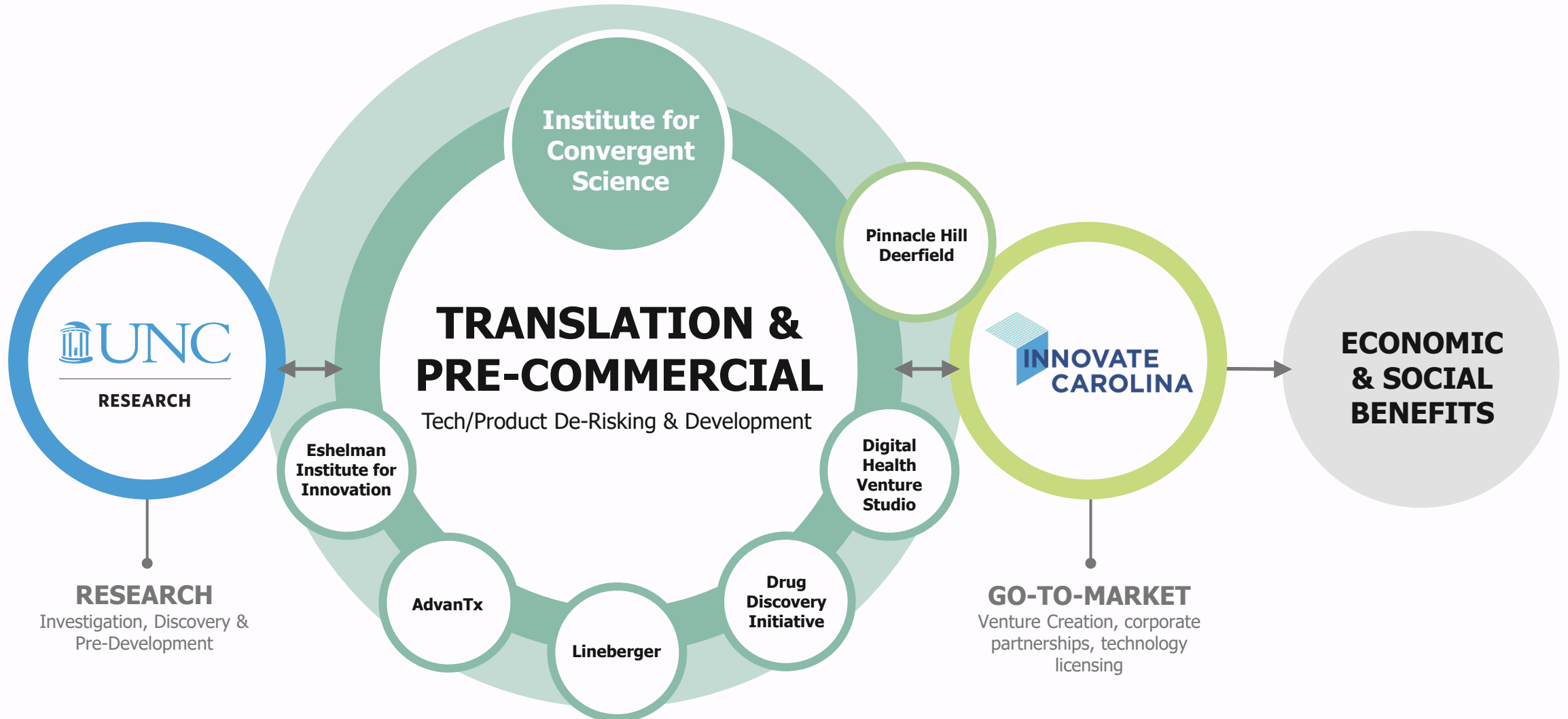
at **3,500** NC businesses

in **89** counties.



# DISCOVERY to DEVELOPMENT to MARKET

UNC'S RESEARCH, TRANSLATION, & INNOVATION PIPELINE





# THERAPEUTICS TRANSLATION & COMMERCIALIZATION



- Oncology
- Pain
- Other
- Metabolic
- Rare
- Respiratory
- Gastrointestinal
- Cardiovascular
- Opthamology
- Infectious
- Neurodegeneration
- Inflammatory
- Oral



**Pinnacle Hill**  
**Lindsey James: Multiple Myeloma**  
Assistant Professor, School of Pharmacy



# ENVIRONMENT & TECHNOLOGY

**\$100M DoE program:** Advance artificial photosynthesis for the production of fuels from sunlight.

## **UNC: Develop hybrid photoelectrodes for liquid solar fuel production (Gerald Meyer)**

- **\$40 million award** to the North Carolina based Center for Hybrid Approaches in Solar Energy to Liquid Fuels (CHASE).
- Accelerates fundamental research of the production of fuels from sunlight.

### **Center for Hybrid Approaches in Solar Energy to Liquid Fuels**



**Gerald Meyer: Director**  
Professor of Chemistry



UNC

RESEARCH



UNC  
PHARMACY

# Translational Research Towards New Cancer Therapeutics

**Lindsey I. James**

Assistant Professor, Division of Chemical Biology & Medicinal Chemistry

Director of Chemical Biology, Center for Integrative Chemical Biology & Drug Discovery

UNC Eshelman School of Pharmacy

**UNC Chapel Hill**

January 27, 2022

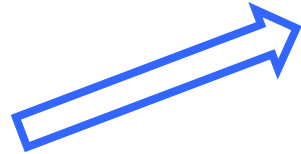


# What is the problem?

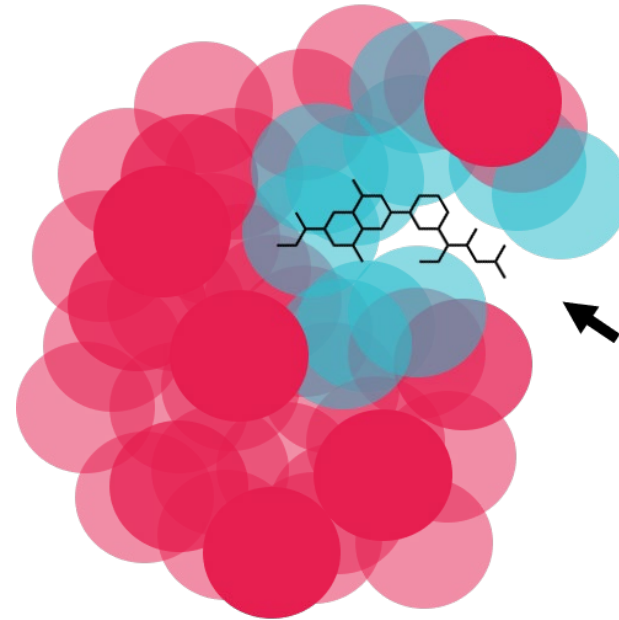
- The misregulation of regulatory proteins is an emerging hallmark of disease
- New examples of disease associated proteins are rapidly emerging

# What is our solution?

SMALL MOLECULE  
INHIBITORS



*Are these proteins 'druggable'?*



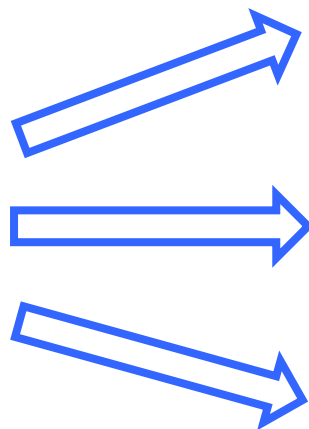


## What is the problem?

- The misregulation of regulatory proteins is an emerging hallmark of disease
- New examples of disease associated proteins are rapidly emerging

## What is our solution?

**SMALL MOLECULE  
INHIBITORS**



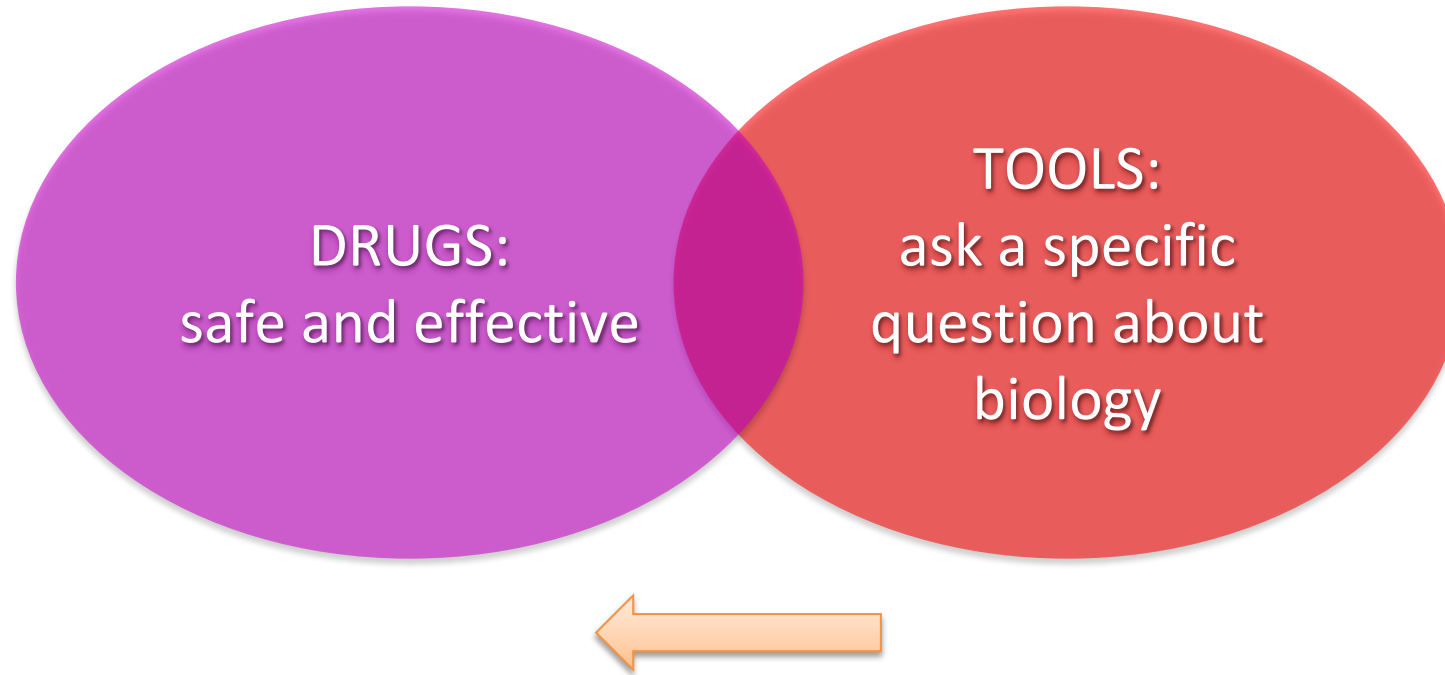
***Are these proteins 'druggable'?***

***Can we use small molecules to increase biological understanding?***

***Are inhibitors likely to lead to desirable clinical outcomes?***  
*(target validation)*



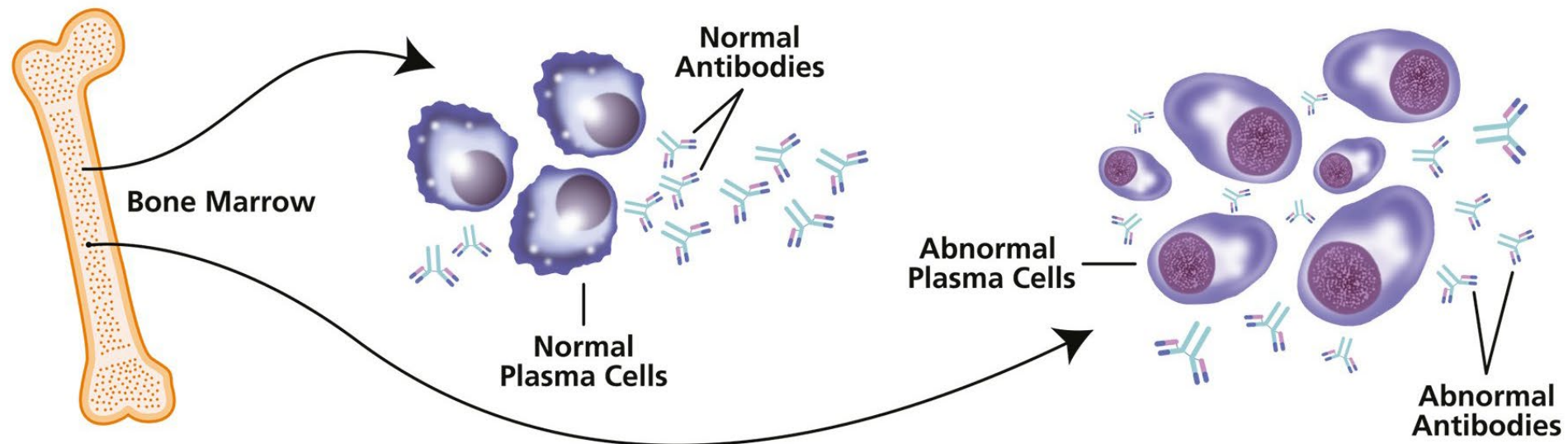
# Tool Compounds Versus Drugs



***Opportunities at UNC facilitate translational research  
and the rapid development of novel therapeutics***

# Unmet needs abound in multiple myeloma

- MM cells are abnormal plasma cells that build up in the bone marrow and form tumors in many bones of the body
- MM is the second most common blood cancer (>30,000 diagnoses in 2020)
- Still unknown why some people get myeloma
- Many currently marketed agents do not overcome the negative prognosis, drug resistance is inevitable, and we lack a reliable curative strategy





# Unmet needs abound in multiple myeloma

---

- MM cells are abnormal plasma cells that build up in the bone marrow and form tumors in many bones of the body
- MM is the second most common blood cancer (>30,000 diagnoses in 2020)
- Still unknown why some people get myeloma
- Many currently marketed agents do not overcome the negative prognosis, drug resistance is inevitable, and we lack a reliable curative strategy

**Novel pharmacological tools are desperately needed to better understand MM biology and treat patients with MM**





# Pinnacle Hill partnership is making translation to the clinic a reality



## *Alliance Between UNC-Chapel Hill and Deerfield intends to advance select Carolina innovations toward a possible new treatment against multiple myeloma*

Pinnacle Hill, the research and development partnership between the University of North Carolina at Chapel Hill and Deerfield Management Company, an investment management firm, recently announced its first project agreement to advance the preclinical development of new medicines.

Pinnacle Hill will support a project of Lindsey James, an assistant professor in the UNC Eshelman School of Pharmacy's Division of Chemical Biology and Medicinal Chemistry. Her work focuses on multiple myeloma, a devastating cancer that develops in bone marrow.

James and her research team are interested in epigenetic abnormalities that lead to cancer and are working to apply medicinal chemistry, chemical biology, and cancer biology approaches to discover potential therapeutic agents. Through this first project, Pinnacle Hill will devote targeted resources to advancing discoveries which have great therapeutic potential for patients with the disease.



Lindsey Ingerman James, Ph.D.

# Pinnacle Hill partnership is making translation to the clinic a reality

- **Highly collaborative** project involving scientists from UNC, Deerfield, and CROs with extensive experience in drug discovery
- **Shared goals** around basic science, therapeutic development, and commercialization
- Molecules identified at UNC are now in **preclinical development** with the goal of identifying analogs suitable for clinical trials
- **Intellectual property** filed at the end of 2021
- **PH resources** have been instrumental in rapidly advancing the project in a way that would have otherwise been challenging
- Discussions around **new projects** are underway



# Translational research opportunities at UNC are numerous



ESHELMAN SCHOOL OF PHARMACY

Eshelman Institute for Innovation

***Mission:*** *The Eshelman Institute is forging a game-changing approach to translating bold new ideas into real-world impact for patients*

- 3 funded projects from the EII ranging from \$50,000 to \$500,000
- Current project is focused on novel MM therapies (distinct from PH)

# Acknowledgements

## James Lab

John Tabor  
Caroline Foley  
Rebecca Johnson  
Peter Buttery  
Juanita Sanchez

## CICBDD

Stephen Frye  
Jacqueline Norris  
Ken Pearce  
Dmitri Kireev

## Pinnacle Hill

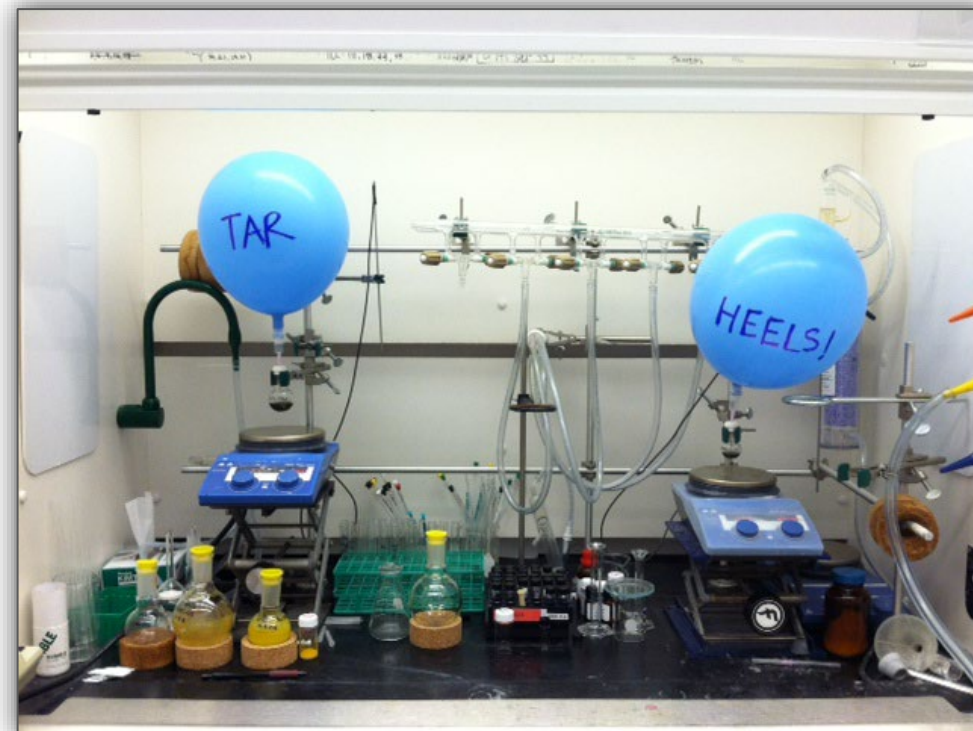
Jon Collins

Ronan Hanley (currently at C4 Therapeutics)  
Isabelle Engelberg  
Jarod Waybright (currently at Design Therapeutics)  
Frankie Potjewyd (currently at SGC UNC)  
Naimee Mehta (currently at Nurix)

## Funding Sources



**NIDA 1R61DA047023-01**  
**NCI 1R01CA242305-01**





UNC Board of Trustees Meeting  
January 27<sup>th</sup> 2022

**C**ENTER *for* **H**YBRID **A**PPROACHES  
*in* **S**OLAR **E**NERGY *to* **L**IQUID **F**UELS

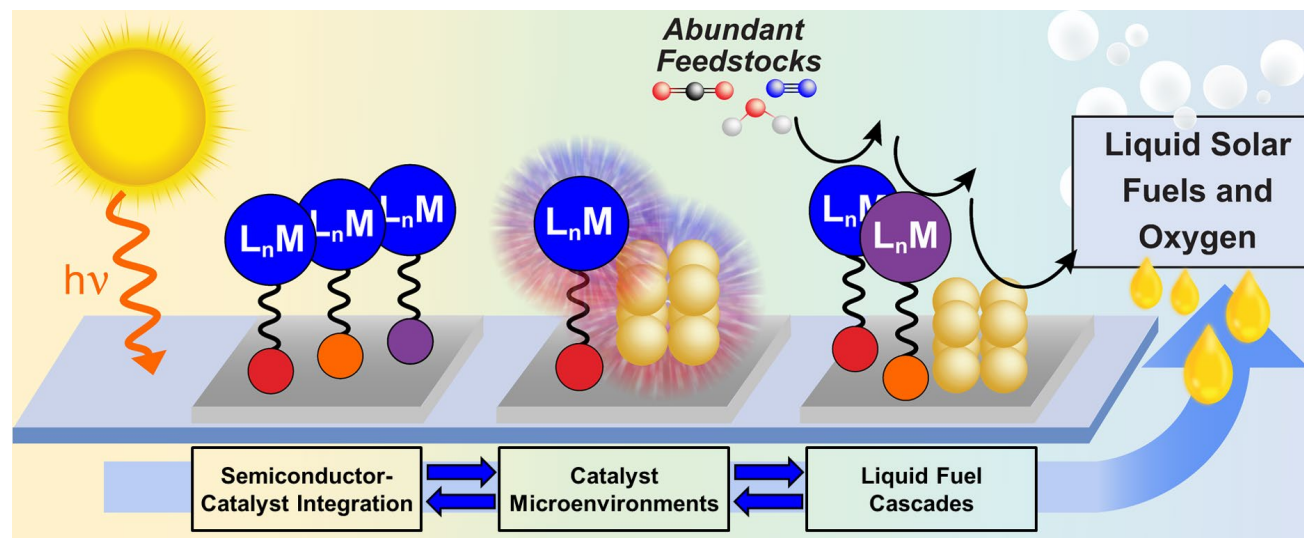


[www.chase.unc.edu](http://www.chase.unc.edu)



# CENTER FOR HYBRID APPROACHES IN SOLAR ENERGY TO LIQUID FUELS

**MISSION:** To develop the fundamental science necessary for the synthesis of hybrid photoelectrodes that generate storable liquid fuels using only the small molecules found in air as chemical feedstocks and sunlight as the sole energy source



[www.chase.unc.edu](http://www.chase.unc.edu)

Center for  
Hybrid  
Approaches  
in Solar  
Energy  
to Liquid  
Fuels



THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

Yale



Brookhaven  
National Laboratory



Penn  
UNIVERSITY of PENNSYLVANIA

NC STATE  
UNIVERSITY



EMORY  
UNIVERSITY



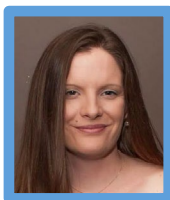
# The CHASE Principal Investigators and Key Personnel



**Jerry Meyer**  
Director



**Jillian Dempsey**  
Deputy Director



**Caley Allen**  
Managing Director



**Joanna Atkin**



**James Cahoon**



**Jeffrey Dick**



**Yosuke Kanai**



**Carrie Donley**



**Renato Sampaio**



**Stephen Tereniak**



**Dan Kurtz**  
Technical  
Communications  
& IP



**Rene Lopez**



**Alex Miller**



**Matthew Lockett**



**Alex Tropsha**



**Pat Holland**



**Sharon Hammes-Schiffer**



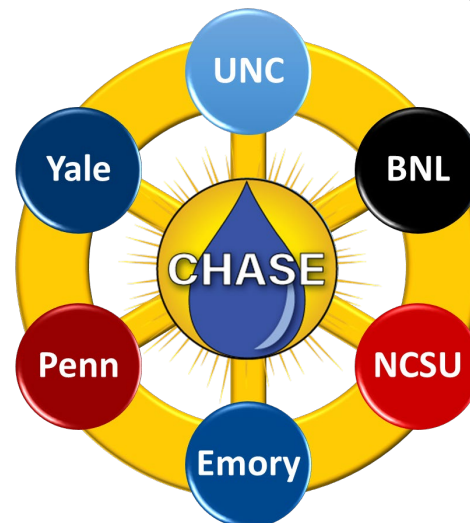
**Nilay Hazari**



**James Mayer**



**Hailiang Wang**



**Javier Concepcion**



**Mehmed Ertem**



**David Grills**



**Jerry Manbeck**



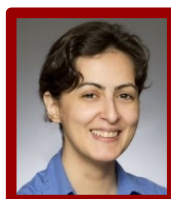
**Dmitry Polyansky**



**José Rodriguez**



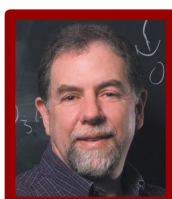
**Jessica Anna**



**Zahra Fakhraai**



**Karen Goldberg**



**Tom Mallouk**



**Eric Stach**



**Tim Lian**



**Phil Castellano**



**Elena Jakubikova**



**Paul Maggard**

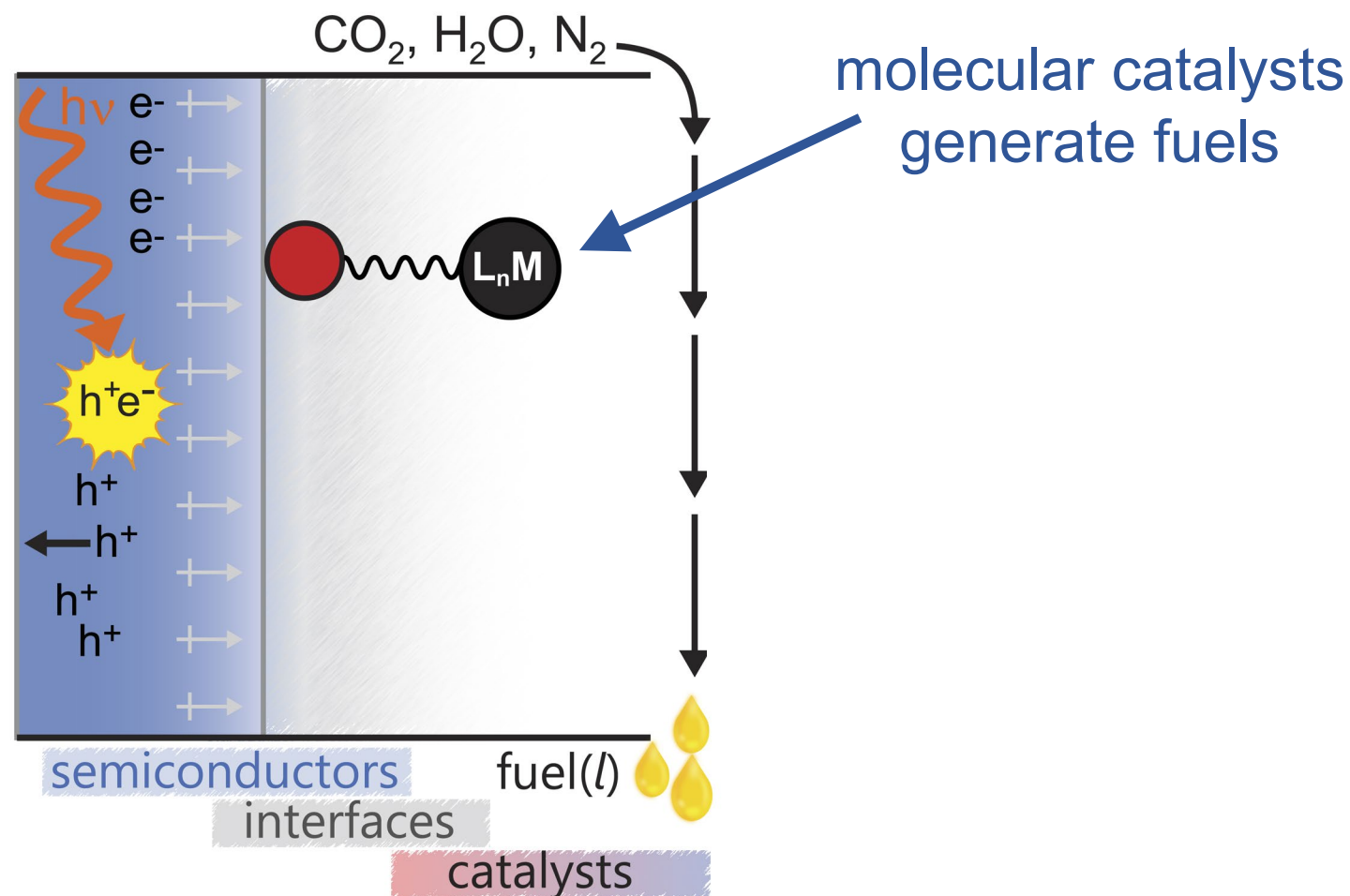


**Greg Parsons**



## FIVE-YEAR RESEARCH GOAL

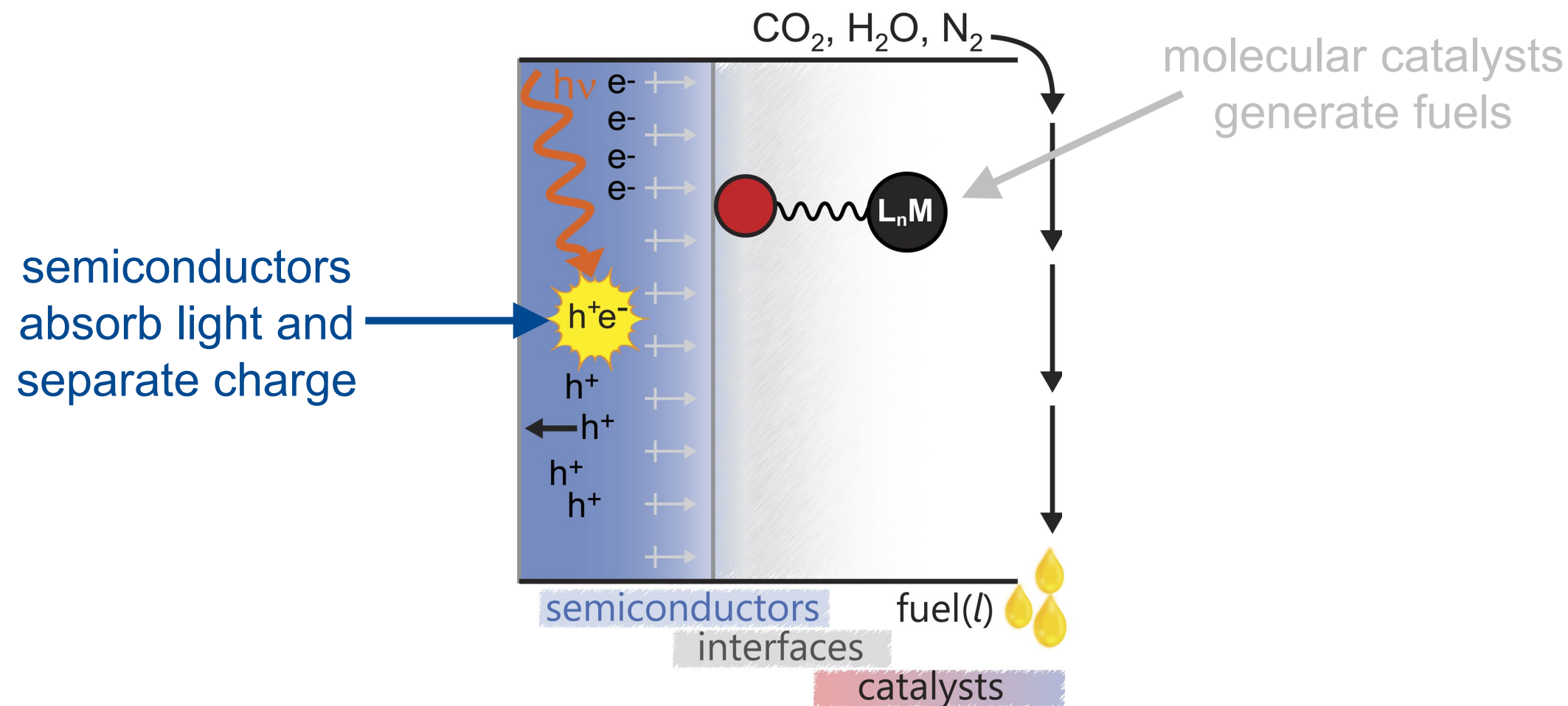
To develop a fundamental molecular level understanding of how *hybrid photoelectrodes, comprised of molecular catalysts with tailored microenvironments* integrated with semiconducting light absorbers, couple single photon absorptions to the multi-electron/multi-proton chemical transformations necessary to generate liquid solar fuels





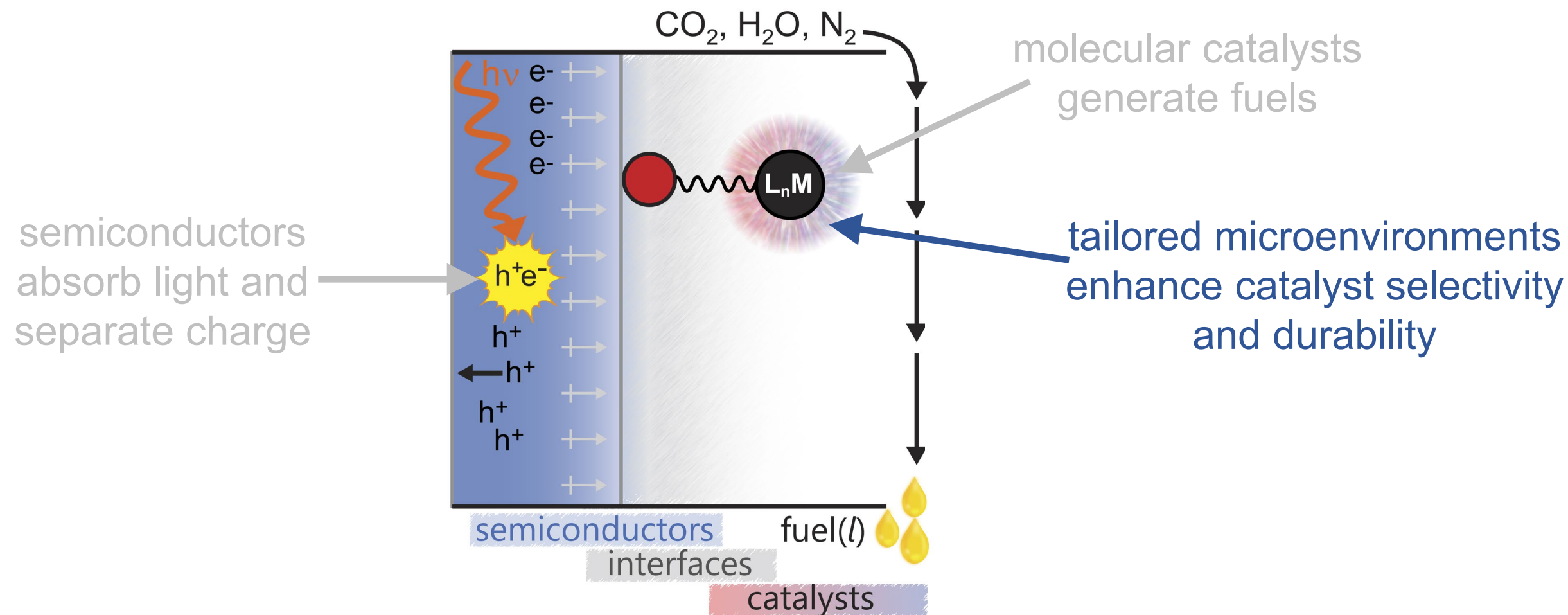
## FIVE-YEAR RESEARCH GOAL

To develop a fundamental molecular level understanding of how *hybrid photoelectrodes, comprised of molecular catalysts with tailored microenvironments* integrated with semiconducting light absorbers, couple single photon absorptions to the multi-electron/multi-proton chemical transformations necessary to generate liquid solar fuels



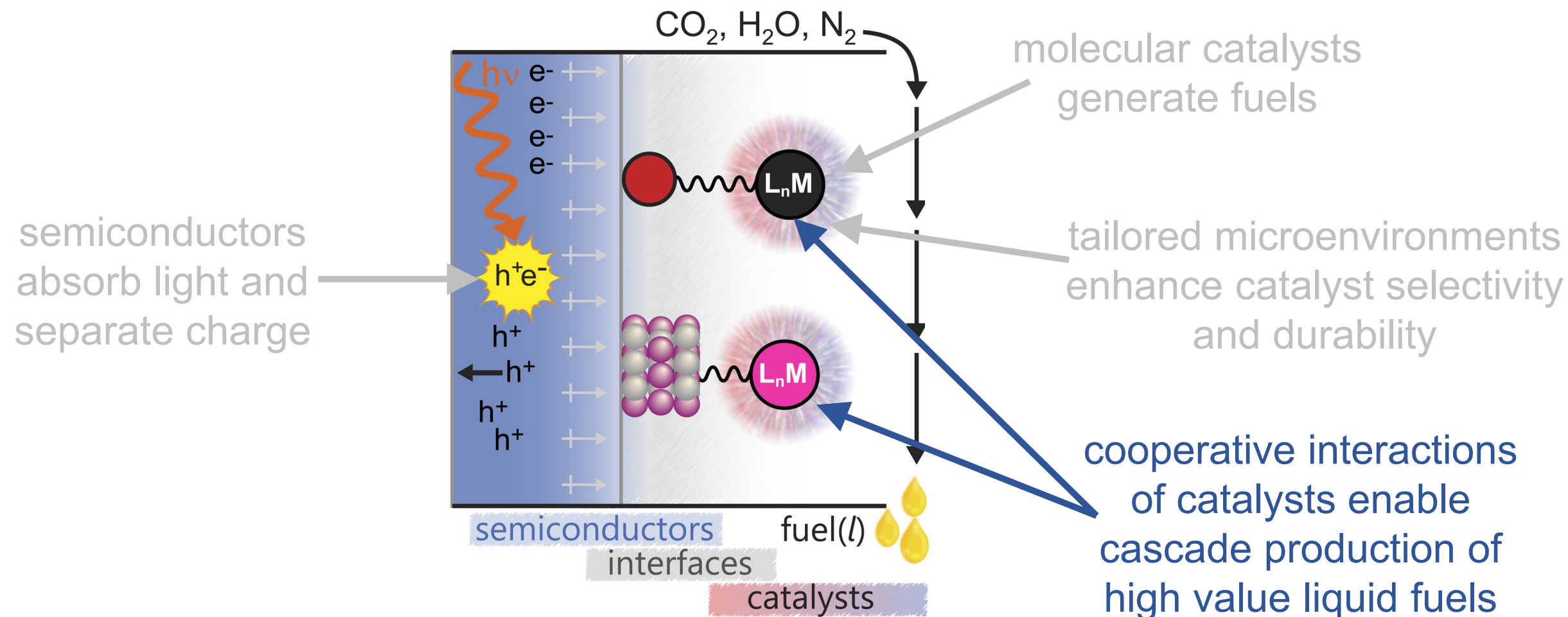
## FIVE-YEAR RESEARCH GOAL

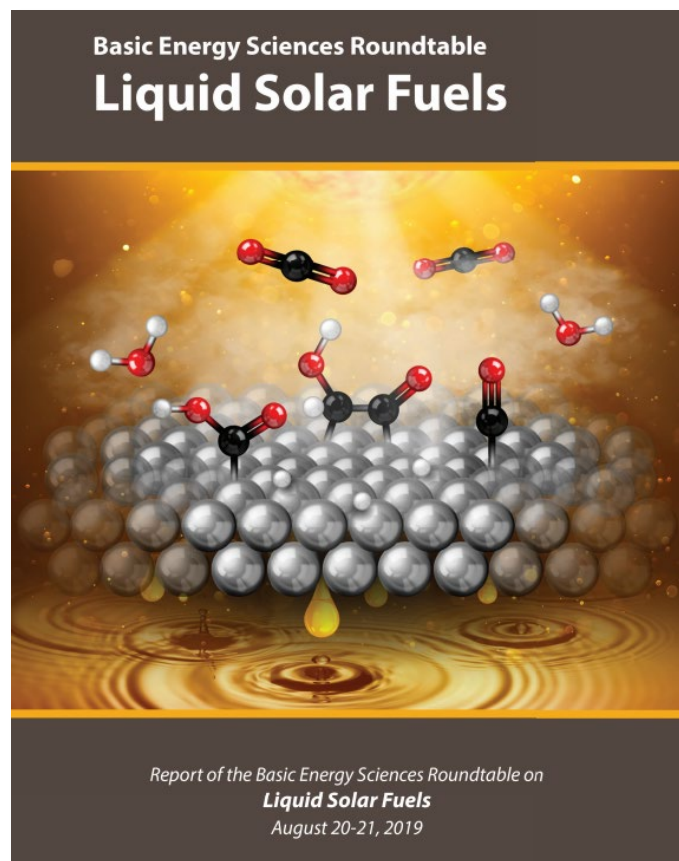
To develop a fundamental molecular level understanding of how *hybrid photoelectrodes, comprised of molecular catalysts with tailored microenvironments* integrated with semiconducting light absorbers, couple single photon absorptions to the multi-electron/multi-proton chemical transformations necessary to generate liquid solar fuels



## FIVE-YEAR RESEARCH GOAL

To develop a fundamental molecular level understanding of how *hybrid photoelectrodes, comprised of molecular catalysts with tailored microenvironments* integrated with semiconducting light absorbers, couple single photon absorptions to the multi-electron/multi-proton chemical transformations necessary to generate liquid solar fuels





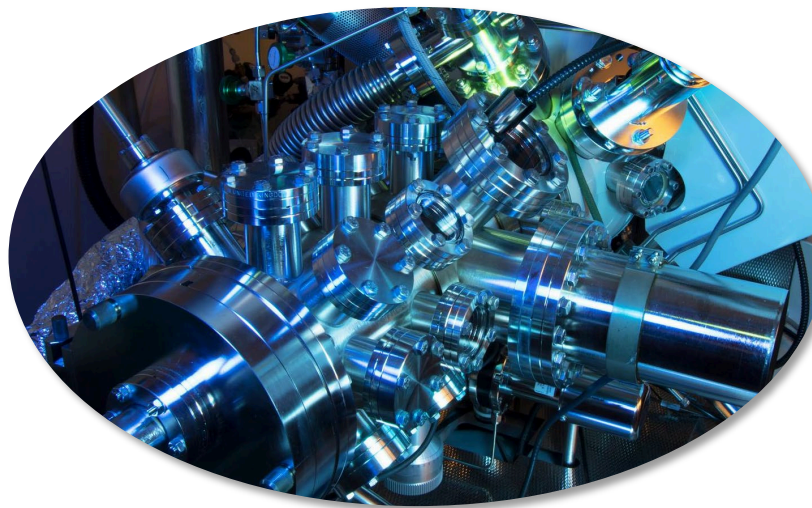
- PRO-1:** Understand Mechanisms that Underpin Constituent Durability & Performance
- PRO-2:** Control Catalyst Microenvironment to Promote Selective & Efficient Fuel Production
- PRO-3:** Bridge Time and Length Scales of Light Excitation & Chemical Transformations
- PRO-4:** Tailor Interactions of Complex Phenomena to Achieve Integrated Multicomponent Systems



# Foundations for Success Are in Place



**The Dream Team**



**World-class Research  
Infrastructure**



**Effective Leadership &  
Management**

- CHASE has enacted an effective research management plan that cultivates synergistic, interdisciplinary, and collaborative research across six sites
- Foundational research infrastructure has been built in Year 1 to facilitate rapid research advances towards CHASE goals
- An adaptive approach to management will ensure CHASE research stays mission-focused and makes rapid progress towards scientific goals



Center for  
Hybrid  
Approaches  
in Solar  
Energy  
to Liquid  
Fuels



## ACKNOWLEDGMENT

This work was supported as part of the Center for Hybrid Approaches in Solar Energy to Liquid Fuels (CHASE), an Energy Innovation Hub funded by the U.S. Department of Energy, Office of Science, Office of Basic Energy Sciences under Award Number DE-SC0021173



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Science



THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

Yale



NC STATE  
UNIVERSITY

