NEWS OF THE WEEK
APRIL 10, 2023
CBE IN THE NEWS

• Congratulations to Professor Norm Wagner and his coauthors, Jula Heep and Jeffrey Richards, who were recently honored by the American Chemical Society with the Award for Distinguished Services in the Chemical Sciences. The award recognizes their exceptional contributions to chemical education and their sustained impact on high school and college chemistry teaching. The American Chemical Society honored them with a citation for their outstanding contributions to the field of chemistry education.

DEPARTMENTS/SERIES/EVENTS:

• CBE Seminar Series
  Kyoung-Sheen Chui, University of Wisconsin-Madison
  Friday, April 7
  10:00 AM to 11:00 AM
  Online via Zoom:https://uwmadison.zoom.us/j/99301726198
  Electrical and Computer Engineering
  "Microfluidic Capillary Electrophoresis of Starch and Cellulose: A Novel Strategy for the Monitoring of Starch Quality" by John D. Lee
  Wednesday, April 12
  10:00 AM to 11:00 AM
  Online via Zoom: https://uwmadison.zoom.us/j/99301726198
  Electrical and Computer Engineering
  "Life in A Trash Test: How Bacteria Nastily Crowded Species" by Sujit Datta, Princeton University

OTHER DEPARTMENTS/SERIES/EVENTS

• Physical Chemistry Seminar Series
  Robert Dick, Cornell University
  Friday, April 14 at 4:00 PM in 291 Brown Lab
  "Using CV to understand quantum transport in molecular and nanostructures" by Kanming Zhang

• Inorganic Chemistry Seminar Series
  Gao Liang, University of Connecticut
  Wednesday, April 12 at 4:00 PM in 291 Brown Lab
  "Seeking chiral design: Light and synthesis of molecules emitting circularly polarized luminescence" by N. Subramanian

• Applied Chemistry Seminar Series
  Richard R. Schrock,
  Tuesday, April 11 at 4:00 PM in the AUDITORIUM at STAR Tower
  "Mo and W-Based Olefin Metathesis Catalysts are formed from Metallicallopentane" by J. M. Andrews

3M RISE SYMPOSIUM

• 4th Annual RISE Symposium
  We would like to announce that the 4th annual RISE Symposium “Rising Influence in Science and Engineering” is now accepting applications. The purpose of the symposium is to introduce emerging leaders to the wide range of rewarding careers in research and development of 3M. This is an event that will be hosted from July 17-19, 2023 and is a great way for future STEM leaders to get introduced to the corporate world. Ideal applicants are expected to complete their graduate degree appointment within 12 months of the RISE event. We will accept applications from any STEM field. Attached is a flyer describing the symposium. The RISE Symposium application deadline is May 2, 2023.

DOW EVENTS

• Dow’s Annual BEST Symposium
  We are now accepting applications for the 17th annual Dow Building Engineering and Science Talent (BEST) Symposium. Applications will be held in person in Madison, MI on July 24–27, 2023. The symposium is primarily intended to introduce Black, Latinx, and Native American U.S. doctoral and postdoctoral students to rewarding careers in industry, research, and problem-solving, including the many opportunities with one of the world’s largest and leading materials science organizations. Dow is looking to build a diverse, inclusive, and multicultural workforce by offering scientific and PhD recruiting team, demonstrates our commitment to a diverse and working force.

Additional information may be found on our website at Dow.com. Applications are due by April 30, 2023.

Participants in the conference may be considered for future employment at Dow. Participation neither obligates the student to apply for employment, nor guarantees future consideration for employment at Dow. For those wishing to learn more about opportunities, please visit our careers page.

JOBS/RECRUITING

• Pharma Solutions
  Position: Senior Scientist
  Role: ID-095851
  We have an exciting opportunity for a Scientist in the Cell Biology and Biopharm group, part of Pharma Solutions at the headquarters in Whealton, Akron. The Scientist will lead the preparation and execution of experimental activities to support the Pharma Solutions R&D growth strategy, including developments to improve our understanding of phosphorylation in biopharmaceuticals such as cell and gene therapy and tissue engineering. A successful candidate will have laboratory experience associated with the relevant Biophysics and Biopharmaceuticals areas and experience in instrumentation trouble shooting. Additionally, the candidate must demonstrate good interpersonal and organizational skills.

BioCurie
  Position: Internship in Graphic User Interface (GUI) Development
  BioCurie is seeking to hire a talented individual to assist in the development of an intuitive graphic user interface for our validated software product. We are looking for a talented and knowledgeable team member to help us translate our validated software into a commercial software product that will be used by our research scientists and PhD recruiting team.

Additional information may be found on our website. Applications are due by April 30th, 2023. Participants in the conference may be considered for future employment at Dow. Participation neither obligates the student to apply for employment, nor guarantees future consideration for employment at Dow. For those wishing to learn more about opportunities, please visit our careers page.
Circularly polarized luminescence (CPL) is the emission of light with preferential right- or left-polarization states. CPL has emerged as a next-generation light source since the added chiral optical information presents unique opportunities to enhance optical displays, bio-imaging, security features for sensitive documents, and quantum information science. Synthetic designs and strategies towards producing molecules capable of emitting strong CPL will be discussed. Bright CPL-emitting lanthanide-based complexes will be presented, as well as some rare examples of base-metal and actinide-based CPL-emitting molecules. We will also show that CPL can be extended in the near-infrared, especially in the critical telecom C-band.

Gaël was born and raised in France. He received an Engineering degree from Chimie ParisTech and a Master’s degree from the Université Pierre et Marie Curie (now Sorbonne Université), Paris, France. Gaël moved to the US in 2009 and received his Ph.D. in 2013 with Prof. Guy Bertrand starting at UC Riverside then moving to UC San Diego, working on mesoionic carbenes. He then moved to Caltech for a postdoc with Prof. Jonas Peters working on low-valent iron complexes and nitrogen fixation. Gaël started his independent career at UConn in 2016 working on the coordination chemistry of lanthanides and transition metals for circularly polarized luminescence. He received an NSF CAREER award in 2021.
BIOCHEMISTRY SEMINAR

ENGINEERING IRON ENZYMES TO REPROGRAM BIOLOGY SIGNALING AND CHEMICAL CATALYSIS

From respiration to nitrogen fixation, iron containing enzymes drive key biological processes in all forms of life. Bhagi-Damodaran lab seeks to uncover the structural and mechanistic basis of iron enzyme function, and design small-molecule and computational protein design approaches to engineer their biological activity. Such enzyme engineering studies, while fundamentally relevant to the fields of biological and inorganic chemistry, are posed to have significant implications on biological redox signaling and chemical catalysis. In this talk, Prof. Bhagi-Damodaran will discuss her lab’s research towards (A) reprogramming non-heme iron enzyme driven oxygen signaling as a mechanism to target chemoresistance in cancer cells, and (B) developing non-heme iron enzyme based bio-catalysts that enable direct and modular C-H functionalization reactions. The research talk will be of broad interests to Biological, Inorganic, Computational, and Inorganic Chemists.

Ambika Bhagi-Damodaran is an Assistant Professor of Chemistry at the University of Minnesota, Twin Cities. Ambika completed her Ph.D. at the University of Illinois, Urbana-Champaign in 2016 focusing on structure-function relations of metalloenzymes involved in respiration and denitrification processes. Ambika’s postdoctoral work at University of California, San Francisco focused on understanding structural basis of protein-protein interactions in an enzymatic cancer drug target.

In 2018, Ambika started her independent career at the University of Minnesota. She leads the Bhagi-Damodaran lab which aims to change the landscape of metalloenzymes towards sustainable catalysis and new therapeutics. Throughout her career, Ambika has received numerous awards. Most notable amongst them are the Young Investigator Award from American Chemical Society, NIH Ruth L. Kirschstein postdoctoral fellowship, Faculty for the future award from Schlumberger foundation, NIH MIRA award, NSF CAREER Award, 3M NTF Award, Cottrell Scholar Award, and Mcknight Land-Grant Professorship.

Ambika grew up in India, and is the first from her family to complete a four year undergraduate program. She came to the US to pursue Ph.D. in Chemistry, and was so fascinated by the wonders of biology and chemistry that she decided to stay in the US and pursue research at the forefront of biological chemistry. If not a chemistry faculty, Ambika would have pursued a career in dance and theater. She was part of a Bollywood dance team during her graduate school. In her “free” time, Ambika likes watching sitcoms and cooking. Ambika is mom of a five year old, and her best science and education ideas come while spending time with her daughter and partner.
Internship in Graphic User Interface (GUI) Development

Employment Type: Paid internship
Location: Wilmington, Delaware
Work Site: Hybrid, with regular video calls and weekly in-person meetings
Time: Full-time over summer, with opportunity to work part-time before and after summer

About the Role
BioCurie’s mission is to harness AI to transform the development and manufacturing of lifesaving cell and gene therapies. We are looking for a talented and knowledgeable GUI developer to help us translate our validated software into a commercial software product for the biopharmaceutical industry. We welcome intellectually curious, passionate people who share our vision of using innovation to help deliver next-generation therapies to patients. As an intern in an early-stage startup company, you will have the opportunity to work closely with senior leadership and make a valuable contribution to our first software product for gene therapy production.

The ideal candidate should have an eye for clean and artful design, possess superior UI skills, and be able to translate high-level requirements into interaction flows and artifacts, and transform them into beautiful, intuitive, and functional user interfaces

You will get to...
• Work on developing first-in-class software product for gene therapy production
• Attend weekly meetings and participate in networking events
• Work closely with the CEO and Chief Scientist
• Gain experience in the biotech industry
• Contribute to the development of a software product that could help transform gene therapy manufacturing to help delivery lifesaving therapies to patients

Responsibilities
• Work closely with the BioCurie team to
  1. Convert a validated algorithm into a software product with useful functionality.
  2. Deliver a high-quality minimal validated product (MVP) that is ready for launch.
  3. Deploy the MVP for beta testing.
• Create and design a GUI for a software product with drag-and-drop functionality
• Execute all visual design stages from concept to final hand-off
• Iterate designs and solutions efficiently and effectively
• Collaborate and receive feedback from the company staff to make changes
• Complete projects according to deadline
• Establish and promote design guidelines, best practices, and standards
• Present and defend designs and key milestone deliverables to stakeholders
• Conceptualize original ideas that bring simplicity and user friendliness to complex design roadblocks

Requirements
• Currently enrolled in a Bachelor's, Master's, or PhD degree program
• Skilled in Python
• Strong creative and analytical skills, with eye for detail
• Basic knowledge of layouts, typography, plotting scientific data, line composition, color, and other graphic design fundamentals
• Experience with Adobe Photoshop, Illustrator, or other visual design tools
• Demonstrated GUI development skills through prior internships or interesting independent programming projects
• Ability to work in a team and independently where needed
• Excellent written and verbal communication skills
• Passion continuous learning and improvement

Preferred Capabilities and Experience
• Computer Science or Computer Engineering majors
• Compelling portfolio of graphic design work

About BioCurie
BioCurie is an early-stage biotechnology software company located in Wilmington, Delaware. BioCurie was co-founded in 2021 by Dr. Irene Rombel, a biopharma industry veteran, and Dr. Richard Braatz, a world leader in AI and data modeling for process control and biomanufacturing, and Edwin R. Gilliland Professor of Chemical Engineering at MIT.

Applying
If you would like join us in this exciting journey in developing innovative AI-driven software products for cell and gene therapy production, please send the following:

• Resume
• Cover Letter
• References
• Transcript
• Any relevant examples of work products or projects

It is the policy of BioCurie to provide equal employment opportunities to all employees and employment applicants.

Contact
If you have any questions or would like to apply, please contact us at:

contact@biocurie.com

We look forward to hearing from you!
Internship in Computer Programming and Software Development

Employment Type: Paid internship
Location: Wilmington, Delaware
Work Site: Hybrid, with regular video calls and weekly in-person meetings
Time: Full-time over summer, with opportunity to work part-time before and after summer

About the Role
BioCurie’s mission is to harness AI to transform the development and manufacturing of lifesaving cell and gene therapies. We are looking for a talented and knowledgeable programmer to help developer to help us translate our validated software into a commercial software product for the biopharmaceutical industry. We welcome intellectually curious, passionate people who share our vision of using innovation to help deliver next-generation therapies to patients. As an intern in an early-stage startup company, you will have the opportunity to work closely with senior leadership and make a valuable contribution to our first software product for gene therapy production.

You will get to...
- Work on developing first-in-class software product for gene therapy production
- Attend weekly meetings and participate in networking events
- Work closely with the CEO and Chief Scientist
- Gain experience in the biotech industry
- Contribute to the development of a software product that could help transform gene therapy manufacturing to help delivery lifesaving therapies to patients

Responsibilities
- Work closely with the BioCurie team to
  1. Convert a validated algorithm into a software product with useful functionality.
  2. Deliver a high-quality minimal validated product (MVP) that is ready for launch.
  3. Deploy the MVP for beta testing.
- Iterate designs and solutions efficiently and effectively
- Collaborate and receive feedback from the company staff to make changes
- Complete projects according to deadline
- Establish and promote design guidelines, best practices, and standards
- Present and defend designs and key milestone deliverables to stakeholders
- Conceptualize original ideas that bring simplicity and user friendliness to complex design roadblocks
Requirements
• Currently enrolled in a Bachelor’s, Master’s, or PhD degree program
• Skilled in Python
• Passion for coding and mathematics
• Excellent numerical and analytical skills
• Strong problem-solving and reasoning skills
• Knowledgeable programmer with an eye for detail
• Demonstrated programming skills through prior internships or interesting independent programming projects
• Ability to work in a team and independently where needed
• Good written and verbal communication skills
• Passion for continuous learning and improvement

Preferred Capabilities and Experience
• Science/Engineering majors with strong Computer Science coursework or demonstrated experience are encouraged to apply.
• Software debugging skills, including using collaborative tools such as GitLab and/or GitHub.
• Experience with C/C++, Javascript, and related programming languages is beneficial.
• Experience with visualization would be useful.

About BioCurie
BioCurie is an early-stage biotechnology software company located in Wilmington, Delaware.
BioCurie was co-founded in 2021 by Dr. Irene Rombel, a biopharma industry veteran, and Dr. Richard Braatz, a world leader in AI and data modeling for process control and biomanufacturing, and Edwin R. Gilliland Professor of Chemical Engineering at MIT.

Applying
If you would like join us in this exciting journey in developing innovative AI-driven software products for cell and gene therapy production, please send the following:

• Resume
• Cover Letter
• References
• Transcript
• Any relevant examples of work products or projects

It is the policy of BioCurie to provide equal employment opportunities to all employees and employment applicants.

Contact
If you have any questions or would like to apply, please contact us at:

contact@biocurie.com

We look forward to hearing from you!