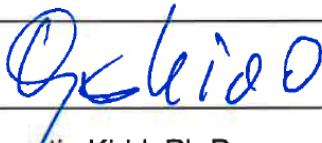


NOMINATION SIGNATURE PAGE

2024 Virginia Outstanding Faculty Awards

Nominations must include this as the cover page of the nomination package PDF submission

Name of Applicant:	Dr. Tarek Abdel-Fattah
Institution:	Christopher Newport University
Category (choose only one): <ul style="list-style-type: none">• Baccalaureate Institution• Masters/Comprehensive Institution• Research/Doctoral Institution• Two-Year Institution• Rising Star	Masters/Comprehensive Institution
Signature of President or Chief Academic Officer:	
Printed Name of President or Chief Academic Officer:	Quentin Kidd, Ph.D.
E-mail address of President or Chief Academic Officer:	qkidd@cnu.edu
Telephone number of President or Chief Academic Officer:	+1 757-594-8499

Mission Statement

The mission of Christopher Newport University is to provide educational and cultural opportunities that benefit CNU students, the residents of the Commonwealth of Virginia and the nation.

Christopher Newport provides outstanding academic programs, encourages service and leadership within the community, and provides opportunities for student involvement in nationally and regionally recognized research and arts programs.

Our primary focus is excellence in teaching, inspired by sound scholarship. At CNU, personal attention in small classes creates a student-centered environment where creativity and excellence can flourish. Our primary emphasis is to provide outstanding undergraduate education. We also serve the Commonwealth with master's degree programs that provide intellectual and professional development for graduate-level students.

We are committed to providing a liberal arts education that stimulates intellectual inquiry and fosters social and civic values. Christopher Newport students acquire the qualities of mind and spirit that prepare them to lead lives with meaning and purpose. As a state university, we are committed to service that shapes the economic, civic, and cultural life of our community and Commonwealth.

CNU's full mission statement can be found at: <https://cnu.edu/whoweare/mission/>

Summary of Accomplishments

Dr. Tarek M. Abdel-Fattah, a Lawrence J. Sacks Endowed Professor of Chemistry at Christopher Newport University (CNU) and CNU Director of the Applied Research Center (ARC) at Thomas Jefferson National Accelerator Facility since 2006, joined CNU's faculty in the Fall of 1999. Dr. Abdel-Fattah is an esteemed professor, inspiring teacher, beloved mentor, and internationally recognized scientist renowned for outstanding scholarship and service at CNU and in the Hampton Roads area. Dr. Abdel-Fattah's decades-long research program is interrelated to environmental issues, and his dedication to solving real-life problems in water and energy sustainability contribute to a more sustainable and resilient future for our planet and its inhabitants. Dr. Abdel-Fattah's commitment to delving into root causes for environmental problems, testing hypotheses, and evaluating potential remedies is a fundamental approach via his more than 140 papers and patents to making meaningful contributions in these fields. Dr. Abdel-Fattah's work can be found across many prestigious scientific journals; however, the greatest testament to Dr. Abdel-Fattah's mentorship to students lies within his work at CNU. His prolific publication record with students indicates a clear commitment to enriching the lives of his students. Dr. Abdel-Fattah involves his students in every step of his research, and his studies contain significant scientific merit and impact with his publications. His research was publicly recognized in 2022 when he was named among the World's Top 2% scientists and in 2021, when he was honored to receive the CUR national award for his contributions to undergraduate research. In 2019, he was recognized with the College Award for Excellence in Teaching and Mentoring, highlighting his commitment to educating and guiding students. In 2012, he received the Faculty Award for Excellence in Scholarship, acknowledging his significant contributions to research and academic advancement. Additionally, Dr. Abdel-Fattah has been proud to receive certificates of recognition in 2008, 2009, and 2011 from NASA, which underscore his ongoing dedication to his work.

Dr. Abdel-Fattah has been funded by the National Aeronautics and Space Administration (NASA), the National Science Foundation (NSF), the Department of Energy (DOE), the Department of Defense (DOD), the Burroughs Wellcome Fund, and several private sector organizations and businesses.

Dr. Abdel-Fattah's deep passion for chemistry is the cornerstone of his career. With CNU's support, his efforts effectively reinstated the Chemistry undergraduate major at CNU and worked to achieve the University's gold-standard certification from the American Chemical Society. His passion for chemistry and for his students extends beyond the campus walls. Dr. Abdel-Fattah continues to spearhead student conferences as a way for students to celebrate and share their research with the scientific community, for the past twenty-two years.

Dr. Abdel-Fattah's commitment to his students, his love for teaching, and his dedication to the community shine through in his collaboration with research students from CNU, extending to numerous institutions within and beyond Virginia. These collaborations span across Old Dominion University, Norfolk State University, Virginia Commonwealth University, University of California Los Angeles (UCLA), Universidad de Oviedo (Spain), Alexandria University (Egypt), University of Kitakyushu (Japan), and Hanyang University (South Korea). This demonstrates that Dr. Abdel-Fattah's research has a global reach, attracting researchers from around the world. His efforts to integrate CNU's students into his international research endeavors not only enrich their educational experiences but also significantly contribute to advancing knowledge and fostering a global research community. Also, Dr. Abdel-Fattah's expansive professional network allows scholars and students of diverse backgrounds to learn from and work with one another collaboratively, increasing inclusion and diversity within his research group.

In short, Dr. Abdel-Fattah's personal passion for chemistry and research, combined with his drive to provide mentorship to students of all backgrounds, is important to his efforts to promote the mission statement of his university and encourage positive developments in his community.

Excellence in Teaching

Dr. Abdel-Fattah has committed himself to integrating his ongoing research efforts into instruction so that his students can see the real-world applications of scholarly work. He was a key player in institutionalizing the principles of undergraduate research at CNU. Many of his scientific publications include CNU's students as co-authors. Dr. Abdel-Fattah developed and taught twelve different classes and labs in the past 23 years and conducted over 75 independent studies (CHEM 499) as an extra teaching load. He addressed the issue of the ever-increasing costs of textbooks and lab manuals by modifying his Inorganic Chemistry Lab (CHEM 401L) curriculum. He designed and wrote in-house lab experiments, which he then provided to his students for free. He requires students to critically analyze data, interpret results, and draw meaningful conclusions in their lab reports, following the guidelines used in university and federal labs. For students pursuing careers in science, medicine, engineering, or related fields, the ability to write effective lab reports is a valuable skill. It is often required in both academic and professional settings. Over 100 students who have engaged in undergraduate research with Dr. Abdel-Fattah and showcased their findings at these conferences have successfully gained acceptance into graduate or medical schools.

Dr. Abdel-Fattah treats his students as he would members of his own family. He is accessible and accommodating to the personal struggles and responsibilities many graduate students face during their studies. Dr. Abdel-Fattah supervised eight M.S. theses and has served as an M.S. thesis committee member 20 times. Dr. Abdel-Fattah was the thesis advisor for one Ph.D. student from Norfolk State University, four Ph.D. and two M.S. students from Old Dominion University, and three Ph.D. students from Alexandria University, Egypt, and one student at the Universidad de Oviedo, Spain, in which the student spent two years in his ARC lab, funded by the Ministry of Higher Education of Egypt.

Excellence in Discovery

In general, Dr. Abdel-Fattah's research projects are related to creating new materials that have tiny holes in nanoscale, like a sponge. Dr. Abdel-Fattah uses these materials to clean up water from different contaminants such as mercury, lead, arsenic, cadmium, and chromium. This helps make drinking water and industrial waste cleaner. Dr. Abdel-Fattah is also using eco-friendly materials that come from sustainable sources. He uses these special materials to clean water and to help make renewable energy, especially hydrogen. The following are examples of his work:

Project 1 is focused on hydrogen as a sustainable source of energy. The project resulted in 16 peer-reviewed papers with CNU student coauthors and 30 presentations and abstracts at different national and international meetings.

Project 2 focuses on the development of cost-effective flexible solar cells as a contribution to sustainable energy sources. This endeavor has yielded significant outcomes, including the publication of 10 peer-reviewed papers co-authored by students, as well as the presentation of 15 abstracts and presentations at various national and international conferences.

Project 3 is related to biochar as a sustainable source for water treatment. The project resulted in ten peer-reviewed papers with CNU student coauthors and 20 presentations and abstracts at different national and international meetings.

Project 4 is related to utilizing silicates and natural materials as sustainable materials for various water treatment applications due to their unique properties. The project resulted in 20 peer-reviewed papers with CNU's students and 50 presentations and abstracts at different national and international meetings.

Dissemination of Research Results: Dr. Abdel-Fattah has published 133 refereed papers (96 peer-reviewed papers and 37 peer-reviewed Transactions), 70 co-authored with CNU students. He published 11 conference proceeding papers, nine of which were co-authored with CNU

students. In addition to 9 patents and patent applications, Dr. Abdel-Fattah has given 138 research presentations and posters (of which 75 were co-authored with students). He presented 34 invited talks in the U.S. and various other countries. Ninety-Seven of Dr. Abdel-Fattah's research students authored 232 abstracts for oral presentations and poster presentations at different local conferences.

Support: Dr. Abdel-Fattah's work has significantly impacted CNU's research and teaching infrastructure. He participated in planning the new, state-of-the-art \$80M science building, Forbes Hall. He also assisted in the procurement of \$1 million in state-of-the-art equipment for the chemistry department. Dr. Abdel-Fattah, as Principal Investigator (PI), received a \$250K NSF Major Research Instrumentation (MRI) award to obtain an X-ray fluorescence spectrometer (XRF) and another as co-PI for a \$115K project to obtain a Scanning Tunneling Microscope (STM). Dr. Abdel-Fattah has been funded with more than \$550,000 from NSF, NASA, DOD, DOE and several private sector organizations and businesses.

Impact of the Research: In 2022, Dr. Abdel-Fattah has been included in the top 2% of impactful researchers [John P.A. Ioannidis, Updated science-wide author databases of standardized citation indicators, 2022, Version 4, DOI:10.17632/btchxktzyw.4]. In 2021, Dr. Abdel-Fattah received the CUR national award, in 2019, he was recipient of the College Award for Excellence in Teaching and Mentoring, and in 2012, he received the Faculty Award for Excellence in Scholarship from CNU.

Excellence in Knowledge Integration

Dr. Abdel-Fattah strives to connect with other researchers through his shared expertise to help solve complex problems, make informed decisions, and advance science, technology, and education. Dr. Abdel-Fattah's collaboration with national federal labs is paramount for his students and CNU. Connecting academia with these esteemed institutions bridges the gap between theoretical understanding and practical applications. The following are a few examples related to his efforts:

Department of Defense (DOD): With Langley Air Force Base, Dr. Abdel-Fattah designed processes and materials for immobilizing lead in the soil of small arms firing ranges. The project resulted in several papers and one U.S. patent (7,915,475) with CNU's students as co-authors.

Department of Energy (DOE): In collaboration with Thomas Jefferson National Accelerator Facility (Jefferson Lab), Dr. Abdel-Fattah designed an acid-free electrochemical polisher for niobium superconductor cavities using an eco-friendly composition based on ionic liquids. The project resulted in 10 papers with CNU's students as co-authors.

Collaborative Research with NASA Langley Research Center: Dr. Abdel-Fattah produced carbon nanotubes (CNTs) using low-cost precursors for advanced sensing applications. Currently, NASA Langley Research Center is advertising for the license and commercialization of these processes. Dr. Abdel-Fattah received several certificates of recognition in 2008 and 2009 from NASA for his invention of templated growth of carbon nanotubes and in 2011 for inventing a method for purifying biodiesel fuel. The project resulted in several papers and one US patent (U.S. Patent, 7,169,374).

DOE National Renewable Energy Laboratory (NREL): Dr. Abdel-Fattah developed a process via solid materials to store and generate hydrogen described in 16 peer-reviewed papers with his CNU students. Building on that work, he was encouraged to submit a proposal to DOE to support him as a visiting Faculty to NREL in Golden, Colorado, in summer 2023 with two

undergraduate students. The outcomes from his visit will be two manuscripts and hopefully long-term collaborations.

Excellence in Service

Dr. Abdel-Fattah feels strongly that his contributions to CNU, the community, and professional organizations have been instrumental in his own personal growth and development. This, in turn, allows him to give more of himself to his students and to further the advancement of science. His actions exemplify the ethos of giving back, actively working to solve critical problems, and creating a meaningful legacy of profound influence on those around him.

Dr. Abdel-Fattah has been engaged in numerous CNU committees such as chair of the Undergraduate and Graduate Research Councils, Academic Technology Advisory Committee, Faculty Review Committee and many more.

Dr. Abdel-Fattah has been extensively engaged in various roles and initiatives that promote science, research, and education in the Hampton Roads area and the State of Virginia. His impact crosses regional economic development (as an executive committee member of Hampton Roads Research Partnership for 6 years), scientific societies (executive Committee member Hampton Roads American Chemistry Society (ACS) for 23 years), research conferences (Sigma Xi Chapter Program Chair for 23 years), educational outreach, and even serving as a science fair judge for high and middle school students' science projects in the Hampton Roads area and state of Virginia such as Virginia Academy of Science. The lasting impact of his involvement with and encouragement of budding researchers will be felt among the broader scientific community in the region for years to come.

Dr. Abdel-Fattah has extensive experience in scientific proposal review, having evaluated proposals for national and international funding agencies such as the Jeffress Memorial Trust Fund, NSF, ACS, Science Center programs of the U.S. Department of State and South Africa/Egypt Research Cooperation Program. Additionally, he has taken on various roles outside his primary responsibilities at CNU, including serving on advisory boards and as a board member for multiple scientific journals such as *Scientific Report* (one of *Nature Journals*). Dr. Abdel-Fattah's involvement in evaluating scientific proposals for funding agencies is crucial. This process ensures that research projects receive the necessary financial support to advance scientific knowledge and address important challenges. Dr. Abdel-Fattah's involvement in international programs, such as the South Africa/Egypt Research Cooperation Program, promotes global collaboration in scientific research, fostering a diverse and interconnected scientific community.

Summary

In summary, Dr. Abdel-Fattah is an incontestably positive example for all of Christopher Newport University and the broader community. His scholarly track record and talent for creative instruction stand out as an exemplary example. His experiential teaching style inspires students to look beyond themselves to achieve things for the greater good. Through his decades of outstanding research, teaching, and service, Dr. Abdel-Fattah has been a role model, inspiring those around him to live meaningful and purposeful lives. Dr. Abdel-Fattah's research on water and energy sustainability are critical areas that directly impact the environment and our overall quality of life. His continuing efforts to instill in his students that problem-solving through scientific discovery can ultimately make the world a better place will leave an indisputable legacy of sacrifice and innovation. Dr. Abdel-Fattah's early life experiences in Africa gave him a unique perspective that is the cornerstone of his profound appreciation for the beauty of diversity in all its forms. This appreciation shapes his worldview and fosters a sense of inclusivity and tolerance, valuable qualities for an educator in an increasingly interconnected and diverse world.

Personal Statement

My Father "*Parents are the first teachers, and education begins at home.*" My mother was a full-time mother, and as part of caring for me, she taught me ethics, etiquette, and a number of foreign languages. My father was a devoted and beloved educator with an enthusiasm for education that impacted me beyond words. We grew up in Alexandria, Egypt. However, he taught in various countries throughout North, East, and West Africa. Growing up in Africa led to a deep appreciation for diversity, as the continent is incredibly rich in cultural, ethnic, linguistic, and geographical diversity. Furthermore, Africa is home to various religious and spiritual beliefs, including Christianity, Islam, and traditional African religions. Exposure to these diverse belief systems shaped my appreciation and understanding of different faiths and cultures. Also, my father's innate positivity and selflessness shaped my journey as a committed scholar, educator, mentor, spouse, and parent. While I relentlessly pursue my professional aspirations, my devotion to my family, colleagues, and friends is central to who I am personally now. This commitment has been unwavering over the past three decades and will remain so in the years to come.

The values learned in my early years are the foundation for my ethical conduct, a strong commitment to education, and a sense of social responsibility as a professor. These values influenced my teaching methods, research practices and interpersonal relationships with my students and the academic community. Therefore, being a professor is the best job in the world because it gives me the privilege to shape the minds and hearts of future leaders so that they can think critically in a world that faces challenging and uncertain times. I value the opportunity to guide students as they navigate their career paths, and I see how their choices can affect their future, the nation, and the world.

My primary objective is to seek excellence in everything I do. I try to pass this objective on to my students from day one. In my first lecture to first-year students, I explain that consistency is the key to success in chemistry. Putting off study until just before an exam leads to a series of all-night ordeals resulting in limited success and great anxiety a lesson that applies far beyond the classroom. Excellence during lectures involves various methods of student engagement, such as demonstrations, animations, and open discussion. Creative instruction is key to explaining complex concepts and solving problems.

I feel that a dedication to education runs in my DNA. Being the child of a dedicated educator certainly influenced my own values and aspirations in my educational journey. So, I am absolutely thrilled to help students who might be struggling with any topic. My office door is always open to students. I approach teaching upper-level chemistry classes with the same passion and dedication that I have for general chemistry, but with an even stronger focus on delving deep into the world of chemistry. In these upper-level classes, I have the opportunity to explore the fascinating world of chemistry research with my students. One exciting aspect is that I get to read their scientific papers based on cutting edge chemical journals. My task allows my students to dive into these papers, understand them, and then present these discoveries to the class. It's a challenging journey, but it's also incredibly rewarding. I can't wait to see all my students grow as researchers and scientists in this exciting endeavor.

My research efforts are centered on solving environmental issues by focusing on water and energy sustainability. However, my zeal lies in delving into root causes, testing hypotheses, and meticulously evaluating potential remedies. As a dedicated researcher and scientist, I emphasize discovering solutions for real-life problems. Integrating my research with students is a valuable educational experience that provides practical skills, fosters critical thinking, and prepares students for future academic and professional endeavors. It contributes to scientific knowledge and supports personal and intellectual growth. I am resolute in supporting my students and paying meticulous attention to the factors influencing their learning experiences. Applying critical thinking to problem-solving in all facets of life is the driving force behind my mission and guiding principles. Whether it's teaching, research, or mentorship, I firmly uphold

the belief that societal advancement is propelled by collaborative research, ushering in positive transformations and heightened efficiency. Through research, humanity gains the capacity to surmount challenges, make well-informed choices, and ideally forge a better future for the global community.

To me, the tally of awards, publications, and presentations merely scratches the surface when measuring the true impact of my connection with my students. Allow me to share a heartfelt anecdote from two years ago involving one of my former students. My wife and I had the privilege of attending his wedding, an invitation that deeply touched us. During the event, we had the honor of meeting both the bride's and groom's parents, and I was profoundly moved by the sentiments they shared. Their words conveyed a profound admiration and gratitude for the positive influence they believed I had on their child. I reassured them that the rewards I derive from working with students are as substantial to me as they are to the students themselves. Nevertheless, the groom's parents asserted on expressing their gratitude. They emphasized that they could see how his experience, especially the moments we shared during our travels, had instilled confidence in him and significantly contributed to his personal growth and maturity. To our delight, they were pleased that their son secured a fantastic job in the global leader company in nano manufacturing technology, a testament to the valuable experience and skills he had acquired under my guidance.

We also had the opportunity to meet the bride's father, a medical doctor. He shared that his son-in-law frequently discussed his research with him with great enthusiasm. As a professor, that type of feedback is priceless. Even more surprisingly, my wife and I encountered seven of my research members, including the best man. This event was a defining moment for me. I could see that my work is more about fostering a sense of community and a network among my students, beyond the confines of classrooms and research projects.

I believe the opportunity for students to present their research at conferences is not just important; it's essential. I'm truly passionate about creating an enriching learning environment that empowers students to connect, collaborate, and communicate effectively. These discussions in our classes are like sparks that ignite the flame of curiosity and growth. They're a platform where students can share their unique perspectives, work together, and develop those crucial communication skills that will shape their personal and professional journeys. For over two decades, I've been wholeheartedly dedicated to making students in Hampton Roads have opportunities to shine. I've been working tirelessly to organize conferences that are not only accessible but also affordable. By doing this, we've eliminated the barriers of expensive travel and participation fees. These local events have been instrumental in helping students build their resumes and sharpen their skills in presenting their research. It's incredibly rewarding to witness their growth and success. As an educator, I see my role as a reviewer for academic journals and proposals and my service on the editorial boards of academic journals as more than just responsibilities; they are opportunities to stay at the forefront of my field. By engaging with cutting-edge research and providing constructive feedback and insights, I contribute to the growth and direction of our scholarly community.

This integration of knowledge allows me to foster a vibrant and impactful educational environment that benefits both current and future generations of scholars and students. It's a privilege I cherish.

Through the seamless integration of teaching, service, and research, my overarching goal is to serve as a catalyst for the holistic development of my students and contribute to the advancement of CNU. By synthesizing these elements, I aim to inspire a culture of lifelong learning, critical thinking, and innovation, ultimately enhancing both the educational experience and the institution's broader impact on society. This type of impactful teaching and research is just as much a personal triumph as it is professional, knowing my late mother and father would have taken immense pride in witnessing it.

Abbreviated Curriculum Vitae, TAREK M. ABDEL-FATTAH, CNU

Education:

- **Ph. D.** (Inorganic/Materials Chemistry), Northeastern University, 1990-1994
- **M. Sc.** (Inorganic/Analytical Chemistry), Alexandria University, 1984-1988
- **B. Sc.** (Special Chemistry), Alexandria University, 1979-1983

Professional Appointments:

- **The Lawrence J. Sacks Endowed Professor, Department of Molecular Biology and Chemistry, Christopher Newport University (CNU): 2019-present.**
- **Professor of Chemistry, Associate Professor and Assistant Professor, Department of Molecular Biology and Chemistry (Previously, Biology, Chemistry and Environmental Science), Christopher Newport University (CNU): 1999-present.**
- **CNU Director of the Applied Research Center (ARC) at Thomas Jefferson National Accelerator Facility, 2006-present.**
- **Distinguished Visiting Research Professor** in the William and Mary Research Institute, **2017-2019**
- **Distinguished Professor, Department of Chemistry, Alexandria University, Egypt, 2017-Present**
- **Co-Director of Undergraduate Research Studies at Department of Biology, Chemistry and Environmental Science, CNU, 2001-2011**
- **Visiting Scholar, Department of Environmental Engineering, Michigan State University, 1998-1999.**
- **Research Associate, Aerospace and Catalyst Technology, AlliedSignal Inc., 1997-1998**
- **Research Associate, Center of Fundamental Materials Research, Department of Chemistry, Michigan State University, 1994-1997**

Awards:

- **Visiting Faculty to the DOE National Renewable Energy Laboratory (NREL) in Golden, Colorado, 2023**
- **Recipient of Outstanding Mentorship Award from the Chemistry Division of the Council of Undergraduate Research (CUR), 2021**
- **CNU College of Natural & Behavioral Sciences Award for Excellence in Teaching and Mentoring, 2019**
- **Alexandria University, Shield of Alexandria University for the Diamond Jubilee 2017**
- **CNU first Annual Faculty Award for Excellence in Scholarship, 2012**
- **NASA Langley Research Center, three times recipient Certificate of Recognition for different inventions, 2011, 2009 and 2008.**
- **Sigma Xi Research Society, Certificate of Recognition** presented by Tidewater Virginia Chapter, May 2005.
- **Three times recipient of NASA Faculty Fellowships** summers of **2004, 2001 and 2000.**
- **Christopher Newport University Teaching Fellow, 2002-2001**
- **NATO Travel Award, 1996.**
- **Inorganic Division Award for Research Excellence, Northeastern University, 1993.**
- **First Prize, Physical Sciences Division, American Association of Advancement of Science AAAS National Meeting, Boston, 1993 (More information can be found at *Science*, 260, P. 701, 1993)**

Selected Publications out of 140:

- "Screening study of Different Carbon Based Materials for Hydrogen Storage" Erik Biehler, Qui Quach and Tarek Abdel-Fattah, ECS Journal of Solid State Science and Technology, 12 081002 (2023)

- "Synthesis of a novel multifunctional organic–inorganic nanocomposite for metal ions and organic dye removals" Ahmed Elmekawy, Qui Quach and Tarek M. Abdel-Fattah, Scientific Report, 13, 12845 (2023).
- Quach, Qui, Erik Biehler, and Tarek M. Abdel-Fattah. "Synthesis of Copper Nanoparticles Supported over Graphene-like Material Composite as a Catalyst for Hydrogen Evolution" Journal of Composites Science, 7, 279 (2023).
- Biehler, Erik, Qui Quach, and Tarek M. Abdel-Fattah "Gold Nanoparticles AuNP Decorated on Fused Graphene-like Materials for Application in a Hydrogen Generation" Materials 16, 4779 (2023).
- Quach, Qui, Erik Biehler, and Tarek M. Abdel-Fattah "Synthesis of Palladium Nanoparticles Supported over Fused Graphene-like Material for Hydrogen Evolution Reaction" Catalysts 13, 1117 (2023).
- Biehler, Erik, Qui Quach, and Tarek M. Abdel-Fattah "Synthesis of Platinum Nanoparticles Supported on Fused Nanosized Carbon Spheres Derived from Sustainable Source for Application in a Hydrogen Generation Reaction" Nanomaterials 13, 1994 (2023).
- Biehler, Erik, Qui Quach, and Tarek M. Abdel-Fattah "Silver-Nanoparticle-Decorated Fused Carbon Sphere Composite as a Catalyst for Hydrogen Generation" Energies 16, 5053 (2023).

Services and Synergistic Activities:

- ***Establishing Chemistry Program*** at CNU. The chemistry major was re-established and certified by the American Chemical Society and moved to a new, state-of-the-art building (\$80 million). As part of the re-establishment of the chemistry program, Dr. Abdel-Fattah created new courses to contribute to the new curriculum, responding to demand in the field.
- ***Involvement in the Project Kaleidoscope (PKAL) for STEM higher education reform) and the Council on Undergraduate Research (CUR) CNU teams.*** Contributed to the establishment of the CNU Office of Undergraduate Research. Students who have conducted undergraduate research and presented at these conferences have been admitted to graduate, or medical schools, and many of them received scholarships and funding.
- ***Organizing students' conferences.*** Helping Hampton Road students to celebrate their research by organizing the Sigma Xi Fall poster sessions for the last 22 years and the annual Spring Paideia Conference (7 times out of the current 20). Dr. Abdel-Fattah played a key role in providing an opportunity for students to present their research during the Fall and the Spring in the Hampton Roads area. These cost-effective local opportunities eliminated many prohibitive travel costs and fees and were critical for students building their resumes and sharpening their research presentation skills.
- ***Hampton Roads Research Partnership (HRRP).*** Executive Committee member (12 meetings per year). The HRRP was a consortium of seven academic institutions, two federal research and technology laboratories, and a research institute in the Hampton Roads area of Virginia. The goal of the HRRP was increased regional prosperity through technology-based economic development.

Selected Other Experiences and professional memberships:

2006-2012	Executive Committee Member , Hampton Roads Research Partnership
2009-2011	Chairman , American Chemical Society, Hampton Roads section
2004-2005	President , Sigma Xi Scientific Society, Hampton Roads section
2003-2004	President-elect , Sigma Xi Scientific Society, Hampton Roads section
2000-Present	Executive Committee Member , American Chemical Society, Hampton Roads
2000-Present	Activity Chair & Executive Committee , Sigma Xi, Hampton Roads section
2008-Present	Member of Electrochemical Society
2023-Present	Editor , Scientific Report, Nature Portfolio Journal

Letters of Support (Excerpted)

Dr. Quentin Kidd, CNU Provost & Chief Academic Officer “Dr. Abdel-Fattah is, frankly, one of Christopher Newport’s most prolific scholars and student mentors. He was recently recognized as among the top 2% most-cited scientists in the world, and has been recognized and awarded for his mentorship of students by the Chemistry Division of the Council on Undergraduate Research. He is the prototype of a teaching-scholar: passionately devoted to his scholarship and deeply committed to working on that scholarship with his students.”

Dr. Essam El Kordi, President of Alamein International University (AIU) and Former President of Alexandria University (AU), Egypt "AU is one of the top three universities in Egypt. It is ranked among the top 500 universities in the world with over 200,000 students and 7,000 faculty members. Dr. Abdel-Fattah was recognized for his exceptional contribution to AU by receiving the Shield of AU during the Diamond Jubilee in December 2017, an exceptional ceremony at the prestigious Biblical of Alexandria. Dr. Abdel-Fattah has graciously supported AU faculty members to spend time in his labs. He has also hosted key AU administrators and mentored several Ph.D. students in the last 15 years. Dr. Abdel-Fattah's recognition arose from a selection committee of top-ranking professors from AU. In addition, Dr. Abdel-Fattah was appointed as a Distinguished Professor at the AU Department of Chemistry. In August 2016, I personally visited CNU to learn more about the CNU vision of liberal learning, especially since I am currently the President of AIU, a new university near Alexandria. During my visit, I was impressed with Dr. Abdel-Fattah's research laboratories at CNU and the Applied Research Center at Jefferson Lab. I have met Dr. Abdel-Fattah many times, and I have worked with him on different tasks and enjoyed his presentations designed to be understandable for undergraduates and specialists at the same time. During his visit to AIU in December 2022, he agreed to be a Distinguished Visiting Research Professor at AIU. He is incredibly pleasant to work with and always delivers his work efficiently and professionally. I strongly support his application to the Virginia Outstanding Faculty Awards."

Dr. Nicole Guajardo, CNU Dean, College of Natural and Behavioral Sciences: "Dr. Abdel-Fattah excels in teaching, research, and professional service. He exemplifies a teacher-scholar by engaging students inside and outside the classroom. In particular, Dr. Abdel-Fattah involves students in his research on nanoparticles, which is internationally recognized with numerous patents, presentations, and publications. He guides both undergraduate and graduate students in the scientific process from question development to publication. Students have been co-authors on numerous local and national conference presentations as well as publications. Dr. Abdel-Fattah also focuses his service in areas that bridge student learning with research in his work with the Undergraduate and Graduate Research Council and local chapters of Sigma Xi and the American Chemical Society. Within these contexts, he has organized and led student research conferences, providing opportunities for students to share their work with the professional community. Dr. Abdel-Fattah's commitment to and excellence in integrating teaching and research is exceptional. CNU is very grateful for his work."

Dr. Jeffrey Carney, CNU Department Chair: “Dr. Abdel-Fattah has a prolific research program with an international reputation for incorporating students into his work. His dedicated mentorship enhances his ability to publish peer-reviewed papers and present at international conferences. Not only does Dr. Abdel-Fattah mentor students, he is also a willing and valuable mentor to junior faculty within his department, his university, and beyond. His work to secure instrumentation and build a culture of research at the formation of our department, provided a strong foundation and has been essential to our current success as a great department for undergraduate research in the commonwealth.”

Dr. Lisa Webb, Professor and former CNU Department Chair: "Dr. Abdel-Fattah and I have been colleagues since 2004, and I served as his Department Chair from 2011 until 2018. It is no exaggeration to say that Tarek is an exceptional teacher/scholar. He brings students into his

research realm, providing them with one-on-one mentoring and a meaningful research experience. Dr. Abdel-Fattah was instrumental in establishing the chemistry program and the chemistry major at CNU. He was also a major driver in proposing and obtaining ACS approval of our B.S. Chemistry degree."

Dr. Sandeep Kumar, Professor and Department Chair, Department of Civil and Environmental Engineering Old Dominion University: "I have been working with Dr. Abdel-Fattah for more than ten years. We have co-authored peer-reviewed articles, co-advised graduate students, and submitted grant proposals. Through my frequent meetings, I have found Dr. Abdel-Fattah to be an outstanding researcher in chemistry, photovoltaics, and environmental engineering. He has contributed immensely to the literature through his high-impact publications. He has been highly collaborative and very motivated to venture into new research topics. Dr. Abdel-Fattah is a scholar of international repute. This is evident from his several co-authored publications with international researchers and the number of scholars from different countries visiting his lab each year. I have benefitted from our collaboration and look forward to continuing to work with him."

Dr. R. Roy Whitney, PhD, President, BNNT, LLC "Dr. Abdel-Fattah and I met as members of the Executive Committee for the Hampton Roads Research Partnership while I was CIO and CTO for DOE's Thomas Jefferson National Accelerator Facility, Jefferson Lab. I have been impressed with Professor Abdel-Fattah's work, when I retired from the Lab in 2014 and cofounded BNNT, LLC to work on building a business with boron nitride nanotubes, I kept in close contact with him. Within a few years, BNNT, LLC hired three of his students as they were exceptionally well trained and capable. Further, we have had long-term contracts with Professor Abdel-Fattah for work on characterization of the BNNT materials we manufacture and have provided BNNT material for his research. Professor Abdel-Fattah is an exceptional faculty member both in terms of research and the education of students."

Dr. Charles E. Reece, Former Superconducting Group Head, Thomas Jefferson National Accelerator Facility: "I was happy to have a productive collaboration with Prof. Abdel-Fattah engaging research on novel acid-free electrochemical polishing of niobium. We at Jefferson Lab are looking for environmentally friendly ways of producing clean, smooth niobium for high-performance particle accelerators for the US Department of Energy. Dr. Abdel-Fattah and his students enabled us to explore some novel uses of ionic liquids for this purpose. The interactions were very helpful and also helped launch the students into advanced studies. I am happy to support the recognition of Professor Abdel-Fattah's creative collaborative work and dedication to his students."

Dr. Qamar Shams, Late Senior Research Engineer, NASA Langley: "I have worked with Dr. Abdel-Fattah for more than 15 years. He is a highly qualified professional with expertise in teaching as well as in advanced chemistry research. Unlike many other specialized engineers and scientists, Dr. Abdel-Fattah has broad knowledge in areas outside of his fields and an excellent record of accomplishment in his fields of expertise. Dr. Abdel-Fattah is a hardworking person devoted to his work and determined to excel technically and seek a better way to get the job done effectively."

Dr. Larry Isaacs, Former Student: "As my master's thesis advisor at CNU, Dr. Abdel-Fattah mentored me with exceptional skill and academic rigor. He also served on my Ph.D. environmental engineering dissertation committee at ODU. He provided exceptional personal attention to my work, offered his laboratory for my use, prepared a specialized recipe of organosilicate nanoporous adsorbents for the removal of lead ions (saving me many months of experimentation), and thus enabled me to complete my doctorate in record time (3 years), and to be selected as the one and only water quality subject matter **expert scientist for the U.S. Air Force.**"