

Highlights in CHE



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Scientific Highlights at NSF and CHE

We rely on our PIs to communicate the value and impact of their work so that we can...



Justify our use of taxpayer dollars to congress and the public



Learn about and share the latest developments in the field



Better understand our portfolios



Engage the public with cool and fun chemistry stories

What we'll cover:

Brief overview of NSF Highlights and Communications Channels

- Communications at the CHE level
- Communications at the MPS and NSF level

What makes a good highlight and how to submit it

Time for Q&A



Highlights in CHE – CHE Website

The screenshot shows the CHE website homepage. On the left is a blue navigation sidebar with categories like Mathematical and Physical Sciences (MPS), Chemistry (CHE), and various programs. The main content area features a large banner for 'Promoting International Collaborations in Chemistry (CHE)' with a molecular structure background. Below the banner are sections for 'Announcements', 'News', 'Funding Opportunities', 'Upcoming Due Dates', and 'Popular Links'. Three grey arrows point to specific elements: one to the banner, one to a news item about biochemists, and one to the 'Chemistry Highlights' link in the Popular Links section.

Home > Research Areas > Mathematical and Physical Sci...

Email Print Share

Promoting International Collaborations in Chemistry (CHE)

Recognizing the importance of international collaborations in promoting scientific discoveries. We are pleased to announce an NSF-DFG Lead Agency Activity in areas of electrocatalysis and electrocatalysis. [READ MORE](#)

Announcements

[Remembering Dr. Carlos Murillo](#) [Read More >](#)

[CHE, MPS, and NSF Solicitations and Dear Colleague Letters](#) [Read More >](#)

[Division of Chemistry's Virtual Office Hour](#) [Read More >](#)

[See All >](#)

News

[Researchers create synthetic version of scarce compound found in poppies](#)
DECEMBER 16, 2021

[Biochemists turn glucose into hydrocarbons found in gasoline](#)
DECEMBER 14, 2021

[Low-cost iron catalyst produces less expensive pharmaceutical compounds](#)
DECEMBER 8, 2021

[See All >](#)

Funding Opportunities

[Training-based Workforce Development for Advanced Cyberinfrastructure](#)
(NSF 22-574) POSTED FEBRUARY 14, 2022

[EPSCoR Research Infrastructure Improvement \(RII\) Track-4: EPSCoR Research Fellows](#)
(NSF 22-573) POSTED FEBRUARY 11, 2022

[Pathways to Enable Open-Source Ecosystems](#)
(NSF 22-572) POSTED FEBRUARY 11, 2022

Upcoming Due Dates

[Understanding the Rules of Life: Emergent Networks](#)
(NSF 22-532) FULL PROPOSAL: MARCH 1, 2022

[Future of Work at the Human-Technology Frontier: Core Research](#)
(NSF 22-533) FULL PROPOSAL: MARCH 2, 2022

[NSF Small Business Innovation Research \(SBIR\)/ Small Business Technology Transfer \(STTD\)](#)

Popular Links

- [Career Opportunities](#)
- [Division of Chemistry's Office Hours](#)
- [CHE-COMM Listserv Email Subscription/Cancellation](#)
- [Quantum Information Science and Engineering Research at NSF](#)
- [CHE Panelist Travel Information and Instructions](#)
- [Become a Reviewer for NSF CHE](#)
- [Chemistry Highlights](#)

PI submitted Banner Images

Research News pieces on CHE funded research

Click here for PI submitted highlights

Highlights in CHE – CHE Website

Chemistry Highlights

Contents:

[Highlight Example](#)

[Recent Highlights](#)

[Highlight Instructions](#)

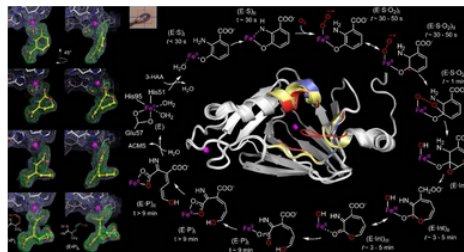
Each year NSF Program Directors are asked to provide descriptions of program accomplishments, or "Highlights", on the results of NSF awards. Reporting these outcomes of the NSF Chemistry investment advance the Division's mission by:

- Communicating the value of chemistry research advances and innovations to the public and to Congress
- Illustrating the NSF Chemistry portfolio to the public, industry, and government audiences
- Justifying our future budget requests
- Documenting outcomes of program investment, as required by the Government Performance and Results Act (GPRA)

- [Highlight Example](#)

Research Highlight funded by Chemistry of Life Processes (CLP) Program

Observing 3-hydroxyanthranilate-3,4-dioxygenase in action through a crystalline lens



The synthesis of quinolinic acid from tryptophan is a critical step in the *de novo* biosynthesis of nicotinamide adenine dinucleotide (NAD⁺) in mammals. **Dr. Aimin Liu and his group at U Texas-San Antonio** solved the missing piece of the information by investigating a dioxygenase that regulates quinolinic acid levels. The results from this project provide a comprehensive view of the dioxygenase mechanism by enabling step-by-step visualization of the catalytic cycle and the protein dynamics during catalysis. The results also reveal how the enzyme regulates metabolic pathway product

distributions, including the non-enzymatic product of biologically significant compounds. This knowledge will help to understand NAD⁺ hemostasis, immune regulation, and oxygen activation and utilization. This project was funded by the Chemistry of Life Processes (CLP) Program in the Division of Chemistry, initially (CHE-1623856 and CHE-1808637).

The Figure shows seven intermediate crystal structures of 3-hydroxyanthranilate-3,4-dioxygenase (HAO) that were determined during the *in crystallo* reaction; Figure credit: Aimin Liu and his group. This work was published in *PNAS*, 2020, 117, 19720-19730.

[Back to Top](#)

- [Recent Highlights](#)
- [Chemical Catalysis \(CAT\):](#)

Merging chemo-catalysis with bio-catalysis, in water - Lipschutz, Bruce/University of California, Santa Barbara - https://www.nsf.gov/awardsearch/showAward?AWD_ID=1566212

Click here for instructions and templates

Links to PI submitted highlights in each program

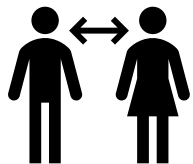
Highlights in CHE – Other Channels/Uses



Research highlights are included in our bi-weekly CHE-Comm listserv email



PI submitted highlights are used in conference or invited talks to highlight CHE funding opportunities and priorities



Highlights are shared amongst program directors, divisions and directorates to help keep us informed on the latest in the field

From Divisions to the Office of Legislative and Public Affairs (OLPA)

- CHE highlights are catalogued by the MPS directorate
- Comms liaisons in the MPS front office work with OLPA to provide content ideas, advise with press releases, and recommend noteworthy content
 - Internal Research Roundup, flagging major events/publications
- Sit on various working groups between OLPA and other comms specialists to share ideas

NSF Media Channels (managed by OLPA)

- NSF Science Zone – Apps, Radio and Roku Channel
- Social Media:
 - Facebook
 - Instagram
 - LinkedIn
 - Pinterest
 - Twitter
 - Youtube



- “Vodcasts”
 - 4 Awesome Discoveries you Probably Didn't Hear About
 - NSF Science Now
 - Science Nation
- Podcasts
 - The Discovery Files
- Science Matters Blog
- Multimedia gallery

How to Submit a Highlight



Are you about to publish a transformative paper? Talk with your university press office!



- Press Releases can attract OLPA's attention for Research News pieces or vodcasts.



- Your press office can help you develop compelling images and tell a story in an easy-to-understand way.
- NSF program officers can provide a quote about your work



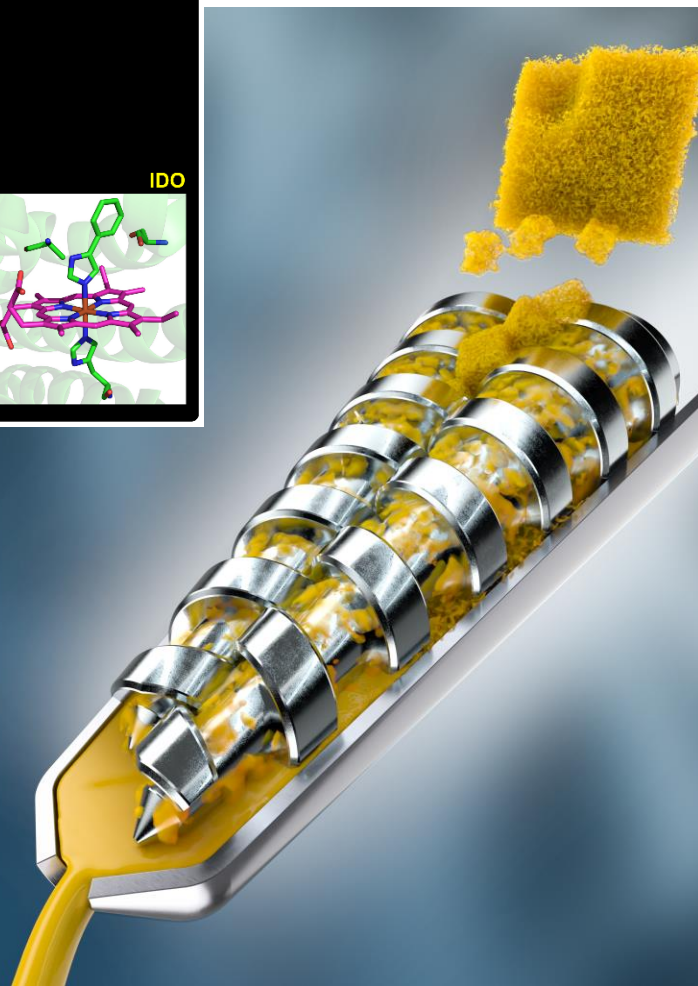
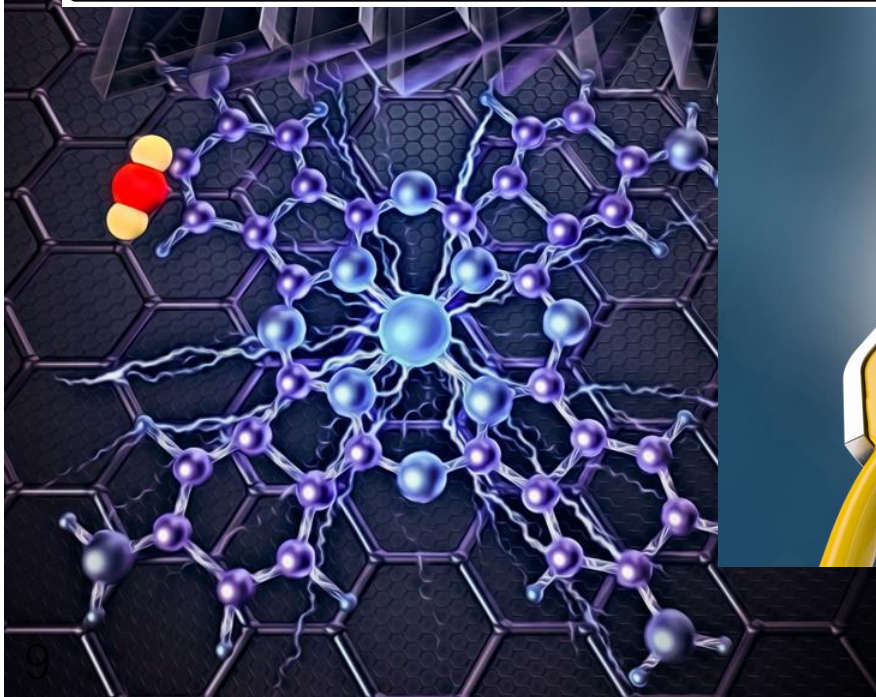
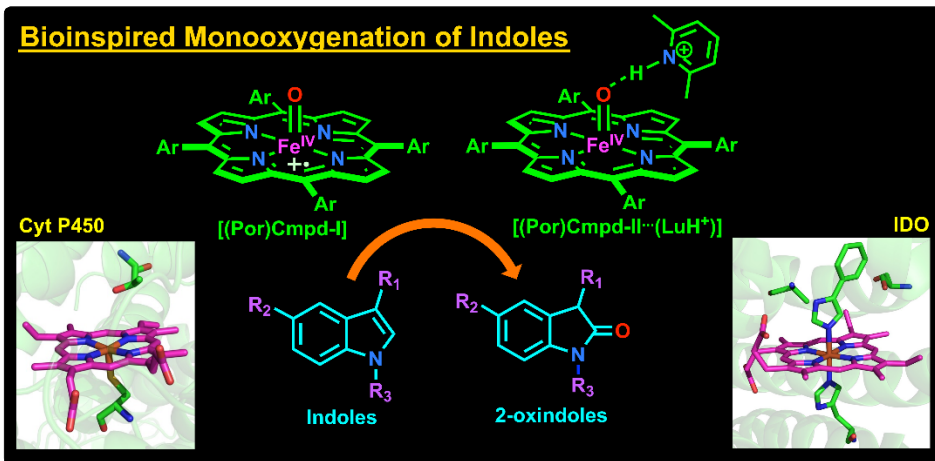
Don't have a press office you can work with? Submit a highlight to the CHE highlights inbox.

- Go to the CHE Highlights web site for good examples and instructions



Email your Program Director

What Makes a Good Highlight? Images



Include clear and explanatory images, figures or illustrations.

- Artistic rendering of process
- Table-of-contents like figure

If a figure or images has been published elsewhere, NSF may **not** be able to share it more broadly.

- One exception is for open access publications

What Makes a Good Highlight? Text and Information

- Provide context for your work
 - What's the challenge or knowledge gap your work addresses and why is it important?
 - How does your work impact the field? How might “regular” people experience the work in the future (lower prices, less pollution, etc.)?
- Try to write for a college educated audience – could a biologist understand? An economist?
- Include an award number
- Include a link or doi for your publication(s)

