

Summer Research by SWOSU Students and Dr. Tim Hubin Made Possible by Four Grants

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Research studies with Dr. Tim Hubin (left) are underway this summer at Southwestern Oklahoma State University with students (from left) Donnie Jones, Elk City; Shay Klassen, Ponca City; Dustin Davilla, Anadarko; Ashlie Walker, Tulsa (Charles Page); and Anthony Shircliff, Duncan.

Dr. Tim Hubin, associate professor in the Department of Chemistry and Physics at Southwestern Oklahoma State University, is mentoring several undergraduate chemistry students this summer with research experiences made possible by funding from four grants.

Donnie Jones of Elk City, Anthony Shircliff of Duncan, Ashlie Walker of Tulsa (Charles Page), Shay Klassen of Ponca City and Dustin Davilla of Anadarko are working with Hubin on the Weatherford campus of SWOSU.

Hubin is working with the five students through a research experience based on his project titled "Transition Metal Complex Dual CXCR4/CCR5 Antagonists."

CXCR4 and CCR5 are the most studied chemokine receptors due to their roles in a broad range of diseases, including cancer, arthritis and HIV. Chemokines are small, soluble, signaling proteins that many cell types are attracted to, and chemokine receptors are cell surface proteins that bind chemokines and initiate cell movement.

During this study, Hubin will attempt to systematically synthesize and evaluate potential CXCR5/CCR5 dual antagonists. Since the area of dual chemokine receptor antagonism is in its infancy, any discoveries made during this study could be transformative.

The mentorship of Jones and Shircliff is funded by the National Institutes of Health through an Oklahoma IDeA Network of Biomedical Research Excellence faculty mini-grant of \$34,598, which was awarded to Hubin. INBRE is a network of two lead and twelve collaborating institutions in Oklahoma that carry out biomedical research pursuant to a grant awarded to the University of Oklahoma Health Sciences Center.

The Oklahoma Louis Stokes Alliance for Minority Participation (OK-LSAMP) is funding the mentorship of Walker, made possible by a \$15,600 grant. OK-LSAMP is a consortium of Oklahoma colleges and universities working together to develop programs aimed at increasing the number of students from under-represented populations who receive degrees in science, math, engineering and technology.

An award to Hubin in the amount of \$2,200 is mentoring Klassen. The funding is provided from the Oklahoma State Regents for Higher Education as part of the Oklahoma INBRE Undergraduate Summer Research Program grant. The sole purpose of this grant is to fund faculty members striving to serve as mentors to undergraduate students.

Hubin also received a grant from the National Institutes of Health in the amount of \$1,000 to mentor Davilla, a chemistry student from Redlands Community College. These funds are provided as part of the Bridges to the Baccalaureate Program at East Central University. This program was created to encourage underrepresented students transitioning from junior colleges to universities and beyond to consider careers in biomedical science fields.

Hubin has mentored a number of undergraduate students during his time at SWOSU. With the help of eight external research grants (not including the grants described), he has mentored 30 undergraduate chemistry students at SWOSU plus several students with different majors. His students have presented at several national and regional meetings.