

Oklahoma ACS Family Night
Friday 23 September 2016
NUCLEAR SCIENCE
Fact and Fiction in Star Trek

Jeff C. Bryan
Department of Chemistry and Biochemistry
University of Wisconsin-La Crosse



Much of the Star Trek universe can be understood or disputed based on our current understanding of nuclear chemistry and physics. This presentation will examine "future" technologies such as photon torpedoes, transporters, and holodecks using contemporary nuclear science. We'll also look at antimatter as a power source/fuel, medical imaging and the possibility of superheavy elements. Finally, we'll boldly go where few scientists have gone before to try to understand what dilithium really is and what it does in a starship. Even if you're not a trekkie (or a trekker), don't worry, the context of each topic will be provided through video clips from the shows and movies. Engage!

Oklahoma Baptist University, Shawnee, OK <http://www.okbu.edu>

6:00 pm Social Hour & Picnic Wood Science Building
lawn games [indoor/outdoor]—volleyball & croquet

7:30 pm Presentation Wood Science Building
large lecture hall



OBU map
QR code

Menu

Hamburgers & hotdogs
potato chips
pickles
cookies
soft drinks

Cost

\$10 members
\$5 students
\$3 children under 12

RSVP Deadline

Wednesday, Sep 21st, 5 pm
Contact Nathan Malmberg
nathan.malmberg@okbu.edu
405-585-4126
[indicate # of adults & # children]

Dr. Jeff C. Bryan Biographical Sketch

Jeff C. Bryan was born in Minnesota and raised in California, and believes that his odd childhood mixture of Jell-O™ salad and reticence in a free and open society have caused his various personality quirks. He earned an A.B. in chemistry from the University of California, Berkeley with emphasis on organic chemistry and Scandinavian studies. He earned his Ph.D. from the University of Washington studying inorganic chemistry under the supervision of Jim Mayer. His thesis presented a new chemical reaction, the oxidative addition of multiple bonds to low-valent tungsten. He then spent a year of postdoctoral work with Warren Roper at Auckland University investigating iridium-carbon multiple bonds.

He spent five years at Los Alamos National Laboratory, initially as a postdoctoral fellow, then as a staff member. Under the supervision of Al Sattelberger, he initiated a modestly successful research program synthesizing new compounds of technetium. He then spent eight years at Oak Ridge National Laboratory as a crystallographer in Bruce Moyer's chemical

separations group. The major group project during that time was development of a process to separate ¹³⁷Cs from defense wastes.

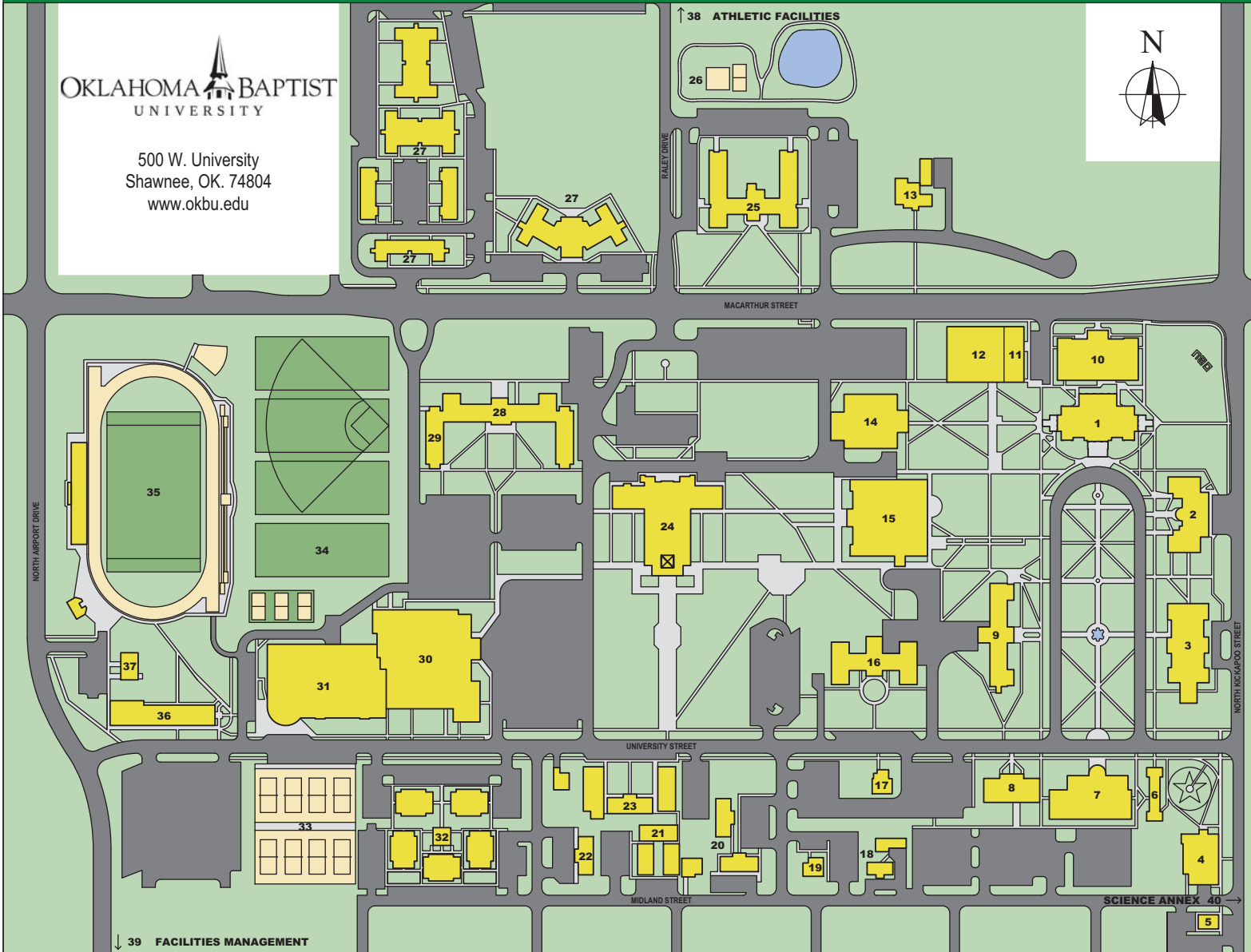
He joined the chemistry faculty of the University of Wisconsin-La Crosse in 2002, where, despite his best efforts, he has been promoted to full professor. He currently teaches nuclear and general chemistry courses. His scholarship focuses on making nuclear science more accessible to students with limited science and math backgrounds. As part of this effort, he has authored a textbook titled Introduction to Nuclear Science, and coauthored a lab manual titled Experiments in Nuclear Science.

He is an engaging and entertaining speaker. He has given over 50 invited presentations at a variety of conferences and meetings including Gordon Conferences and National ACS meetings, and currently specializes in speaking to various groups on nuclear science.

OKLAHOMA BAPTIST UNIVERSITY CAMPUS MAP



500 W. University
Shawnee, OK. 74804
www.okbu.edu



CAMPUS LEGEND

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|-----------------------------------|-------------------------------------|-----------------------------------|--|
| 1 SHAWNEE HALL | 14 SARKEYS TELECOMMUNICATION CENTER | 25 TAYLOR RESIDENCE CENTER | 38 ATHLETIC FACILITIES - BASEBALL/SOFTBALL/
SOCCER/LACROSSE FIELDS AND
COATES BASEBALL/SOFTBALL BUILDING |
| 2 THURMOND HALL | 15 GEIGER CENTER | 26 MILLENNIUM PARK | 39 EYER BUILDING - FACILITIES MANAGEMENT |
| 3 W.P. WOOD SCIENCE BUILDING | 16 KERR RESIDENCE HALL | 27 OBU RESIDENCE VILLAGE | 40 SCIENCE ANNEX |
| 4 ART DEPARTMENT | 17 STUBBLEFIELD CHAPEL | 28 AGE RESIDENCE CENTER | |
| 5 ART ANNEX | 18 MIDLAND APARTMENTS | 29 ATHLETIC DEPARTMENT | |
| 6 FORD MUSIC HALL | 19 CAMPUS POLICE | 30 NOBLE COMPLEX | |
| 7 BAILEY BUSINESS CENTER | 20 BURNS/COBBS APARTMENTS | 31 RECREATION AND WELLNESS CENTER | |
| 8 MONTGOMERY HALL | 21 DEVEREAUX EAST APARTMENTS | 32 WEST UNIVERSITY APARTMENTS | |
| 9 WMU RESIDENCE CENTER | 22 DEVEREAUX WEST APARTMENTS | 33 TENNIS COURTS | |
| 10 JANE E. & NICK K. STAVROS HALL | 23 HOWARD RESIDENCE COMPLEX | 34 INTRAMURAL FIELDS | |
| 11 OWENS HALL | 24 RALEY CHAPEL | 35 HURT MEMORIAL TRACK COMPLEX | |
| 12 MABEE LEARNING CENTER | POTTER AUDITORIUM (UPPER LEVEL) | 36 J.P. CHANCE TRACK BUILDING | |
| 13 CARGILL ALUMNI CENTER | YARBOROUGH AUDITORIUM (LOWER LEVEL) | 37 MATHENA CENTER | |