A. HIGHLIGHTS

Describe the School’s accomplishments for the past fiscal year.

- Over 60 new and continued funding awards to School of Science and Technology faculty, staff, and students. Among the new awards:
  - Learning by Making: STEM Success for Mendocino County, Department of Education Investing in Innovation (i3) program, Susan Wandling and L. Cominsky, 1/1/14 – 12/31/18, $2,960,335 plus $447,500 in required matching funds, November 2013.
  - EC3: Earth-Centered Communication for Cyberinfrastructure Challenges of field data collection, management, and integration, Mookerjee, M., NSF, $299,329
  - California Office of Statewide Health Planning and Development (OSHPD) Song Brown Grant for Family Nurse Practitioner/Physician Assistant programs: $328,000, to support efforts to expand the capacity of registered nurse education programs within California, Wilkosz, M.E..

- School of Science and Technology faculty and students published over 80 papers and gave over 60 professional presentations in 2013-14.

- Programs in the Nursing Department (undergraduate BSN and graduate FNP) successfully reaccredited for 8 years (the maximum period) by the Accreditation Commission for Education in Nursing (ACEN).

- School of Science and Technology faculty, staff and students are active in numerous enrichment, service, and outreach activities including:
  - A “SSU Celebration of Women in Science” during Women’s History Month (March 2014) with speaker events in all SST departments; also co-sponsored speaker (Provost Sue Rosser, SFSU) on unconscious bias in science (Oct 2013).
  - Expanded the SST Summer High School Internship Program (SHIP) from 10 to 15 student interns partnered with SST faculty mentors.
  - SSU hosted several important meetings including (1) the annual meeting of the American Physical Society (APS) California-Nevada section in November 2013. This was the first time SSU hosted this meeting, (2) the Mathematical Association of America Section Meeting (February 2014), and (3) the Expanding Your Horizons Conference (March 2014).
  - Outreach events at the North Bay Discovery Day, elementary school visit for Chemistry Week, Piner High visit, and Napa Valley College MESA Day.

- School of Science faculty and staff continue to advance their teaching, research and service activities in support of student success.
  - Implemented Sophomore Year Programming for SST majors including student resource website and expanded outreach activities.
  - Extended curricular innovations in freshman learning communities (Biology, BioChemistry/Chemistry/STEM), sophomore Biology curriculum, the entire Mathematics & Statistics program, astronomy online modules, and upper-division GE courses.
  - Continued MESA (Mathematics, Engineering, Science, Achievement) program despite ongoing fiscal challenges.
• Science and Technology continues to build partnerships with local business, industry, government, education and others to advance mutual interests.
  o Established SSU’s Engineering Industry Advisory Board.
  o Nearing final approval of SSU-Piner High School STEM Pathway encouraging students to explore STEM fields in high school and to come to SSU as a STEM major.
  o Accepted 40-acre donation to extend Fairfield Osborn Preserve to 451 acres.

B. SUMMARY OF ACCOMPLISHMENTS

What is the single most important accomplishment of the School this year?

The SSU Science Symposium held on April 30, 2014 in the Student Center Ballroom. There were 55 posters representing the research and scholarship efforts of 130 students in collaboration with 26 different faculty mentors from Biology, Chemistry, Computer Science, Engineering, ENSP, Geography, Geology, Kinesiology, Liberal Studies, Math & Statistics, and Physics & Astronomy. Fifteen posters were part of the SSU WATERS Collaborative. SST, the Sonoma County Water Agency (WATERS), and NSF supported the Symposium.

LIST OF CATEGORIZED ACCOMPLISHMENTS BY DEPARTMENT
(PUBLICATIONS, PRESENTATIONS, NEW FUNDING, CONTINUED FUNDING, PROFESSIONAL DEVELOPMENT ACTIVITIES, COLLABORATIONS, MAJOR SERVICE CONTRIBUTIONS, OTHER)

C. PUBLICATIONS

1. Biology


2. Computer Science


3. Engineering Science


c. Haider Khaleel, ChitravanSingh, Miniaturized Antenna Array with Low Correlation for Telemedicine and Body Area Networks Applications.


4. Kinesiology


5. Mathematics & Statistics


d. Multivariable Calculus, 6th edition (W. McCallum et. al), Wiley 2013 (B. Lahme, co-author)

e. Calculus, 6th edition (D. Hughes-Hallett et. al), Wiley 2013 (B. Lahme, co-author)


g. Multivariable Calculus, 6th edition (W. McCallum et. al), Wiley 2013 (J. Morris, co-author)
| i. | Classroom Activities to accompany Calculus, Single and Multivariable, (D. Hughes-Hallett et al), Wiley 2013 (available on the book companion webpage; J. Morris, co-author & coordinator) |

6. Nursing


7. Physics & Astronomy

| l. | “Search for gravitational radiation from intermediate mass black hole binaries in data from the second LIGO-Virgo joint science run” Aasi, J. and 850 coauthors including L. Cominsky, Physical Review D, Volume 89, Issue 12, id.122003 (2014) |
| m. | “Impulsive and Long Duration High-energy Gamma-Ray Emission from the Very Bright 2012

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pg. 6
D. PRESENTATIONS

1. Biology


f. Rank, N. Jan 2014, Austin Texas. Two student presentations at the Society for Integrative
and Comparative Zoology. One poster presentation by Kevin Roberts, graduate student. Another poster presentation by Jordan Sayre, an undergraduate.


2. Chemistry

a. Lillig, J., SSU Faculty Research Expo, April 2014, with 2 undergraduates, “Determination of the IC50s for Wild-Type and Fragmented Antimicrobial Peptides.”

3. Computer Science

d. Ravikumar, B. What is a proof?, presented in the Math Department Colloquium, Fall 2013.
f. Rivoire, S., Advisor to student poster competition entrant: Classification of Supercomputing Applications by Power Consumption, Jolie Nazor. Consortium for Computing Sciences in Colleges Southwestern Regional Conference (CCSC-SW) student poster session

g. Rivoire, S. SSU Faculty Expo, April 2014, poster with 5 undergraduates, “Classification of Supercomputing Applications by Power Consumption.”

4. Engineering Science

a. Farahmand, F., SSU Research Expo, April 2014, with 1 graduate and 2 undergraduate students, “Developing High-Precision Real-Time Movement Monitoring System for Treatment Evaluation of Parkinson’s Disease.”

5. Geology

b. Smith, N. SSU Faculty Research Expo, April 2014 with 2 undergraduates, “Reconstructing the
6. **Kinesiology**


c. Sokmen, B. Faculty Research Expo, April 2, 2014 with Wesley Martin, Sabrina Hrabe, Lauren Fryer, Kate McFarland, Olivia Colombo, Dang Le, Alyssa Bernat, Sylvia Lewis (SSU Students), and Daniel Grubb (SHIP intern) “Effects of Caffeine Intake on Metabolism, Muscular Strength, and Cycling Performance During Intermittent Cycling.”

7. **Mathematics & Statistics**

a. Lahme, B. "Applying Lessons from Professional Development Work to Pre-service Content Courses,” with B. Ford, Joint Mathematics Meetings, Baltimore, January 2014 (invited talk)

b. Lahme, B. “Common Core State Standards in Math: What can College Students and Faculty learn from them,” Math Colloquium, University of New Mexico, November 2013 (invited talk)


e. Lahme, B. "Examples of mathematicians' work in pre-service teacher education, "Mathematicians and School Mathematics Education: A Pan-American Workshop, Banff International Research Station for Mathematical Innovation, January 2014


8. **Nursing**

a. Wilkosz, M.E., CENIC Annual Conference: Creating Access One Program At a Time 3/12/14


e. Kindy, D. Pathways to Nursing, requested by the University Advising Center. March 2014.

f. Roberts, D. Jewish Community Free Clinic presentations on customer service


9. **Physics & Astronomy**

War and Peace seminar series, Sonoma State University (September 23, 2013)
c. Keynote talk at AAPT/NCN section at Carondelet High School, Concord, (November 16, 2013)
e. Cominsky, L. Washington, DC (2014) “Blazars and Gamma Rays” invited talk to Amateur astronomers at the Winter AAS meeting (Jan. 7, 2014). This talk was part of a special day-long series of talks designed for amateur astronomers and undergraduates.
f. Cominsky, L. Mountain View, CA (2014) “Rockets, Balloons and Satellites” invited talk at the California Space Grant Consortium meeting at NASA Ames Research Center (March 28, 2014)
i. Cominsky, L. Santa Rosa, CA (2014) “Blazing Galaxies, Exploding Stars and Monstrous Black Holes: High Energy Visions of the Universe” invited talk at the Oakmont Symposium (May 8, 2014). This talk drew about 500 residents of Oakmont and was video recorded.
j. Cominsky, L. and EPO staff, SSU Faculty Research Expo, April 2014, *Education and Public Outreach at SSU*.

h. Qualls, J. Faculty Research Expo, S^3: STEPPing Up STEM at SSU.

i. Severson, S. Poster Presentation at 2014 SPIE Astronomical Instrumentation Conference held in Montreal Canada. Anecdote: Groups from around the world, including Korea, Japan, France and the United States were impressed at the ability to turn undergraduate students into productive members of a project to build a cutting-edge astronomical adaptive optics system that removes the blurring "twinkle" from starlight.

j. Severson, S. Faculty Research Expo, April 2, 2014. *Assembly and First Light of the KAPAO Adaptive Optics System* in collaboration with one undergraduate.

k. Shi, H. Faculty Research Expo, April 2, 2014 with one undergraduate “Growth and Characterization of Al-doped ZnO via Electrochemical Deposition: An Exploration of Optoelectronic Applications.”

l. Targett, T. Research talk at the University of Edinburgh, presenting work from papers in progress.

m. Targett, T. Presentation to Blizzard Entertainment staff at the 15,000-stong “Blizzcon” games convention regarding the use of video games in the public understanding of science.

n. Qualls, J. SENCER Regional Meeting – Presentation “A Watershed Year: A Freshman Year Experience in STEM”

o. Qualls, J. American Physics Society: California/Nevada Meeting "Coexistence of Spin Density Wave and Superconducting States in Bechgaard Salts"

p. Qualls, J. Integrating Critical Thinking CSU East Bay Seminar "The Integrated STEM Experience"

q. Qualls, J. NSF Annual STEP Meeting "S3- Stepping up Stem at SSU"
### E. NEW FUNDING AWARDED IN 2013-14

#### 1. Biology

<table>
<thead>
<tr>
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<tr>
<td>b.</td>
<td>Cohen, M. Provost Undergraduate Research Fund. $1000. “Nutrient Mining by Plant-degrading Bacteria.”</td>
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<td>c.</td>
<td>Cohen, M. WATERS funding, “Development of Microbial Specific Genetic Markers to Track Sources of Fecal Pollution,” Spring 2014</td>
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<td>e.</td>
<td>2014 – 2017 California Ocean Science Trust $450,000. The Ecological State of Northern California's Sandy Beaches and Surf Zones: A Baseline Characterization for MPA Assessment. PI: Nielsen, KJ (Sonoma State University); co-PIs: Milligan, T (Humboldt State University); Dugan, JE (University of California, Santa Barbara; Craig, S (Humboldt State University); Laucci, R. (Smith River Rancheria).</td>
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<tr>
<td>i.</td>
<td>Girman, Derek. Provost Undergraduate Research Fund. $1000. “Phenology and Microgeography of Herpetofauna in Response to Climate Effects”</td>
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<td>j.</td>
<td>Rank, N. Provost Undergraduate Research Fund. $1000. Study of insects on bay laurel trees.</td>
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</table>

#### 2. Computer Science

| a. | Rivoire, S. Classifying Application-Level Power Consumption Patterns, PI. Award amount: $7,000 in student stipends and travel support Computing Research Association, Collaborative Research Experiences for Undergraduates program 2013-14. |

#### 3. Chemistry

| a. | Fukuto, J., Lares, M., Lillig, J. and Works, M. GMC Academic Integration Grant, $10,000, to support two events: Chemistry Wine Lecture and Nobel Laureate Lecture. |
| b. | Lillig, J. Provost Undergraduate Research Fund. $1000. “Investigation of Key Molecular Features in the Targeting of Toxicity of Anti-Listerial Proteins” |
| c. | Farmer, S. Provost Undergraduate Research Fund. $1000. “Investigation of Fluorescent Molecules from Gymnopilus Croceoluteus” |
| d. | Perri, M. WATERS funding, “Pesticide Detection in the Copeland Creek,” Spring 2014 |
| e. | Perri, M. Provost Undergraduate Research Fund. $1000. “Pesticide Analysis of Local Water and Flora.” |
| f. | Works, C. Provost Undergraduate Research Fund. $1000. “Isolation and Characterization of a Novel 15.6 kDa Protein Isolated from Bovine Liver.” |

#### 4. Engineering Science

| a. | Integration of Music and Audio Principles within Electrical Engineering and Physics Freshmen and Sophomore Courses, GMC Academic Integration Grant. PI: H. Khaleel, co-PIs: L. Cominsky and B. Ravikumar, $13,000. |
Transparent Antenna for Flexible Self-Powered Wireless Systems.”


e. Farahmand, F. Provost Undergraduate Research Fund. $1000. “ Sensor Network Development at the Fairfield Osborn Preserve.”

5. Geology


b. Dr. Michael Smith of the Geology Department is currently working with $86,000 in funding until 2016 from the National Science Foundation to pursue a research project exploring "Paleogeographic record of contractional to extensional tectonics in the Cordilleran hinterland, Nevada." The project seeks to investigate the sedimentary record of the processes that formed and destroyed an Andes-like mountainous plateau and system of high altitude lakes in the location of present day Nevada.

c. A student research group of Dr. Mookerjee’s just secured funding to continue working on the “Geological Squeezebox for Modeling Plastic Strains Associated with Fault Asperities” from an industry donor/partner.

6. Kinesiology


d. Morimoto, L. Provost Undergraduate Research Fund. $1000. “ The Impact of Backward Walking on Hamstring Flexibility”

7. Nursing

a. Wilkosz, M.E. OSHPD Song Brown Grant for FNP/PA programs: $134,000, to support efforts to expand the capacity of registered nurse education programs within California. Also continuing Song Brown funding approved (see below).

b. Kindy, D. Socrative Method Classroom Implementation: SSU Professional Development & IT: $500.00

8. Physics & Astronomy

a. July 2013, Promising Course Redesign for Astro 100, Chancellor’s Office, L. Cominsky, Principal Investigator, $40,268 for AY13-14.

b. August 2013, Fermi Education and Public Outreach (extended mission), NASA, L. Cominsky, Principal Investigator, $366,685 through 9/30/14


d. Rockets and CubeSats in the STEM Pipeline, California Space Grant, L. Cominsky, Principal Investigator, $9975 in January 2014.
e. Cominsky, L. Provost Undergraduate Research Fund. $1000. “CubeSat Project at SSU”

f. Cominsky, L. and Jones, M. GMC Academic Integration Grant, $18,450, for advanced acoustics equipment for precision measurements of Concert Hall and classrooms.


i. Shi, H. Provost Undergraduate Research Fund. $1000. “Proposal to Build and Test an Optical System for Applications in Medical Physics and Astronomy”


9. Preserves

a. Luke, C. (SSU Preserves) and Draper, P. (Arts & Humanities), GMC Academic Integration Grant, $10,000, for SSUWorks, a cross-disciplinary project in sustainability.

F. CONTINUED FUNDING

1. Biology


b. 2011 – 2014 National Science Foundation $1,119,999

c. Collaborative Research: The role of calcifying algae as a determinant of rocky intertidal macrophyte community structure at a meta-ecosystem scale. Pls: Menge, BA (Oregon State University) & Nielsen, KJ (Sonoma State University); co-Pls: Hacker, S & Chan, F (Oregon State University)

d. 2011 – 2016 National Oceanographic and Atmospheric Administration $1,800,000 ($146,000 to Nielsen/SSU) in 2011-2014 (additional years pending) CeNCOOS: Integrating marine observations to inform decision makers and the general public. Pls: Primary contact: Leslie Rosenfeld, Director (CeNCOOS @MBARI); (co-investigators in alphabetic order): Barbara Block (Hopkins Marine Lab), Mark Carr (PISCO, UC Santa Cruz), Yi Chao (Jet Propulsion Lab/UCLA), Francisco Chavez (MBARI), Jim Doyle (Naval Research Laboratory) Chris Edwards (UC Santa Cruz) Oliver Fringer (Stanford), Toby Garfield (San Francisco State / Romberg Tiburon Center), Raph Kejla (UC Santa Cruz), Rik Kvitve (CSUMB), John Largier (UC Davis / Bodega Marine Lab), Steven Le (Science Applications International Corporation), Erika McPhee-Shaw (Moss Landing Marine Laboratory), Mark Moline (California Polytechnic Institute), Andy Moore (UC Santa Cruz), Hanna Nervins (Marine Wildlife Veterinary Care & Research Center), Karina Nielsen (Sonoma State), Jeff Paduan (Naval Postgraduate School), Frank Shaugnessy (Humboldt State University), Igor Shulman (Naval Research Laboratory), Bill Sydeman (Farallones Institute)

e. 2011 – 2014 California Ocean Science Trust $290,000

f. Sandy beach ecosystems: Baseline characterization and evaluation of monitoring metrics for MPAs along the south coast of California Pl: Dugan, JE (University of California, Santa Barbara; co-Pls: Page, H (University of California, Santa Barbara); Nielsen, KJ (Sonoma State University); Burseki, J (Channel Islands National Marine Sanctuary)

g. Lin, J. CSUPERB New Investigator Grant (2013-2014) entitled “Elucidating the Role of Peroxiredoxin 1 in B Cell Signal Transduction”. ($15,000)
a. Rivoire, S. Support for Power Efficiency Task, PI. Award amount: $233,496.19 <-- approx. $135K in new funding this academic year. US Department of Energy, subcontract with Oak Ridge National Laboratory.

3. Mathematics & Statistics


4. Nursing

a. Wilkosz, M.E. OSHPD Song Brown Grant for FNP/PA programs: $184,000 (continuing for department).

5. Physics & Astronomy

a. January 2012, S4: Small Satellites for Secondary Students, NASA EPOESS, L. Cominsky Principal Investigator. $549,308 for three years. - ($182,282 - this is year 3)  
b. January 2012, Fermi and Swift Public Relations, NASA, L. Cominsky, Principal Investigator, - $60K this year  
c. May 2012, XMM-Newton Education and Public Outreach (extended mission), NASA, L. Cominsky, Principal Investigator, $40K this year  
d. May 2012, Swift Education and Public Outreach (extended mission), NASA, L. Cominsky, Principal Investigator, $80K this year  
e. Severson, S. "KAPAO Adaptive Optics for Table Mountain 1-meter telescope," National Science Foundation. September 30 2013 saw the end of the $637,138 National Science Foundation grant (SSU sub-award: $118,345).  

6. School of Science and Technology

a. September 2011, S3: STEPping up STEM at SSU, NSF-STEP, L. Stauffer Principal Investigator, Co-Pls: L. Cominsky, J. Qualls, N. Rank, C. Luke, Requested $994,826 for five years, funded to date $794,837 for four years. (This is year 3).

G. PROFESSIONAL DEVELOPMENT ACTIVITIES

1. Biology

a. Cohen, M. Veterans on Campus course, April 15, 2014.  
b. Rank, N. Participated in a workshop for CSU faculty held at San Jose State University about how to gain additional funding for NSF. October 2013.  
c. Rank, N. Conducted an external review of the Biological Sciences program at San Jose State University. February 2014.  
d. Rank, N. Participated in a social media workshop about how to use Facebook in professional settings. January 2014.

2. Chemistry

a. Lillig, J. and Works, C. Members of pilot faculty cohort for multi-campus, NSF-funded "Reinventing the College Lecture" project to introduce active learning pedagogies to the STEM classroom.

3. Computer Science

a. Rivoire, S. and Kooshesh, A. Members of pilot faculty cohort for multi-campus, NSF-funded "Reinventing the College Lecture" project to introduce active learning pedagogies to the STEM classroom.
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<tr>
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<th>Engineering Science</th>
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<tr>
<td>4.</td>
<td>a. Khaleel, H. Participated in the Summer Tech Institute held at Sonoma State University.</td>
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<th></th>
<th>Kinesiology</th>
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<td>5.</td>
<td>a. Sokmen, B. Faculty Writing group, Fall 2013/Spring 2014.</td>
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<td>c. Sokmen, B. Human Performance Laboratory Fee Based Program (participated as program director).</td>
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<th>Mathematics &amp; Statistics</th>
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<tr>
<td></td>
<td>b. Lahme, B. Organized 2 day workshop for statistics instructors at SSU</td>
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<td>c. Lahme, B. Wacom pad trial of 4 faculty.</td>
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<td>e. Morris, J. PiMuEpsilon Conference, Sonoma State University, October 2013</td>
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<th>Nursing</th>
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<tr>
<td></td>
<td>b. Wilkosz, M.E. QOLT (Quality Online Learning Technology) - CSU Level Recognition</td>
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<td></td>
<td>c. Kindy, D. Moodle Workshops</td>
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<td>d. Kindy, D. Psychiatric Medications Update</td>
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<td></td>
<td>e. Roberts, D. 15 Units of nursing continuing education including: Pediatric Case management, Review of HIPAA Regulations</td>
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<td>f. Roberts, D. Faculty Development lead in Blackboard Collaborate Invite an expert to class.</td>
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<td>g. Roberts, D. Incorporating guest faculty into on-line class work using the technology of Blackboard Collaborate</td>
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<th>Physics &amp; Astronomy</th>
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<td>8.</td>
<td>a. Cominsky, L. Teacher training in July 2013 for the S4 project in Palmdale, CA. See photos and information on our website: <a href="http://s4.sonoma.edu">http://s4.sonoma.edu</a>. This project teaches middle and high school teachers how to build electronic payloads that are launched on high-powered rockets and/or balloons to acquire experimental data, which are then analyzed.</td>
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<td>b. Cominsky, L. Teacher training in June 2014 for i3-Learning by Making project in Mendocino. See galaxy.sonoma.edu/i3/ for more details.</td>
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<td>c. Severson, S. Attended both the American Astronomical Society and SPIE Optical Society meetings.</td>
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<td></td>
<td>d. Severson, S. Sabbatical, Fall 2013. The sabbatical allowed me to complete the KAPAO astronomical instrument, achieve innovative and remarkable imaging performance, and to develop remote observing capabilities that will revolutionize Sonoma State University students’ access to high-resolution astronomical imaging and cutting-edge research projects.</td>
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<tr>
<td></td>
<td>e. Shi, H. Members of pilot faculty cohort for multi-campus, NSF-funded “Reinventing the College Lecture” project to introduce active learning pedagogies to the STEM classroom.</td>
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<td>f. Targett, T. “What Physicists Do” presentation now most viewed of any SSU faculty presentation on YouTube.</td>
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<td>g. Targett, T. Attended Moodle training session.</td>
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<td>h. Targett, T. Attended opening event of Piner High school planetarium as a “special guest”</td>
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<td>Teaching, Scholarship, and/or Service Collaborations</td>
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<td>---------------------------------------------------</td>
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<tr>
<td>1.</td>
<td>Biology</td>
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<td>b.</td>
<td>Nielsen, K. A Watershed Year. Lecture, Discussion, and Laboratory Instruction and Curriculum Development for a new, NSF-funded ‘freshman year experience’ for STEM majors; the course integrates critical thinking, philosophy of science, pre-calculus math and biology; co-taught with Dr. J. Qualls [Physics &amp; Astronomy], Dr. Brigitte Lahme [Mathematics &amp; Statistics], Dr. Martha Shott [Mathematics &amp; Statistics] and Dr. Nathan Rank [Biology].</td>
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<td>c.</td>
<td>Rank, N. Worked closely with =Science 120 team to run the 2013-2014 version of the course.</td>
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<td>d.</td>
<td>Rank, N. Worked with Martha Shott and Jeremy Qualls on a sustainability grant.</td>
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<td>e.</td>
<td>Rank, N. Member of two SSU Preserves governing committees and advisory committee and was a member of the Step program internal advisory committee.</td>
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<td>f.</td>
<td>Rank, N. Organized the launch of the Biology Facebook page and instrumental in maintaining it.</td>
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<td>2.</td>
<td>Engineering Science</td>
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<td>3.</td>
<td>Geology</td>
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<tr>
<td>a.</td>
<td>Mookerjee, M. Continuing a relatively new collaboration with Kathakali Bhattacharyya (Indian Institute of Science Education and Research, Kolkata) analyzing crystallographic fabrics that develop as a result of deformation associated with the Himalayan orogeny (i.e., mountain-building event).</td>
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<td>b.</td>
<td>Mookerjee, M. Research collaboration with Sarah Roeske at UC Davis looking at deformation along the Denali Fault in Alaska.</td>
</tr>
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<td>c.</td>
<td>Mookerjee, M. Participated in the NSF’s “EarthCube All Hands Meeting” this June. The EarthCube All-Hands Meeting is bringing together project institutions, partners, collaborators, and scientists from across the globe to share their progress and experience with EarthCube thus far.</td>
</tr>
<tr>
<td>d.</td>
<td>Mookerjee, M. Jointly taught a workshop on “Strain Programs for Teaching and Research” with Paul Karabinos (Williams College) and Fred Vollmer (SUNY New Paltz) at this summer’s Structural Geology and Tectonics Forum (SGTF).</td>
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<td>e.</td>
<td>Mookerjee, M. Co-chaired the session on “Quantitative Approaches towards Structural Analysis” with Saad Haq (Purdue University) at SGTF.</td>
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<td>f.</td>
<td>Mookerjee, M. Will be co-chairing a session at AGU on “Cyberinfrastructure for field work: data standards, computer applications, instrumentation and best practices” with Marshall Ma (RPI).</td>
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<tr>
<td>4.</td>
<td>Kinesiology</td>
</tr>
<tr>
<td>a.</td>
<td>Sokmen, B. SST Science Symposium, April 30, 2014 at the Student Center (Students presented their IRA funded undergraduate research grant projects). Ferdinand Lawrence Buot III and Lauren Fry, “The effects of engaging in self-paced gardening on oral glucose tolerance test and metabolic demand on healthy males and females.”</td>
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</table>
5. Mathematics & Statistics

a. Lahme, B. Content developer for IllustrativeMathematics.org a website that provides high quality materials to help K-12 teachers transition to the new Common Core State Standards in Mathematics.
b. Lahme, B. Math Ed Collaboration with Megan Taylor and Kathy Morris, various projects
c. Morris, J. Calculus Textbook author group
d. Morris, J. Summer GRE Preparation Group (2013): Over the summer, I helped a group of math majors prepare for the GRE Subject Test in mathematics.
e. Morris, J. Friday Problem Group (2013): For the spring semester of 2013, I organized a problem-solving group in real analysis that involved undergraduate students at Sonoma State and graduate students at San Francisco State University. Students took turns presenting problems and working together to solve them. The group met for 2 hours every Friday during the semester.
f. Morris, J. Independent Study on Hausdorff Dimension, Summer 2014

6. Nursing

a. Wilkosz, M.E. Northern California CSU DNP Program - Project Chair
b. Wilkosz, M.E. Santa Rosa Community Health Center FNP Residency Program
c. Kindy, D. Fall and Spring 2013-2014: New Course Design, Nursing 490, The Sexual Imperative: History, Media, Culture, and Imagination; in conjunction with Alanna Brogan – online. Area C2 to meet the needs of our post-licensure students - successfully passed University committees.
d. Roberts, D. Jewish Community Free Clinic: ongoing work as clinical director
e. Roberts, D. Council on Aging Vice Chair and Board Member
f. Roberts, D. YMCA Diabetes project consultant
g. Roberts, D. and Nursing Department. Transition into Practice: Nurse Residency Program with Sutter Health of Santa Rosa and St Joseph's Health of Santa Rosa and Petaluma administered through the School of Extended and International Education. This new nurse residency program places newly graduated nurses in a 280-hour clinical placement with a 1-on-1 preceptor. All 32 students were placed and hired following program completion.
h. Roberts, D. Seawolf Decision Day

7. Physics & Astronomy

a. Cominsky, L. Supported Tom Targett who taught the experimental sections of Astro 100 and Astro 350 during the spring semester 2014, as part of the CSU Promising Course Redesign Project
b. Cominsky, L. Launch of T-LogoQube, SSU's first satellite, launched into orbit in November
2013. The tiny satellite, measuring only 5-by-5-by-15 centimeters, consists of a radio and a sensor that reads the earth’s magnetic field. Collaboration between SSU students and students at Morehouse State University in Kentucky.

c. Severson, S. Co-PI SSU Noyce Scholarship Program
d. Severson, S. Mentor, SHIP Summer HS Internship Program
e. Severson, S. Faculty Advisor, Capstone research
f. Severson, S. Faculty Advisor, Two student first author papers, American Astronomical Society meeting, Washington, D.C.
g. Targett, T. Aided the NASA/ESO group in their development of the “Big Ideas in Cosmology” online learning course. Implemented the first use of the material as a flipped classroom in the Spring 2014 semester, and as a fully online course during Summer 2014.
h. Qualls, J. SCI 120—involved many faculty across SST and utilized Goldridge RCD as a community partner as well as SSU Preserves.

8. SSU Preserves

a. SSU is hosting a Sonoma County Youth Ecology Corps (SCYEC) group on campus and at SSU’s Fairfield Osborn Preserve. SCYEC employs at-risk youth, providing training in environmental stewardship, ecosystem processes, and job skills. (http://youthecologycorps.org/)

I. MAJOR SERVICE CONTRIBUTIONS (e.g., committee memberships, organization of special events, new program design, new course design)

1. Biology

a. Cohen, M. Department of Biology, Education/Development/Outreach Committee member
b. Cohen, M. Department of Biology, pre-Clinical Laboratory Sciences advisor
c. Cohen, M. Student Affairs Committee, School of Science and Technology representative
d. Cohen, M. Campus Planning Committee, member
e. Cohen, M. University Enterprises Board, member
f. Cohen, M. California State University International Programs applicant evaluation committee, member
g. Cohen, M. CSUPERB Faculty Consensus Group, member
h. Nielsen, K. Co-Chair Elect, California Ocean Protection Council Science Advisory Team; http://www.opc.ca.gov/about/science-advisory-team/
i. Nielsen, K. Governing Council, Central & Northern California Ocean Observing System; http://www.cencoos.org/sections/about/gov_council.shtml
k. Nielsen, K. Scientific Working Group, Research in Marine Protected Areas, California Department of Fish and Wildlife and California Ocean Protection Council Science Advisory Team
m. Nielsen, K. Policy Committee, Physiological Society of America
n. Nielsen, K. Internal Advisory Group, S3: Stepping up STEM at Sonoma State University, NSF STEM Talent Expansion Program (STEP)
o. Rank, N. SSU Science Symposium judge.
p. Rank, N. Member of EPC and chaired the SST Curriculum Committee last year.
q. Rank, N. Ex officio member of all Biology department committees except the RTP committee.
r. Rank, N. Grant panel member at NSF in April 2014
<table>
<thead>
<tr>
<th>2. Computer Science</th>
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<tbody>
<tr>
<td>a. Rivoire, S. Academic Senate, Graduation Initiative Group, University Professional Development Subcommittee, Web Advisory Committee, SST Professional Development Committee (chair)</td>
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<tr>
<td>b. Rivoire, S. SHIP program coordinator</td>
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<td>c. Rivoire, S. Name reader at commencement</td>
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<tr>
<td>d. Rivoire, S. Expanding Your Horizons 2014: Web chair &amp; facilities committee co-chair</td>
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<td>e. Rivoire, S. Volunteer scientist, MESA Schools Program “Dinner with a Scientist”, 2014</td>
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<th>3. Engineering Science</th>
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<tr>
<td>b. Khaleel, H. Engineering Science Department Recruitment and Retention Task Force, Faculty Advisor/ Engineering Science Club, Committee Member/ Professional Development Committee (School Level), Committee Member/ Engineering Science Department Curriculum Development Committee.</td>
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<th>4. Geology</th>
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<tbody>
<tr>
<td>a. Mookerjee, M. Elected Vice President of the Structural Geology and Tectonics Forum’s Board of Advisors which consists of a two-year terms as VP, followed by a two-year terms as President, followed by a two-year term as Past-President.</td>
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<th>5. Kinesiology</th>
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<tr>
<td>a. Sokmen, B. Scholarship Subcommittee, Institutional Review Board Committee, Graduate Studies Subcommittee, Graduate Equity Fellowship Selection Committee, Health Advisory Committee, Graduate Advisor, KIN Club Advisor, Rock Climbing Advisor.</td>
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<tr>
<td>c. Sokmen, B. Volunteered to teach KIN 101 Physical Activity Class Spring 2014.</td>
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<th>6. Mathematics &amp; Statistics</th>
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<tr>
<td>a. Mathematics and Statistics, tenure-track faculty: completed significant redesign of upper division major course structure, moving to four-unit courses, removing one concentration, streamlining offerings.</td>
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<tr>
<td>b. Brannen, S. Elected to the Program Oversight Committee for the statewide CSU-LSAMP (Louis Stokes Alliance for Minority Participation) program for the new 5-year phase.</td>
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<td>c. Cabaniss, S. Continues to lead efforts to increase diversity on campus including the series of “Women Celebrating Science” speaking events during Women’s History Month 2014.</td>
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<tr>
<td>d. Cabaniss, S. Member of the Academic Senate Diversity Subcommittee and the School of Science and Technology representative to the President’s Diversity Council.</td>
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<tr>
<td>e. Lahme, B. APC member, Math Department Chair</td>
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<tr>
<td>f. Governor of Golden Section</td>
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<td>g. Lahme, B. EYH facilities coordinator</td>
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<tr>
<td>h. Lahme, B. MAA section meeting organizer</td>
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<tr>
<td>i. Morris, J. Math Department Curriculum Revision Committee, Math Department web page maintenance, Math Department Community office hour coordinator, Math Lecturer observations, Calculus coordinator</td>
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<tr>
<td>k. Chan, J.B. Fund raising committee chair for the Mathematics and Statistics Department</td>
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<th>7. Nursing</th>
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<tr>
<td>a. Nursing Department – development and approval of a new GE course Nursing 490 “The</td>
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### J. OTHER IMPORTANT ACCOMPLISHMENTS

#### 1. Biology


e. Nielsen, K. Article in popular press about research project: February 1, 2014. Creating a
5. Mathematics & Statistics
   a. Ford, B. $5.5 million grant applications submitted. $500,000 not funded; $5 million still under consideration by NSF.
   b. Ford, B. Recipient of SSU’s 2013 Bernie and Estelle Goldstein Award for Excellence in Scholarship.
   c. Math & Statistics hosted the annual conference of the Mathematical Association of America’s Golden Section in February 2014. Over 200 faculty, students, and community members from Northern California and Nevada attended.
   d. Lahme, B. Chaired 3 search committees and was part of 2 more search committees
   e. Morris, J. SSU’s Excellence in Teaching Award, 2014
   f. Chan, J.B. Raised funds and helped to install the Pacific War Monument on SSU’s Holocaust

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2. Chemistry
   a. Farmer, S. is a collaborative contributor to the ChemWiki, an online resource supporting chemistry curriculum. This NSF-funded project is led by Dr. Delmar Larsen of UC Davis and includes contributors from UC Davis, Contra Costa Community College, Diablo Valley College, Hope College, and the University of Minnesota, Morris.

3. Computer Science
   c. Rivoire, S. Member, IEEE Publication Products and Services Committee
   d. CS Department held its first alumni reunion in November 2013. About 180 people attended.

4. Geology
   a. Mookerjee, M. This summer Dr. Mookerjee will be leading a field trip with a combination of 35 Earth Scientists and Computer Scientists to Yosemite and Owens Valley to discuss cyberinfrastructure as a part of the National Science Foundation initiative, EarthCube.
   b. Mookerjee, M. Four of Dr. Mookerjee’s student research groups will be submitting abstracts to national meetings this summer (GSA in Vancouver and AGU in San Francisco).
   c. Murphy, M. Martha Murphy passed the State of California’s Professional Geologist licensure examination; the designation of being a Professional Geologist is the standard certification for working geologists in California. Ms. Murphy joins the Geology Department’s David Bero and Thomas Williams in this statewide certification.
   d. Geology successfully executed a fee-for-service agreement with Great Bear providing experience for students and valuable rock-cutting services for Great Bear. The partnership resulted in $24K to support essential department initiatives.

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f. Rank, N. Recruitment of Sean Place to the Biology Department
   g. The work of SSU Biology graduate student, Julie Byrne, is mentioned in an NBC News posting (http://www.nbcnews.com/science/environment/social-media-could-help-save-species-verge-extinction-n117401) on May 29, 2014. The focus of the article is on the use of social media and citizen scientists to help track birds, plants and other species in everyday life. Julie is using iNaturalist in her study of the impact of climate change on lizards.
and Genocides Memorial Grove in Fall, 2013.

### 6. Nursing

- Nursing programs (undergraduate and graduate) successfully reaccredited for (max) 8 years by the Accreditation Commission for Education in Nursing (ACEN). Accreditation included extensive self-study, extended site visits, and response.
- Family Nurse Practitioner Program (FNP) women’s clinic and well physicals established at the Jewish Community Free Clinic
- Kindy, D. Awarded "College Educator of the Year" by Positive Images
- Roberts, D. Reviews: Beth Richardson, Pediatric Success, A Q&A Review Applying Critical Thinking to Test Taking, 2nd edition
- Roberts, D. Judge: Community Youth Service Awards program at The Press Democrat.
- Roberts, D. Unfunded but submitted: Proposal Certificate Transition into Practice Nurse Residency in response to the RFP from the CSU Commission on the Extended University
- Expanded clinical partnership with the Jewish Community Free Clinic to serve new larger facility in Santa Rosa.

### 7. Physics & Astronomy

- Cominsky, L. Service Activities outside SSU: Nominating Committee, HEAD 2013, Chair, Local Organizing Committee, Far West Section of APS annual meeting, November 2013, Past Chair, California Section of the American Physical Society, 2013-2014
- Kevin Zack won two awards - the Steven Chu award (first place) for his presentation at the APS-California-Nevada sectional meeting in Nov. 2013, and second place at the SST Science Symposium in May 2014 for his poster about T-LogoQube and the S4 project. The TLQ project was also written up in Insights.
- SSU hosted the annual meeting of the APS California-Nevada section in November 2013.
- Severson, S. PI of grant application for PhysTEC, Physics Teacher Education Coalition teacher training program. This application is currently pending. Grant requests a total of $29,889 over 3 years to establish a robust pipeline of Physics majors that become high school Physics teachers.
- Targett, T. Excellent (all above 4 of 5) student reviews from all courses given at SSU.
- Qualls, J. Advanced efforts in both water harvesting and new synthesis techniques for organic superconductors.
- Stephan Jackowski (student of Hongtao Shi) won second place last November for the Steven Chu Undergraduate Research Award. This award is given annually for outstanding presentations at the annual meeting of the American Physical Society Far West Section. His work focused on fabricating Al-doped Zinc Oxide thin films for optoelectronic applications.
- Hunter Mills (student of Hongtao Shi) won the Best Posters Award (first place) at the Science Symposium. His work focused on simulating an optical system for medical and astronomy applications.
8. SSU Preserves
   a. Received 40-acre donation from William and Joan Roth and their children (~$600K); expands Fairfield Osborn Preserve to 450 acres.

9. School – Science & Technology
   a. NSF STEP (STEM Talent Expansion Program) grant continued in its 3rd year; PI Stauffer, Co-PIs Cominsky, Qualls, Rank, and Luke; funding to support continuing students including advising, tutoring and research internships (3 AY positions; 2 summer 2013 positions, 3 summer 2014 positions).
   b. Donation to support Summer High School Internship Program (SHIP) through 2015, $33,000.
   c. Soundscape Project, collaboration of SSU Preserves, SST Engineering and Physics, art, dance, and others, a multimedia performance in Nov/Dec 2013 held in Person Theatre and in Weill Hall.
   d. School of Science and Technology along with SSU Academic Affairs/Professional Development are collaborating on an NSF WIDER (Widening Implementation and Demonstration of Evidence-Based Reforms) grant with the UC Berkeley Lawrence Hall of Science. From the proposal “The goal of Redefining the College Lecture project is to improve university STEM faculty’s instructional practice through a blended professional learning program that nurtures a learning community, provides continuous support, and is situated within their everyday work.” Five SST faculty (Shi (Physics), Rivoire (CS), Kooshesh (CS), Works (Chemistry), Lillig (Chemistry)) participated in face-to-face and online (synchronous and asynchronous) training, workshops, and discussion this past spring and are re-designing their lecture classes to be piloted and assessed this fall. A second cohort of SST faculty (Severson (Physics), Targett (Physics), Cohen (Biology), Lin (Biology)) will participate beginning in early fall with the task of redesigning a lecture course that they will teach in Spring 2015. I serve as the Chair of this grant’s advisory board and am actively involved in reviewing modules and providing program feedback. Ann Steckel, SSU’s Faculty Center, has been an essential partner in this project and a valuable resource to the faculty participants. Planning for the roll out of SSU’s involvement as a field test site in Fall 2015 will begin this summer with Ann Steckel exploring the import of the training materials from bCourse/Canvas into Moodle.