A. HIGHLIGHTS

- Science & Technology faculty published over 65 scholarly works and gave over 50 professional presentations.
- Science & Technology has 43 active sponsored program projects totaling nearly $15M including 19 new awards (2014-15) totaling $1.67M. Of the continuing awards, the FERMI award to the SSU Education and Public Outreach group led by Lynn Cominsky has been ongoing since 2000 with total funding of $8,209,203.
- SSU student team won the 2015 CSUPERB Innovation Corps (iCorps) student competition. The cross-disciplinary team of engineering, kinesiology, and finance students won the system-wide challenge after presenting their device to quantify tremors associated with Parkinson’s disease.
- Science & Technology faculty continue as leaders in their fields as evidenced by the distinction of Dan Crocker (Biology) and Matt James (Geology) as Academy Fellows for the California Academy of Sciences and the recognition of Suzanne Rivoire (Computer Science) and Lynn Cominsky (Physics & Astronomy) as recipients of the 2015 SSU Excellence in Scholarship awards.
- Science & Technology in collaboration with the SSU WATERS project held the Third Annual SSU Science Symposium in May 2015. The program included sixty-five posters representing the scholarly work of over 120 students in the School of Science & Technology (Biology, Chemistry, Computer Science, Engineering, Geology, Kinesiology, Mathematics & Statistics, Nursing and Physics & Astronomy). Over 30 students from Anthropology, Environmental Studies, Geography, Liberal Studies and Philosophy also presented. See [www.sonoma.edu/scitech/symposium/](http://www.sonoma.edu/scitech/symposium/).
- The Summer 2015 Transition to Practice Program grew to 109 nurse residents in 8 regional hospitals (Marin General, Kaiser Santa Rosa, Kaiser San Rafael, Sutter Novato, Sutter Santa Rosa, Queen of the Valley Napa, Memorial Santa Rosa, and Petaluma Valley).
- Science & Technology faculty participated in extensive professional development activities including the NSF WIDER “Redefining the College Lecture” project in partnership with the UC Berkeley Lawrence Hall of Science.
- Science & Technology continued science outreach efforts including participation in the North Bay Science Discovery Day, Sonoma County Expanding Your Horizons Conference, and the Sonoma County Science Fair.
- The Piner High – SSU Science & Technology STEM Certificate program implemented.
- The Science & Tech Peer Advisor program was put in place in the Darwin Lobby with undergraduate advisors assisting students on scheduling, course, and degree planning.
- The highly regarded Science & Technology’s Summer High School Internship Program (SHIP) 2015 is in its 8th year. See [www.sonoma.edu/scitech/hs/](http://www.sonoma.edu/scitech/hs/) for details.
- Science & Technology is the academic partner on the new Craft Beer Appreciation Certificate program in partnership with Lagunitas and the School of Extended and International Education.
- Expanded instructional capacity by converting Carson Hall 1 to classroom laboratory equipped to support general introductory chemistry courses.

B. PUBLICATIONS

1. Biology
requisites for Ocean Living (in press).


2. Chemistry

| d. | “Chemistry and Biochemistry Learning Community for First Year Students” J. Lillig, J. Wiltse, J.
3. **Computer Science**

http://lj.libraryjournal.com/2015/05/opinion/peer-to-peer-review/why-internet-searches-are-not-enough-peer-to-peer-review/


4. **Engineering Science**


5. **Geology**


d. Mookerjee, M., Vieira, D., Chan, M., Gil, Y., Goodwin, C., Shipley, T., Tikoff, B., 2014. We Need to Talk: Facilitating communication between field-based geoscience and cyberinfrastructure communities. GSAToday, in press (due out in Nov.).

6. **Kinesiology**


7. **Mathematics & Statistics**


8. **Nursing**


9. Physics & Astronomy


e. “First all-sky search for continuous gravitational waves from unknown sources in binary systems” Aasi, J. and 851 co-authors including L. Cominsky, Phys. Rev. D., Volume 90, Issue 6, id.062010

f. “Narrow-band search of continuous gravitational-wave signals from Crab and Vela pulsars in Virgo VSR4 data” Aasi, J. and 898 co-authors including L. Cominsky, Physical Review D, Volume 91, Issue 2, id.022004


h. “Directed Search for gravitational waves from Scorpius X-1 with initial LIGO data” Aasi, J. and 901 co-authors including L. Cominsky, Physical Review D, Volume 91, Issue 6, id.062008 (2015)


n. Investigating Student Ideas About the Fate of the Universe” Conlon, Mallory; Coble, Kimberly A.; Bailey, Janelle M.; Cominsky, L. R., American Astronomical Society, AAS Meeting #225, #327.01, 2015AAS...22532701C

o. “Preliminary Evaluation of a New Cosmology Curriculum” Coble, Kimberly A.; Martin,
Dominique; Hayes, Patrycia; Targett, Tom; Bailey, Janelle M.; Cominsky, L. R. American Astronomical Society, AAS Meeting #225, #245.04, 2015AAS...22524504C


C. PRESENTATIONS

1. Biology


e. Variation in central metabolic and stress genes along a climatic gradient in montane populations of a leaf beetle. Roberts, K., Deyarmin, J., Mardulyn, P.; Wheat, C.; Dahlhoff, E.; Rank, N. CSU Program in Education and Research in Biotechnology. 27th Symposium, January 2015.


2. Chemistry

a. “Quantification of Carbon Monoxide from a Photochemical Carbon Monoxide Releasing Molecule (PhotoCORM) using a Binuclear Rhodium (II) Compound” Kim Trevino and C. Works, Faculty Expo Sonoma State University, 2015.

3. Computer Science
4. Geology


b. James, M., Collecting Evolution: The 1905-06 Galápagos Expedition from the California Academy of Sciences, annual meeting American Association for the Advancement of Science, Pacific Division, June 15-17, 2015, at San Francisco State University.


d. James, M., Stanford University, Department of Anthropology, Guest lecturer, Anthropology 178/278, at invitation of Professor William H. Durham, November 4, 2014.


5. Kinesiology

a. Sokmen, B. Invited Colloquium Speaker: “Caffeine Use In Sports: Considerations For The Athlete” 2014 Annual Meeting of the Southwest Chapter of the American College of Sports Medicine, Costa Mesa, CA.

b. Sokmen, B. Faculty Research Exposition March 2015: Repetitive Occupational Lifting Is Impaired in a Hot Environment: Implications for Altered Work-Rest Cycles


e. Carlton, E. Presented on a panel regarding research applications to lifetime physical activity participation at the Western Society for Physical Education for College Women conference.
Specifically addressed motivation research and applications.

6. **Mathematics & Statistics**

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7. **Nursing**

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<tbody>
<tr>
<td>a.</td>
<td>Ritter, B. Hypertension and Hyperlipidemia. SSU FNP program.</td>
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<td>c.</td>
<td>Roberts, D. Introduction to Precepting, Marin General Hospital, June 19, 2015 for nurses.</td>
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<td>d.</td>
<td>Roberts, D. HIPAA Regulations, Jewish Community Free Clinic, April 29 2015, for healthcare providers.</td>
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<td>e.</td>
<td>Roberts, D. Care of the Pediatric Patient in a Clinical Setting, Jewish Community Free Clinic, Feb 17, 2015 for nurses.</td>
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<td>f.</td>
<td>Roberts, D. SSU Diversity Conference speaker, April 18, 2015 for students/faculty.</td>
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<td>g.</td>
<td>Wolcott, K. Cicely Saunders Institute for Palliative Care, King's College London: Evidence Update. &quot;Palliative Care in the ICU and Moral Distress of Nurses&quot; June 2015</td>
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<td>h.</td>
<td>Wolcott, K. International Nursing Ethics Conference (Scheduled for July 17-18), Surrey, UK.</td>
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<td>i.</td>
<td>Kelly, MD. October 2014 Presented paper on Mentoring Students in Best Coaching Practices to Reduce Hospital Readmissions. 7th Annual Mentoring Conference, Albuquerque, NM: University of New Mexico</td>
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<td>j.</td>
<td>Kelly, MD. April 2015 Presented Warming Up the Cyber Classroom: Come on in Have a Seat! 8th Annual Emerging Technologies for Online Learning International Symposium, Dallas, Texas.</td>
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<td>k.</td>
<td>Kelly, MD. Presented 5 Continuing Education courses on aspects of safe transitions of care after hospitalization for 80 Health Professionals in Sonoma County and 50 SSU Nursing Students</td>
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8. **Physics & Astronomy**

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<tr>
<td>a.</td>
<td>Cominsky, L. Internet lecture “Learning by Making: Rockets, Satellites and More” invited talk at the AAPT-AOK meeting, Arkansas (September 26, 2014)</td>
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<td>b.</td>
<td>Cominsky, L. Mt. Tamalpais, CA (2014) “NuSTAR’s Sharper View of the Universe” invited lecture in the Mt. Tamalpais Astronomy program series (September 27, 2014)</td>
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<td>g.</td>
<td>Severson, S. “Adaptive Optics in the Lab and at the Telescope” - Faculty Research Exposition as part of the SSU Research Symposium.</td>
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<td>h.</td>
<td>Qualls, J. Humboldt State University “A Watershed Year in STEM Education” Dec 12th - Invited talk on our work with S3 grant and SCI120 course.</td>
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<td>i.</td>
<td>Qualls, J. CSU STEM Summit “Integrated STEM Experience” (April 8, 2015)- A historic meeting of all CSU campuses to address STEM needs and advances.</td>
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D. **NEW FUNDING AWARDED IN 2014-15**

SSU Sponsored Programs reports that as of July 1, 2015, Science & Tech PIs have 43 active projects totaling nearly $15M in state and federal funding. Of these, there were 19 new awards in 2014-15 totaling $1.67M.

1. **SSU (Campus-Based) Awards**
   a. Provost’s Undergraduate Research Awards – $18,000 awarded to Science & Technology faculty in 8 different departments to fund 20 different student research projects.
   b. IRA Undergraduate Research Grants - $7,500 awarded to Science & Technology faculty to support supplies and travel for 15 student projects sponsored by Science & Technology faculty.
   c. SSU RSCAP Mini-grants –$20,254 awarded to six Science & Technology faculty to support student research assistants, supplies and equipment.
   d. SSU’s Center for Environmental Inquiry and the Watershed Academics to Enhance Regional Sustainability (WATERS) awarded funding to six projects in Science & Technology. WATERS is a collaborative endeavor between SSU and the Sonoma County Water Agency (SCWA) to undertake projects that enhance watershed management and academic training of students. See the SSU Science Symposium program at [http://www.sonoma.edu/scitech/symposium/](http://www.sonoma.edu/scitech/symposium/) for a complete listing.

2. **Biology**
   b. Keller, M.F. WATERS project funding for one student to complete research on a restoration project completed by the Sonoma County Water Agency, $502,50. "Colgan Creek Insects and Creek Restoration Outreach"
   e. Cohen, M. SSU RSCAP Mini-grant $4217, supplies and student assistant funding.
   g. Cushman, J. (Hall), Point Reyes Tule Elk, $77,000.
   h. Kerry Wininger. PG&E award for studying insect abundance and relationships to Sudden Oak Death establishment at Fairfield Osborn Preserve (funds obtained by Claudia Luke). Rank, N. advisor.
   j. Place, S. CSU Council on Ocean Affairs, Science and Technology Undergraduate Research Support Program $1,250. In support of two undergraduate research projects.

3. **Chemistry**
   b. Lillig, J. SSU RSCAP Mini-grant $2674, mostly student assistant funding.
**4. Computer Science**

- **Rivoire, S.** Travel Support for the 2015 IEEE International Symposium on Performance Analysis of Systems and Software, National Science Foundation, Division of Computing and Communication Foundations. Award amount: $10,000 in student travel support
- **Rivoire, S.** Source Code Stylometry: The Substance of Coding Style, SSU RSCAP Mini-grant program, $4,403 in student assistant funding.

**5. Engineering Science**

- **Ou, Jack.** SSU RSCAP Mini-grant $4460, supplies and student assistant funding.
- **Farahmand, Farid.** SSU RSCAP Mini-grant $1000, student assistant funding.

**6. Kinesiology**

- **Bulent, S.** SSU RSCAP Mini-grant: Effects of Resistance Training with or without vibration on BMD and Bone Turnover Markers. $3500.
- **Bulent, S.** WATERS: Caitlin Thornton. Effects of self-paced restoration work and walking on heart rate responses, energy expenditure, and psychological wellbeing. $450.

**7. Mathematics & Statistics**

- **Project Make the Way, PI is Ben Ford.** Project Make the Way is an initiative that will enable teachers to integrate Maker techniques with STEM contexts to drive students’ learning of mathematics, $219,936.
- **Ford, B.** CA Math Project North Coast, $29,000.
- **Ford, B.** North Bay Math Project, $21,000.

**8. Nursing**

- **Wolcott, K.** Hartford Center for Gerontological Nursing Excellence - $5000 for research "Palliative Care in the ICU and Moral Distress of Nurses"
- **Wilkosz, ME.** Song Brown $184,333
- **Wilkosz, ME.** Song Brown Special Projects $145,000

**9. Physics & Astronomy**

- **Rockets and CubeSats in the STEM Pipeline, California Space Grant, L. Cominsky PI,** $9,979 in February 2015
- **Cominsky, L.**
  - Project Title: Teaching Einstein’s Universe at Community Colleges
  - Sponsor: NSF/PHY'S – LIGO Research Support
  - POC: Kathleen McCloud, kmccloud@nsf.gov, 703-292-8236
  - Period and Amount: 7/1/14 – 6/30/17; $262,057
- **Severson, S.** "Building the Sonoma State University Physics Teacher Pipeline", PhysTEC Teacher Recruitment grant (PhysTEC $29,889). Program to increase the number of High School Physics Teachers, focused on recruitment effort.
- **Han, S.** 2015 Sustainability in the Classroom Award. PHYS100 Descriptive Physics. A sub-grant to a GMC/Academic Integration Projects grant. Sustainability executive committee and the waters collaborative. $1500

**E. CONTINUED FUNDING**

SSU Sponsored Programs reports that as of July 1, 2015, Science & Tech PIs have 43 active projects totaling nearly $15M in state and federal funding. Of the continuing awards, Lynn Cominsky’s FERMI award has been ongoing (since 2000) with total funding of $8,209,203.
### 1. School level continued funding


b. Brannen, NS, QC254 LSAMP YEAR 2 OF 5 (ORSP #1226). The continued funding is $25,000 for a total of $55,250. University Enterprises, Inc. – Sacramento State University.

c. Brannen, NS, QC255 LSAMP-NSF YEAR 2 OF 5 (ORSP #1226). The continued funding is $15,000 for a total of $30,000. University Enterprises, Inc. – Sacramento State University.

d. Mathematics, Engineering, Science Achievement (MESA) MEP Award, PI Stauffer, L. $10,000, Office of the UC President.

### 2. Biology


c. Place, S. National Science Foundation – Polar Programs: PLR-1447291. $85,127 (PI) 08/18/14 – 04/30/16. “Identifying adaptive responses of polar fishes in a vulnerable ecosystem”.

d. Place, S. National Institutes of Health – National Institute on Aging: 1R01AG037969-01 $1,771,841 (co-PI) 09/16/10 - 09/15/15. “Characterization and genetic analysis of aging in Daphnia”.

### 3. Chemistry


### 4. Geology


### 5. Physics & Astronomy

a. Cominsky, L. Project Title: GLAST Education and Public Outreach
   - Sponsor: NASA GSFC/Stanford University
   - POC: Tom Langenstein, tom.langenstein@stanford.edu 650-725-4108
   - Period and Amount: 10/01/00 - 09/30/16; $8,209,203

b. Cominsky, L. Project Title: Swift and GLAST Public Relations
   - Sponsor: NASA GSFC
   - POC: Neil Gehrels, neil.gehrels@nasa.gov, 301-286-6546
   - Period and Amount: 1/19/12-01/18/16; $180,000 (in NCE year)

c. Cominsky, L. Project Title: XMM-Newton Education and Public Outreach
   - Sponsor: NASA GSFC
   - POC: Steve Snowden, Steven.L.snowden@nasa.gov, 301-286-8100
   - Period and Amount: 05/23/12-05/22/16; $120,000 (in NCE year)

d. Cominsky, L. Project Title: Swift Education and Public Outreach
   - Sponsor: NASA GSFC
POC: Neil Gehrels, neil.gehrels@nasa.gov, 301-286-6546
Period and Amount: 5/25/2012 – 5/24/2016; $240,000 (in NCE year)
e. Cominsky, L. Project Title: Nuclear Spectroscopic Telescope Array Education and Public Outreach
Sponsor: NASA/CalTech
POC: Caprece Anderson, cap@srl.caltech.edu, 626-395-6809
Period and Amount: 7/1/08-12/31/2015; $505,450 (in NCE year)
f. Cominsky, L. Project Title: S4: Small Satellites for Secondary Students
Sponsor: NASA EPOESS
POC: Therese A. Kucera, Therese.A.Kucera@nasa.gov, 301-286-0829
Period and Amount: 1/1/12-12/31/15; $549,308 (in NCE year)
g. Cominsky, L. Project Title: Learning by Making: STEM Success for Mendocino County
Principal Investigator: Susan Wandling (Cominsky is STEM lead)
Sponsor: Department of Education – i3
POC: Beth Plewa, beth.plewa@ed.gov, 202-260-1481
Period and Amount: 1/1/14 – 12/31/18; $2,930,459

F. PROFESSIONAL DEVELOPMENT ACTIVITIES

1. Biology
   a. Cohen, MF. NSF-WIDER, Fall 2014
   b. Pillai, M. CSU Biology Chairs Council Meeting/CSUPERB Annual Conference
   c. Pillai, M. Attended COAST Meeting at the Chancellor's Office
   d. Rank, N. December 2014. Dr. Christopher Wheat of the University of Stockholm visited the Sonoma State University campus and led a 5-day workshop on the use of PoolSeq methods for the analysis of DNA sequence variation at protein coding genes. Dr. Wheat's methods are targeted towards evolutionary functional studies of genetic variation and to lead the workshop he gave us all access to his supercomputer at Stockholm. Workshop attendees included Nathan Rank (faculty member, SSU), Elizabeth Dahlhoff (faculty member, Santa Clara University), graduate student Kevin Roberts and undergraduates Jared Deyermin and Andrew Benson. Based on the workshop, Kevin Roberts has been analyzing genomic variation for populations in the intermediate drainage Bishop Creek, where interactions between mitochondrial and nuclear loci affecting the stress response have been documented.
   e. Rank, N. Attended the "2015 Water Resources and Policy Initiatives Conference" from the CSU Water Resources and Policy Initiatives group. April 9-10, Fresno CA.
   f. Place, S. Participant in Short Throw project

2. Chemistry
   a. Works, C. Lead in App workshop
   b. Works, C. Participate in Socrative group

3. Computer Science
   a. Rivoire, S. Computing Research Association Women's Mid-Career Mentoring workshop (Portland, OR, June 2015 -- travel funded by CRA-W)
   b. Rivoire, S. Final semester of participation in WIDER "Reinventing the College Lecture" project in Spring 2015

4. Engineering Science
   a. Khaleel, H. Tools for teaching workshop through SSU’s Faculty Center

5. Geology
   a. James, M. Field trip to Bodega Head for Sonoma County Museum to examine geology and history of failed Pacific Gas & Electric nuclear power plant. January 10, 2015.
**6. Kinesiology**

| b. | Sokmen, B. American College of Sports Medicine, Southwest Chapter, Oct 2014, Costa Mesa, CA. |
| c. | Sokmen, B. Participated in several Moodle workshops over the year. |
| d. | Carlton, E. Participated in an Implicit Bias workshop at Sonoma State. |

**7. Mathematics & Statistics**

| a. | Lahme, B. Joint Math Meetings of the MAA/AMS in San Antonio, TX, January 2015 |
| b. | Lahme, B. Harvard Calculus Consortium Meeting, San Antonio, TX, January 2015 |
| c. | Lahme, B. Illustrative Mathematics/Student Achievement Partner Workshop, Tucson, AZ, February 2015 |
| d. | Lahme, B. MAA Section Meeting, Foothills College, February 2015 |
| f. | Kanaana, I. Small stipend project: Wacom Tablets in Math (together with Martha Shott and Brigitte Lahme), SSU, Fall 2014 |
| g. | Shott, M. Mathematical Association of America's Project NExT (New Experiences in Teaching) program. Professional development workshops in August 2014 and January 2015. |
| h. | Shott, M. Moodle workshop: Customizing Course pages, August 2014. |

**8. Nursing**

| a. | Ritter, K. Moodle workshop which pertained to the new version of Moodle August 2014 |
| b. | Roberts, D. WASC Student Access Conference |
| c. | Roberts, D. CHAMP Conference on Seniors |
| d. | Roberts, D. QSEN Bay Area Conference |
| e. | Roberts, D. Bay Area Nursing Educators Conference |
| f. | Roberts, D. CACN Conference |
| g. | Roberts, D. CSU Nursing Deans and Directors Meeting |
| h. | Roberts, D. CO ADN/CACN Conference |
| i. | Roberts, D. SSU Diversity Conference |
| j. | Rockett, K. Application workshop on campus. Met every month for 5 months. Faculty participation representing other academic disciplines. Collaboratively, we shared education applications with individual presentations each month. Worthwhile academically and in developing relationships with other departments on campus. |
| k. | Wolcott, K. Blackboard Collaborate project with Ann Steckel for the faculty small stipend project. Trialed using BB Collaborate with guest lecturer for students in web-based class session. |
| l. | Wilkosz, ME. California Association of Nurse Practitioners Annual Conference |
| m. | Wilkosz, ME. Rubric Mini Grant recipient professional development |
o. Kelly, MD. Attended 8th Annual Emerging Technologies for Online Learning International Symposium, Dallas, Texas.

p. Kelly, MD. Recertification earned Nurse Educator, National League of Nursing

q. Kelly, MD. Recertification earned Family Nurse Practitioner ANCC Board Certification

r. Kelly, MD. Designated as Program Geriatric content expert for Board of Registered Nursing

9. Physics & Astronomy

a. Severson, S. 6th International Learning Assistant Workshop, Fall 2014. The Learning Assistant program is a highly supported peer teaching experience that has been shown to improve students’ learning and attitudes toward science in undergraduate courses and recruit talented science and math students into teaching careers.

b. Severson, S. NSF WIDER project collaboration, "Redefining the College Lecture" Fall 2014. A faculty professional development program looking at proven practices in STEM education.


d. Severson, S. Building a Thriving Undergraduate Physics Program Workshop, Spring 2015. The American Physical Society (APS) in conjunction with the American Association of Physics Teachers (AAPT) held a workshop to assist departments in developing strategies for increasing enrollment of physics majors.

e. Shi, H. Fall 2014, WIDER Project with the UC Berkeley team, focusing on Flipped Classroom Teaching techniques.

f. Targett, T. Participated in the NSF WIDER project collaboration, Redefining the College Lecture. This is a faculty professional development program looking at proven practices.

G. TEACHING, SCHOLARSHIP, AND/OR SERVICE COLLABORATIONS

1. Biology

a. Keller, MF. Facilitated service learning projects for 3 students in BIOL 323–Spring 2015. Supervised students in designing and completing educational outreach drawers used by the Biology outreach program.


d. Keller, MF. Participated in reorganization of the SCI 120 lecture and lab curriculum. Participated with SCWA to have one student complete research through the WATERS program.

e. Pillai, M. Attended and presented at the Panel of local High School Counselors.

f. Pillai, M. Participated/Facilitated (with SST Dean and the campus Development Officer) a student internship opportunities project with a local biotechnology firm. Received $10,000 in the form of a donation to support student research in molecular cell biology.


h. Place, S. Currently working with the Sonoma County Children's Museum to develop educational programming centered around water quality issues.

2. Chemistry

a. Farmer, S. Spearheaded new public outreach efforts designed to increase public interest in chemistry through public lectures. In the last year, lectures have been given at: Petaluma High
### 3. Computer Science

a. **Rivoire, S.** Web chair and workshop leader of Expanding Your Horizons-Sonoma County

b. **Rivoire, S.** Member of SRJC MESA Advisory Board

### 4. Geology

a. **James, M.** Volunteer for events and exhibits, Sonoma County Museum, Santa Rosa.

b. **James, M.** Collaboration on biographical study of ornithologist and anthropologists Edward Winslow Gifford (1887-1959) with Professor Matthew Spriggs, Australian Research Council (ARC) Laureate Fellow, The Australian National University, Canberra, Australia.

c. **Mookerjee, M.** Co-chair session at AGU conference on “Cyberinfrastructure for field work: data standards, computer applications, instrumentation and best practices” Fall 2014

d. **Mookerjee, M.** Co-taught short course with Fred Vollmer (SUNY New Paltz), and Paul Karabinos (Williams College) on “Strain Programs for teaching and research,” Summer 2014

e. **Mookerjee, M.** Co-chair session with Saad Haq (Purdue University) “Quantitative approaches toward structural analysis” at Structural Geology and Tectonics Forum, Summer 2014

f. **Mookerjee, M.** Steering Committee Member for NSF funded Project: The internet of Samples in the Earth Sciences (iSamples)

### 5. Kinesiology

a. **Sokmen, B.** Prepared and taught one unit KIN 101: Physical Activity and Copeland Creek Stewardship class (30 students) (Spring 2015) as a volunteer base. It was a two-hours class each week and students engaged in cleaning and preserving Copeland Creek and gardens in SSU

b. **Sokmen, B.** Advisor for our KIN Club, SSU climbing club, and SSU women’s soccer club

c. **Carlton, E.** Invited to teach at Beijing Sport University in Beijing China. I worked with BSU faculty
and other foreign language faculty.
d. Carlton, E. Served on a committee that reviewed college scholarship applications for high school students whose parents work for the United States Postal Service.

6. Mathematics & Statistics

a. Lahme, B. Smarter Balanced Digital Library Project: Collaboration between Illustrative Mathematics, Desmos, Teaching Channel with teachers from Sonoma Valley High School and math educators around the country. This project provided high quality professional development for HS teachers and supported them as they collaboratively developed and taught lessons on mathematical modeling and graphing functions. A series of professional videos from the teaching channel follow the teachers through the project and can be found at: https://www.teachingchannel.org/blog/2015/05/15/collaborating-around-math-before-during-and-after-lessons/
b. Lahme, B. Illustrative Mathematics Content Lead and Leadership Team
c. Morris, J. Various collaborations with grad students from San Francisco State University studying advanced topics in analysis
d. Shott, M. Sustainability in the Classroom project with Dr. Christopher Halle and Claudia Luke. Incorporated a service-learning project into Math 470: Mathematical and Statistical Modeling in conjunction with Fairfield Osborn Preserve.

7. Nursing

a. Roberts, D. Clinical Director Jewish Community Free Clinic
b. Roberts, D. Oakmont Community Based Participatory Research Project to assess community needs for over 4500 residents
c. Wolcott, K. Collaborated with Dr Deborah Roberts on Blackboard Collaborate project for N312.
d. Wilkosz, ME. Santa Rosa Community Health Center collaboration for Preceptor Workshop
e. Kelly, MD. Community service collaboration with Oakmont to conduct community needs assessment.
f. Kelly, MD. On-going project with Meals on Wheels to place and teach students to conduct in home nutritional assessments.

8. Physics & Astronomy

a. Cominsky, L. Conducted PD activities for teachers in Mendocino county (10 total days from last June through now). Also did some talks for other teachers that would be considered PD like the Internet lecture given to the AAPT in Arkansas/Oklahoma/Kansas (AOK) section in Sept 2014.
b. Cominsky, L. All E/PO group falls into this category. See http://epo.sonoma.edu for details.
c. Severson, S. Organized a meeting with local High School Physics Teachers, in a collaboration we call the "Physics in our Neighborhood" (PION) group. Distributed newly created promotional materials for our SSU P&A Department.
e. Severson, S. Organize and conduct SSU Observatory’s Viewing Nights (~ 4 public and ~ 3 course events per semester), serving students and the public.
f. Severson, S. Invited presentation at ZTF Summer Undergraduate Astronomy Institute, a Caltech
and Pomona College program.

g. **Severson, S.** Assist in the organization of the SSU Department of Physics & Astronomy Senior Capstone Seminar, with additional bi-weekly preparation meetings with students.

h. **Severson, S.** Member of the SSU Robert Noyce Scholarship Program team funded by the National Science Foundation

i. **Severson, S.** Organization of open house and presentation at Seawolf Decision Day.

j. **Severson, S.** Presentation for the Piner High School student SSU visit.

k. **Shi, H.** Supervised one capstone project to successfully set up and test a position sensitive cathodoluminescence system to analyze minerals and other materials.

l. **Shi, H.** Directed a student research project so we can now fabricate well aligned titanium oxide nanotubes for possible applications in solar technology. Submitted abstract to the Materials Research Society Conference, to be held in November in Boston.

m. **Qualls, J.** Outreach- Seawolf Decision Days

n. **Qualls, J.** Outreach- Science Shows at Yalupa Elementary

o. **Targett, T.** Aided NASA/ESO group in their development of the “Big Ideas in Cosmology” online learning course.

p. **Qualls, J.** WASC Critical Thinking and Information Literacy workshop at CSU Hayward.

q. **Qualls, J.** Developed new cross campus collaboration and submitted new proposal NSF-IUSE-STEM Education Through Sophomore Entrepreneurship (SETSE) ~$1.4 Million


s. **Targett, T.** Conducted Newspaper (Press Democrat and Sonoma State Star) interviews

t. **Targett, T.** Main speaker at Tech Trek, a summer program designed to encourage female middle-school students to pursue arrears in STEM.

u. **Targett, T.** Main speaker at SPS organized joint SSU/SRJC visit to Furguson Observatory.

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

Members of Science & Technology service on a myriad of communities at the department, school, and university levels. These valuable contributions are not listed here separately; however, a full listing is available from the School Office.

#### 1. School level service

a. 2014 North Bay Discovery Day - Bay Area Science Festival at the Sonoma County Fairgrounds, October 2014. SST hosted the *Walk Through the Watershed* exhibit. Approximately 10,000 individuals attended. Booth was set up at the Sonoma Co. Fairgrounds in Santa Rosa. Led by Fran Keller and team of SSU students.

b. SST Sophomore Year Experience. Held welcome back event for sophomores in partnership with Alvin Nguyen, SSU’s Sophomore Year Experience Coordinator. Faculty lead: Richard Whitkus.

c. Piner High School MOU - Finalized MOU with Piner High and Santa Rosa Schools for STEM certificate pathway and implemented in 2014-15 including fall kick-off event at Piner High and spring visit to SSU Science & Tech. Also facilitated faculty mentorship of Piner student projects. Faculty lead: Richard Whitkus.

d. The Sonoma County Science Fair (February 27, 2015) was held for the third time at Sonoma State University. Over 125 K-12 students participated and award winners advanced to state level competition. Our School handled campus logistics (rooms, catering, parking, etc.) and SST students and faculty served as judges and hosted workshops for fair participants.

e. CSU COAST representatives: Dan Crocker (Biology), Sean Place (Biology), Lynn Stauffer

f. CSU CSUPERB representatives: Farid Farahmand (ES), Joe Lin (Biology), Murali Pillai (Biology),
Jenn Lillig (Chemistry), Lynn Stauffer (SPC)
g. SSU MESA participated in the Napa Valley College STEM Fair – April 2015.

### 2. Biology

a. Crocker, DE. Appointed to National Academy NRC study panel on 'Cumulative effects of anthropogenic stressors on marine mammals'.
b. Keller, MF. Designed and wrote curriculum for two summer upper division courses in Biology, BIOL 497 Tropical Biodiversity and BIOL 497 Tropical Ecology and Behavior. These courses were held in Belize Summer 2015, June 14-29. Eighteen students actually enrolled and went to Belize. For some students this was their first time out of the United States. The courses were a success and were very rigorous and also very fun. Students held bats, birds, snakes, frogs, and participated in cultural activities and even snorkeled along the beautiful coral reef system.
c. Khudyakov, JI. Assisted in Biology 325 (Molecular and Cell Biology Laboratory) course development in collaboration with Dr. Joseph Lin
d. Rank, N. Conducted external report for San Jose State University Biology Program Review.
e. Rank, N. Organized a visit by students from CSU Bakersfield on water management in Central California, especially on the Bakersfield campus.
f. Rank, N. Oversee implementation of the SSU Biodiversity Outreach Program, funded by $6500 of IRA support and supplemented by IDC return on my NSF grant. We were awarded funding for 2015-2016 in May 2015.
g. Place, S. Faculty representative and SSU signatory for the Central and Northern California Ocean Observing System (CeNCOOS)

### 3. Chemistry

a. Casey, J. Working on the Foundational Level General Science (FLGS) waiver program for the School of Science and Technology

### 4. Computer Science

a. Rivoire, S. Designed new course, CS 425 Parallel Computing
b. Rivoire, S. Name reader at Commencement
c. Rivoire, S. Program committee member for Workshop on High-Performance, Power-Aware Computing
d. Rivoire, S. Student Travel Grant Chair for 2015 International Symposium on Performance Analysis of Systems and Software (ISPASS)

### 5. Engineering Science

a. Engineering Science led by Jack Ou held two summer 2015 workshops for HS students introducing engineering (Make Your Own Wearable Workshop for girls and Circuits 101 for all); funded by a donation from the Circuit and Systems division of IEEE.

### 6. Geology

a. James, M. Elected president of the American Association for the Advancement of Science, Pacific Division, for 2017.
b. James, M. Organizer and presenter of three-day international symposium with 33 speakers concerning the Galápagos Islands titled: Galápagos 2015: Science, Conservation, and History in the 180 Years Since Darwin. For the annual meeting of the American Association for the Advancement of Science, Pacific Division, June 15-17, 2015, at San Francisco State University.
c. Mookerjee, M. Vice President of the Structural Geology and Tectonic Forum (organizing meeting at SSU for Summer 2016)

### 7. Kinesiology
I. ADDITIONAL IMPORTANT ACCOMPLISHMENTS

### 8. Mathematics & Statistics

- **Lahme, B.** Association for Women in Mathematics - travel grant reviewer
- **Lahme, B.** Mathematical Association of America Committee on Teaching of Undergraduate Mathematics
- **Shott, M.** Faculty mentor for the CSU LSAMP Global Awareness Program trip to Chiang Mai, Thailand.

### 9. Nursing

- **Rockett, K.** Mentored 2 Windsor senior students interested in Nursing- Affiliation with Santa Rosa Memorial Hospital.
- **Rockett, K.** Member of the Ethics/Palliative Care Committee and the Research Committee at Santa Rosa Memorial Hospital.
- **Kelly, MD.** Co-Chair Coaches Consortium - collaborate with 15 agencies in standardizing safe transition intervention
- **Kelly, MD.** Consultant to 5 regional health systems on implementing evidenced based home visiting models
- **Kelly, MD.** Volunteer Sea Kayak Guide with Environmental Traveling Companions which hosts people with disabilities and disadvantaged youth in guided outdoor adventures.

### 10. Physics & Astronomy

- **Cominsky, L.** AAAS/PHYs division Executive Committee, 2015 – 2018
- **Cominsky, L.** Vice Chair, NSF Committee of Visitors for Astronomical Sciences Division, 2014
- **Severson, S.** Lead author and review coordinator, Department of Physics & Astronomy 2015 Program Review.
- **Severson, S.** Organize and coordinate the PION, Physics High School Teacher advisory group.
- **Severson, S. and Targett, T.** Organized October 2014 Solar Eclipse Viewing event attended by more than 300 students, staff, faculty and members of the public.
- **Shi, H.** Advisor of the Society of Physics Students (SPS) chapter at SSU. We won two national award from the National SPS Office: Marsh White Award to support projects designed to promote interest in physics among students and the general public, and Future Faces of Physics Awards to support projects designed to promote physics across cultures.
- **Qualls, J.** NSF Panelist –MRI – Major Research Instrumentation 4/14/15
- **Qualls, J.** NMHFL - User facility panelist
- **Targett, T.** Faculty advisor, Sonoma State “eSports” Club (120 student members)

### I. ADDITIONAL IMPORTANT ACCOMPLISHMENTS

#### 1. Science & Technology

- **SSU Science Symposium, May 7, 2015** - Sixty-five posters representing the scholarly work of over 120 students in the School of Science & Technology. Students from all nine SST academic departments presented. See the symposium program at [http://www.sonoma.edu/scitech/symposium/](http://www.sonoma.edu/scitech/symposium/).
- **A Science & Tech Peer Advisor program was put in place with support from the Academic and Career Exploration Office and our NSF STEP grant. A total of 80 students from across 9 majors (including 15 undeclared students) were advised.**
- **SSU student team won the 2015 CSUPERB Innovation Corps (iCorps) student competition. The cross-disciplinary team of engineering, kinesiology, and finance students won the system-wide**
challenge after presenting their device to quantify tremors associated with Parkinson’s disease.

d. SST’s Summer High School Internship Program (SHIP) 2015. This highly successful program is in its 8th year. The program is a collaboration between SSU’s School of Science & Technology and the Sonoma County Office of Education. See [http://www.sonoma.edu/scitech/hs/](http://www.sonoma.edu/scitech/hs/) for details. Suzanne Rivoire coordinates the program.

e. Science & Technology is the academic partner on the new Craft Beer Appreciation Certificate program in partnership with Lagunitas and the School of Extended and International Education.

### 2. Biology

a. Biology completed extensive revision of its curriculum including adoption of a new two-semester lower division sequence (BIO 130 and BIO 131), a change to the BA degree to reduce required core courses and a reinstatement of the zoology, marine biology and physiology concentration. The revisions are intended to improve progress to graduation, allow for greater flexibility in the degree, and to better meet student program needs. Chair Murali Pillai led the curriculum revision efforts and approvals process.

b. Biology implemented a comprehensive field and laboratory course fee structure across non-major and majors’ courses to support a quality learning experience for students. Chair Murali Pillai led the fee proposal and approval efforts.

c. Michelle Ferraro, MS Biology, won second place in the Graduate Biological and Agricultural Sciences Session of the 29th Annual CSU Student Research Competition for her research project titled, Evaluating Optimal Foraging Theory in Female Northern Elephant Seals.

d. Nick Geist’s Dec 2014 paper, "Breathing in a box: Constraints on lung ventilation in giant pterosaurs", featured on National Geographic’s "Phenomena".

e. Crocker, DE. Elected Fellow of the California Academy of Sciences.

f. Pillai, M. Mentored more than a dozen undergraduate students in their senior/independent research and internship activities

g. National Science Foundation, Division of Integrative Organismal Systems. Caroline Williams, Elizabeth Dahlhoff, Nathan Rank, Preproposal invited for submission as full proposal in August 2015. Adaptive significance of genomic variation in a montane insect. Physiological and genetic basis of responses to winter in a Sierra willow leaf beetle.

### 3. Computer Science


b. Lyle, M. Secured a donation of network equipment from Alcatel/ATT for new switches and routers worth $75,000 for the department Internet Teaching Lab to upgrade some of the obsolete equipment in the lab.

c. Rivoire, S. President’s Award for Excellence in Scholarship, 2015

### 4. Geology


b. James, M. Continuing to serve as elected member of the Executive Committee and Council, American Association for the Advancement of Science, Pacific Division.

c. James, M. Elected to the Honolulu-based Board of Directors of the 280-foot tall ship Falls of Clyde, the last four-masted, iron-hulled tanker in the world.

d. James, M. Served as 2014 chair of the Board of Heads and Chairs of the American Geophysical Union, chaired annual meeting in San Francisco.
e. **James, M.** Elected to the Board of Directors of the Friends of the San Francisco Maritime Museum Library; Chair of the Publications Committee; Member of the award committee for the 2015 Karl Kortum Award for Maritime History.

f. **James, M.** Continuing as a Fellow of the California Academy of Sciences.

g. **James, M.** Continuing as elected member of the General Assembly of the Charles Darwin Foundation.

h. **James, M.** Nearing completion (publication expected late 2015, early 2016) with Oxford University Press of book project: Collecting Evolution – The Galápagos Expedition that Vindicated Darwin.

i. **James, M.** Served as oral historian and videographer for 50th anniversary celebration of the Charles Darwin Research Station, event held at the University of California, Berkeley.

j. **Mookerjee, M.** Lead NSF-funded field trip with Geoscientist and Cyberinfrastructure experts to Yosemite NP and Owens Valley (Summer ’14 and ’15)

5. **Kinesiology**

   a. **Carlton, E.** Served as a Reviewer for the journal Sex Roles.

   b. **Carlton, E.** Continued to represent Unit 3 employees as the CFA Faculty Rights chair.

6. **Nursing**

   a. **Wendy Smith** named as one of the winners of the 2015 CANP (California Association for Nurse Practitioners) Award. The award recognizes CANP members who demonstrate excellence in furthering the nurse practitioner role in either legislative efforts or clinical application.

   b. Ongoing National (ACEN) and State (BRN) Accreditation efforts.

   c. Successfully launched and evaluated new GE course NURS 490.

   d. Discontinuation of the Direct Entry MSN Program to better utilize resources.

   e. Health Maintenance Program offering physical to underserved.

   f. Implemented new on-line application system for Pre-Licensure applications.

   g. Negotiated and secured 25 new clinical placements.

   h. Summer 2015 Transition to Practice Program grew to 109 nurse residents in 8 regional hospitals (Marin General, Kaiser Santa Rosa, Kaiser San Rafael, Sutter Novato, Sutter Santa Rosa, Queen of the Valley Napa, Memorial Santa Rosa, and Petaluma Valley).

7. **Physics & Astronomy**

   a. Senior Capstone Seminar with 12 projects including the 1st place award winner at the 2015 Science Symposium.

   b. **Cominsky, L.** SSU Presidential Award for Excellence in Scholarship, March 2015

   c. **Cominsky, L.** Aerospace Awareness Award from the Women in Aerospace organization, October 2014.

   d. **Qualls, J.** Directed 6 undergraduate students in research.

   e. **Han, SY.** Attended “James Brooks Memorial Symposium” at the National High Magnetic Field Laboratory, Tallahassee, Florida in May 16th, 2015